REQUEST FOR PROPOSALS FOR

SUPPLY CHAIN ENHANCEMENTS

ISSUING OFFICE

PENNSYLVANIA LIQUOR CONTROL BOARD
BUREAU OF PURCHASING AND CONTRACT ADMINISTRATION
ROOM 316, NORTHWEST OFFICE BUILDING
HARRISBURG, PENNSYLVANIA 17124

RFP NUMBER 20140401

DATE OF ISSUANCE

SEPTEMBER 19, 2014

REQUEST FOR PROPOSALS FOR

SUPPLY CHAIN ENHANCEMENTS

TABLE OF CONTENTS

APPENDIX II, GO LIVE READINESS ASSESSMENT

APPENDIX JJ, RIMS INTERFACE DRAWING

APPENDIX KK, RIMS INTERFACES DESCRIPTIONS

CALENDAR OF EVENTS

The Pennsylvania Liquor Control Board will make every effort to adhere to the following schedule:

Activity	Responsibility	Date
Deadline to submit Questions via email to: Issuing Officer Philip Friedrich at pfriedrich@pa.gov	Potential Offerors	10:00 AM Tuesday, October 7, 2014
Pre-proposal Conference Room 117, Northwest Office Building, 910 Capital Street, Harrisburg, PA 17124.	Issuing Office/Potential Offerors	1:30 PM Tuesday. October 14, 2014
Answers to Potential Offeror questions posted to the Pennsylvania Department of General Services website (http://www.emarketplace.state.pa.us/Search.aspx) no later than this date.	Issuing Office	Tuesday, October 21, 2014
Please monitor website for all communications regarding the RFP.	Potential Offerors	Regularly until proposal due date
Sealed proposals must be received by the Issuing Office at the Pennsylvania Liquor Control Board, Purchasing and Contract Administration Division, Room 316 Northwest Office Building, Harrisburg, PA 17124		1:00 PM Tuesday November 18, 2014

PART I

GENERAL INFORMATION

I-1.   Purpose. This request for proposals ("RFP") provides to those interested in submitting proposals for the subject procurement ("Offerors") sufficient information to enable them to prepare and submit proposals for the Pennsylvania Liquor Control Board's ("PLCB") consideration on behalf of the Commonwealth of Pennsylvania ("Commonwealth") to satisfy a need for "Supply Chain Enhancements" ("Project").

I-2.   Issuing Office. The PLCB ("Issuing Office") has issued this RFP on behalf of the Commonwealth. The sole point of contact in the Commonwealth for this RFP shall be Philip J. Friedrich, Bureau of Purchasing and Contract Administration, Room 316 Northwest Office Building, 910 Capital Street, Harrisburg, PA 17124, pfriedrich@pa.gov, the Issuing Officer for this RFP. Please refer all inquiries to the Issuing Officer.

I-3.   Scope. This RFP contains instructions governing the requested proposals, including the requirements for the information and material to be included; a description of the service to be provided; requirements which Offerors must meet to be eligible for consideration; general evaluation criteria; and other requirements specific to this RFP.

I-4.   Problem Statement. The PLCB is a multi-faceted agency responsible for the sale and control of beverage alcohol throughout the Commonwealth and is one of the largest purchasers of wine and spirits in the country. The purpose of this RFP is to select an Offeror that will provide innovative and fresh approaches to enhance and maintain the data systems that underpin the PLCB's Supply Chain processes and reduce costs associated with those processes. The primary objective of this RFP is to improve the efficiency and responsiveness of, and reduce costs associated with, the PLCB's Supply Chain systems and processes. The PLCB expects the selected Offeror to identify and implement enhancements to PLCB's supply chain systems and to the warehouse interfaces.

Additional detail is provided in **Part IV** of this RFP.

I-5.   Type of Contract. It is proposed that if the Issuing Office enters into a contract as a result of this RFP, it will be a fixed fee, deliverables-based contract containing the IT Contract Terms and Conditions as shown in **Appendix A** and available at: http://www.dgsweb.state.pa.us/comod/CurrentForms/IT_Terms_and_Conditions.doc, as well as Special Contract Terms and Conditions as shown in **Appendix B** and the Liquor Code Section as shown in **Appendix C**. The Issuing Office, in its sole discretion, may undertake negotiations with Offerors whose proposals, in the judgment of the Issuing Office, show them to be qualified, responsible and capable of performing the Project.

I-6.   Rejection of Proposals. The Issuing Office reserves the right, in its sole and complete discretion, to reject any or all proposals received as a result of this RFP.

I-7. **Incurring Costs.** The Issuing Office is not liable for any costs the Offeror incurs in preparation and submission of its proposal, in participating in the RFP process or in anticipation of award of the contract.

I-8. **Pre-proposal Conference.** The Issuing Office will hold a Pre-proposal conference as specified in the Calendar of Events. The purpose of this conference is to provide opportunity for clarification of the RFP. Offerors should forward all questions to the Issuing Office in accordance with **Part I, Section I-9** to ensure adequate time for analysis before the Issuing Office provides an answer. Offerors may also ask questions at the conference. In view of the limited facilities available for the conference, Offerors should limit their representation to two (2) individuals per Offeror. The Pre-proposal conference is for information only. **Any answers furnished during the conference will not be official until they have been verified, in writing, by the Issuing Office.** All questions and written answers will be posted on the Department of General Services' ("DGS") website as an addendum to, and shall become part of, this RFP. Attendance at the Pre-proposal Conference is optional.

I-9. **Questions & Answers.** If an Offeror has any questions regarding this RFP, the Offeror must submit the questions by email **(with the subject line "RFP 20140401 Question")** to the Issuing Officer named in **Part I, Section I-2** of the RFP. If the Offeror has questions, they must be submitted via email **no later than** the date indicated on the Calendar of Events. The Offeror shall not attempt to contact the Issuing Officer by any other means and questions may not be submitted through any other method. In accordance with **Part I, Section I-21**, the Offeror shall not contact any other employee of the PLCB regarding the RFP. The Issuing Officer shall post the answers to the questions on the DGS website by the date stated on the Calendar of Events**.**

All questions and responses as posted on the DGS website are considered as an addendum to, and part of, this RFP in accordance with RFP **Part I, Section I-10.** Each Offeror shall be responsible to monitor the DGS website for new or revised RFP information. The Issuing Office shall not be bound by any verbal information nor shall it be bound by any written information that is not either contained within the RFP or formally issued as an addendum by the Issuing Office. The Issuing Office does not consider questions to be a protest of the specifications or of the solicitation. The required protest process for Commonwealth procurements is described on the DGS website http://www.dgsweb.state.pa.us/comod/ProtestProcedures.doc**.**

I-10. **Addenda to the RFP.** If the Issuing Office deems it necessary to revise any part of this RFP before the proposal response date, the Issuing Office will post an addendum to the DGS website. It is the Offeror's responsibility to periodically check the website for any new information or addenda to the RFP. Answers to the questions asked during the **Part I, Section I-8 Pre-proposal Conference** will be posted to the website as an addendum to the RFP.

I-11. **Response Date.** To be considered for selection, hard copies of proposals must arrive at the Issuing Office on or before the time and date specified in the RFP Calendar of Events. The Issuing Office will **not** accept proposals via email or facsimile transmission. Offerors who send proposals by mail or other delivery service should allow sufficient delivery time to ensure timely receipt of their proposals. If, due to inclement weather, natural disaster, or any other cause, the Commonwealth office location to which proposals are to be returned is closed on the proposal

response date, the deadline for submission will be automatically extended until the next Commonwealth business day on which the office is open, unless the Issuing Office otherwise notifies Offerors. The hour for submission of proposals shall remain the same. The Issuing Office will reject, unopened, any late proposals.

I-12. Proposals. To be considered, Offerors should submit a complete response to this RFP to the Issuing Office, using the format provided in **Part II**, providing **12 paper copies of the Technical Submittal and one (1) paper copy of the Cost Submittal and two (2) paper copies of the Small Diverse Business (SDB) participation submittal. In addition to the paper copies of the proposal, Offerors shall submit two complete and exact copies of the entire proposal (Technical, Cost and SDB submittals, along with all requested documents) on CD-ROM or Flash drive in Microsoft Office or Microsoft Office-compatible format.** The electronic copy must be a mirror image of the paper copy and any spreadsheets must be in Microsoft Excel. The Offerors may not lock or protect any cells or tabs. Offerors should ensure that there is no costing information in the technical submittal. Offerors should not reiterate technical information in the cost submittal. The CD or Flash drive should clearly identify the Offeror and include the name and version number of the virus scanning software that was used to scan the CD or Flash drive before it was submitted. The Offeror shall make no other distribution of its proposal to any other Offeror or Commonwealth official or Commonwealth consultant. Each proposal page should be numbered for ease of reference.

An official authorized to bind the Offeror to its provisions must sign the proposal. If the official signs the Proposal Cover Sheet **(Appendix G)** and the Proposal Cover Sheet is attached to the Offeror's proposal, the requirement will be met. For this RFP, the proposal must remain valid until a contract is fully executed. If the Issuing Office selects the Offeror's proposal for award, the contents of the selected Offeror's proposal will become, except to the extent the contents are changed through Best and Final Offers or negotiations, contractual obligations.

Each Offeror submitting a proposal specifically waives any right to withdraw or modify it, except that the Offeror may withdraw its proposal by written notice received at the Issuing Office's address for proposal delivery prior to the exact hour and date specified for proposal receipt. An Offeror or its authorized representative may withdraw its proposal in person prior to the exact hour and date set for proposal receipt, provided the withdrawing person provides appropriate identification and signs a receipt for the proposal. An Offeror may modify its submitted proposal prior to the exact hour and date set for proposal receipt only by submitting a new sealed proposal or sealed modification which complies with the RFP requirements.

I-13. Small Diverse Business Information. The Issuing Office encourages participation by small diverse businesses as prime contractors, and encourages all prime contractors to make a significant commitment to use small diverse businesses as subcontractors and suppliers**.**

A Small Diverse Business is a DGS-verified minority-owned business, woman-owned business, veteran-owned business or service-disabled veteran-owned business.

A small business is a business in the United States which is independently owned, not dominant in its field of operation, employs no more than 100 full-time or full-time equivalent employees,

and earns less than $7 million in gross annual revenues for building design, $20 million in gross annual revenues for sales and services and $25 million in gross annual revenues for those businesses in the information technology sales or service business.

Questions regarding this Program can be directed to:

> Department of General Services
> Bureau of Small Business Opportunities
> Room 611, North Office Building
> Harrisburg, PA 17125
> Phone: (717) 783-3119
> Fax: (717) 787-7052
> Email: gs-bsbo@pa.gov
> Website: www.dgs.state.pa.us

The Department's directory of BSBO-verified minority, women, veteran and service disabled veteran-owned businesses can be accessed from:
http://www.dgsweb.state.pa.us/mbewbe/VendorSearch.aspx

I-14.   Economy of Preparation. Offerors should prepare proposals simply and economically, providing a straightforward, concise description of the Offeror's ability to meet the requirements of the RFP.

I-15.   Alternate Proposals. The Issuing Office has identified the basic approach to meeting its requirements, allowing Offerors to be creative and propose their best solution to meeting these requirements. The Issuing Office will not accept alternate proposals.

I-16.   Discussions for Clarification. Offerors may be required to make an oral or written clarification of their proposals to the Issuing Office to ensure thorough mutual understanding and Offeror responsiveness to the solicitation requirements. The Issuing Office will initiate requests for clarification. Clarifications may occur at any stage of the evaluation and selection process prior to contract execution.

I-17.   Prime Contractor Responsibilities. The contract will require the selected Offeror to assume responsibility for all services offered in its proposal whether it produces them itself or by subcontract. The Issuing Office will consider the selected Offeror to be the sole point of contact with regard to contractual matters.

I-18.   Proposal Contents.

A. Confidential Information. The PLCB is not requesting, and does not require, confidential proprietary information or trade secrets to be included as part of Offerors' submissions in order to evaluate proposals submitted in response to this RFP. Accordingly, except as provided herein, Offerors should not label proposal submissions as confidential or proprietary or trade secret protected. Any Offeror who determines that it must divulge such information as part of its proposal must submit the signed written statement

described in subsection C. below and must additionally provide a redacted version of its proposal, which removes only the confidential proprietary information and trade secrets, for required public disclosure purposes.

B. <u>Commonwealth Use</u>. All material submitted with the proposal shall be considered the property of the Commonwealth of Pennsylvania and may be returned only at the Issuing Office's option. The Commonwealth has the right to use any or all ideas not protected by intellectual property rights that are presented in any proposal regardless of whether the proposal becomes part of a contract. Notwithstanding any Offeror copyright designations contained on proposals, the Commonwealth shall have the right to make copies and distribute proposals internally and to comply with public record or other disclosure requirements under the provisions of any Commonwealth or United States statute or regulation, or rule or order of any court of competent jurisdiction.

C. <u>Public Disclosure</u>. After the award of a contract pursuant to this RFP, all proposal submissions are subject to disclosure in response to a request for public records made under the Pennsylvania Right-to-Know-Law, 65 P.S. § 67.101, et seq. If a proposal submission contains confidential proprietary information or trade secrets, a signed written statement to this effect **(Appendix I)** must be provided with the submission in accordance with 65 P.S. § 67.707(b) for the information to be considered exempt under 65 P.S. § 67.708(b) (11) from public records requests.

Financial capability information submitted in response to Part II, Section II-7 of this RFP is exempt from public records disclosure under 65 P.S. § 67.708(b) (26).

I-19. Best and Final Offers.

A. While not required, the Issuing Office reserves the right to conduct discussions with Offerors for the purpose of obtaining "Best and Final Offers." To obtain Best and Final Offers from Offerors, the Issuing Office may do one or more of the following, in any combination and order:

1. Schedule oral presentations;

2. Request revised proposals; and

3. Enter into pre-selection negotiations.

B. The following Offerors will **not** be invited by the Issuing Office to submit a Best and Final Offer:

1. Those Offerors determined by the Issuing Office to be not responsible or whose proposals the Issuing Office has determined to be not responsive.

2. Those Offerors, which the Issuing Office has determined in accordance with **Part III, Section III-5** do not possess the financial capability, experience or qualifications to assure good faith performance of the contract.

3. Those Offerors whose score for their technical submittal of the proposal is less than seventy percent (70%) of the total amount of technical points allotted to the technical criterion.

The Issuing Office may further limit participation in the best and final offers process to those remaining responsible Offerors which the Issuing Office has, within its discretion, determined to be within the top competitive range of responsive proposals.

C. The Evaluation Criteria found in **Part III, Section III-4**, shall also be used to evaluate the Best and Final offers.

D. Dollar commitments to Small Diverse Businesses can be reduced only in the same percentage as the percent reduction in the total price offered through negotiations.

I-20. News Releases. Offerors shall not issue news releases, Internet postings, advertisements or any other public communications pertaining to this Project without prior written approval of the Issuing Office, and then only in coordination with the Issuing Office.

I-21. Restriction of Contact. From the issue date of this RFP until the Issuing Office selects a proposal for award, the Issuing Officer is the sole point of contact concerning this RFP. Any violation of this condition may be cause for the Issuing Office to reject the offending Offeror's proposal. If the Issuing Office later discovers that the Offeror has engaged in any violations of this condition, the Issuing Office may reject the offending Offeror's proposal or rescind its contract award. Offerors must agree not to distribute any part of their proposals beyond the Issuing Office. An Offeror who shares information contained in its proposal with other Commonwealth personnel and/or competing Offeror personnel may be disqualified.

I-22. Issuing Office Participation. Offerors shall provide all services, supplies, facilities, and other support necessary to complete the identified work in the manner described by the contract. The PLCB will provide project management, direction, and meeting facilities.

I-23. Term of Contract. The term of the contract will be for two (2) years and commence on the Effective Date with two (2), one (1)-year renewal options. The Issuing Officer may renew the contract incrementally or in one (1) two (2)-year step with written notification to the Selected Offeror. The Issuing Office will fix the Effective Date after the contract has been fully executed by the selected Offeror and by the PLCB, and all approvals required by PLCB contracting procedures have been obtained. The selected Offeror shall not start the performance of any work prior to the Effective Date of the contract and the PLCB shall not be liable to pay the selected Offeror for any service or work performed or expenses incurred before the Effective Date of the contract.

I-24. Offeror's Representations and Authorizations. By submitting its proposal, each Offeror understands, represents, and acknowledges that:

A. All of the Offeror's information and representations in the proposal are material and important, and the Issuing Office may rely upon the contents of the proposal in awarding the contract(s). The PLCB shall treat any misstatement, omission or misrepresentation as fraudulent concealment of the true facts relating to the Proposal submission, punishable pursuant to 18 Pa. C.S. § 4904.

B. The Offeror has arrived at the price(s) and amounts in its proposal independently and without consultation, communication, or agreement with any other Offeror or potential Offeror.

C. The Offeror has not disclosed the price(s), the amount of the proposal, nor the approximate price(s) or amount(s) of its proposal to any other firm or person who is an Offeror or potential Offeror for this RFP, and the Offeror shall not disclose any of these items on or before the proposal submission deadline specified in the Calendar of Events of this RFP.

D. The Offeror has not attempted, nor will it attempt, to induce any firm or person to refrain from submitting a proposal on this contract, or to submit a proposal higher than this proposal, or to submit any intentionally high or noncompetitive proposal or other form of complementary proposal.

E. The Offeror makes its proposal in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive proposal.

F. To the best knowledge of the person signing the proposal for the Offeror, the Offeror, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last **four (4)** years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding or proposing on any public contract, except as the Offeror has disclosed in its proposal.

G. To the best of the knowledge of the person signing the proposal for the Offeror and except as the Offeror has otherwise disclosed in its proposal, the Offeror has no outstanding, delinquent obligations to the Commonwealth including, but not limited to, any state tax liability not being contested on appeal or other obligation of the Offeror that is owed to the Commonwealth.

H. The Offeror is not currently under suspension or debarment by the Commonwealth, any other state or the federal government, and if the Offeror cannot so certify, then it shall submit along with its proposal a written explanation of why it cannot make such certification.

I. The Offeror has not made, under separate contract with the Issuing Office, any recommendations to the Issuing Office concerning the need for the services described in its proposal or the specifications for the services described in the proposal.

J. Each Offeror, by submitting its proposal, authorizes Commonwealth agencies to release to the Commonwealth information concerning the Offeror's Pennsylvania taxes, unemployment compensation and workers' compensation liabilities.

K. Until the selected Offeror receives a fully executed and approved written contract from the Issuing Office, there is no legal and valid contract, in law or in equity, and the Offeror shall not begin to perform.

I-25. Notification of Selection.

A. **Contract Negotiations.** The Issuing Office will notify the Offeror selected for negotiations after the Issuing Office has determined, taking into consideration all of the evaluation factors, the proposal that is the most advantageous to the Issuing Office.

B. **Award.** Offerors whose proposals are not selected will be notified when contract negotiations have been successfully completed and the Issuing Office has received the final negotiated contract signed by the selected Offeror.

I-26. Debriefing Conferences. Upon notification of award, Offerors whose proposals were not selected will be given the opportunity to be debriefed. The Issuing Office will schedule the debriefing at a mutually agreeable time. The debriefing will not compare the Offeror with other Offerors, other than the position of the Offeror's proposal in relation to all other Offeror proposals. An Offeror's exercise of the opportunity to be debriefed does not constitute nor toll the time for filing a protest (See **Section I-27** of this RFP).

I-27. RFP Protest Procedure. The RFP Protest Procedure is on the DGS website at http://www.dgsweb.state.pa.us/comod/ProtestProcedures.doc. A protest by a party not submitting a proposal must be filed within **seven (7)** days after the protesting party knew or should have known of the facts giving rise to the protest, but no later than the proposal submission deadline specified in the Calendar of Events of the RFP. Offerors may file a protest within **seven** days after the protesting Offeror knew or should have known of the facts giving rise to the protest, but in no event may an Offeror file a protest later than **seven (7)** days after the date the notice of award of the contract is posted on the DGS website. The date of filing is the date of receipt of the protest. A protest must be filed in writing with the Issuing Office. To be timely, the protest must be received by 4:00 p.m. on the seventh day.

I-28. Use of Electronic Versions of this RFP. This RFP is being made available by electronic means. If an Offeror electronically accepts the RFP, the Offeror acknowledges and accepts full responsibility to insure that no changes are made to the RFP. In the event of a conflict between a version of the RFP in the Offeror's possession and the Issuing Office's version of the RFP, the Issuing Office's version shall govern.

I-29. Information Technology Policies.

This RFP is subject to the Information Technology Policies (ITP's) (formerly known as Information Technology Bulletins) issued by the Office of Administration, Office for Information Technology (OA-OIT). ITP's may be found at http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=210791&mode=2

All proposals must be submitted on the basis that all ITPs are applicable to this procurement.   It is the responsibility of the Offeror to read and be familiar with the ITPs. Notwithstanding the foregoing, if the Offeror believes that any ITP is not applicable to this procurement, it must list all such ITPs in its technical submittal, and explain why it believes the ITP is not applicable. The Issuing Office may, in its sole discretion, accept or reject any request that an ITP not be considered to be applicable to the procurement. The Offeror's failure to list an ITP will result in its waiving its right to do so later, unless the Issuing Office, in its sole discretion, determines that it would be in the best interest of the Commonwealth to waive the pertinent ITP.

PART II

PROPOSAL REQUIREMENTS

Offerors must submit their proposals in the format, including heading descriptions, outlined below. To be considered, the proposal must respond to all requirements in this part of the RFP. Offerors should provide any other information thought to be relevant, but not applicable to the enumerated categories, as an appendix to the proposal. All cost data relating to this proposal and all Small Diverse Business cost data should be kept separate from and not included in the Technical Submittal. Each proposal shall consist of the following **three (3) separately sealed** (each enclosed in a taped or glued envelop of appropriate size) submittals:

A. Technical Submittal, which shall be a response to RFP **Part II, Sections II-1 through II-8 and Section II-11;**

B. Small Diverse Business participation submittal, in response to RFP **Part II, Section II-9**; and

C. Cost Submittal, in response to RFP **Part II, Section II-10.**

The Issuing Office reserves the right to request additional information which, in the Issuing Office's opinion, is necessary to assure that the Offeror's competence, number of qualified employees, business organization, and financial resources are adequate to perform according to the RFP.

The Issuing Office may make investigations as deemed necessary to determine the ability of the Offeror to perform the Project, and the Offeror shall furnish to the Issuing Office all requested information and data. The Issuing Office reserves the right to reject any proposal if the evidence submitted by, or investigation of, such Offeror fails to satisfy the Issuing Office that such Offeror is properly qualified to carry out the obligations of the RFP and to complete the Project as specified.

II-1.   Statement of the Problem. State in succinct terms your understanding of the problem presented or the service required by this RFP.

II-2.   Management Summary. Include a narrative description of the proposed effort and a list of the items to be delivered or services to be provided.

II-3.   Work Plan. Describe in narrative form your technical plan for accomplishing the work. Use the task descriptions in **Part IV** of this RFP as your reference point. Modifications of the task descriptions are permitted, but must be clearly noted. Reasons for changes should be fully explained. Indicate the number of person hours allocated to each Task using a table format as in the following example:

Task 1 - Planning/Initiation *includes Deliverables:*	Role	Hours
Strategic assessment document; Updated detailed		

Project Plan; Acceptance Management Plan; Scope Change Management Plan; Organizational Change Mgmt. Plan; Communications Plan; Risk Management Strategy/Plan Document; Quality Management Plan; Testing Plan; User Training Strategy and Plan; Technical Knowledge Transfer Plan; Deployment Plan; Backup and Recovery Plan; Support Strategy Document; High level Transition Plan including an End of Warranty Transition Plan.		

Include a Program Evaluation and Review Technique Chart (PERT) or Gantt Chart, time related, showing each event. If more than one approach is apparent, comment on why you chose this approach.

II-4. Prior Experience. Include experience in Oracle Retail Merchandising System, (including replenishment), forecasting, and experience in WMS (Warehouse Management Systems), application maintenance, user support services, application customization and configuration activities, interface to existing application systems, Reports, Interfaces, Customizations, Extensions, Workflow (RICEW) objects, end user training, and maintaining data backups.

Provide written evidence and references from at least three (3) previous projects of a similar size and scope to that of this RFP that were completed by the Offeror. Also provide at least three (3) references for projects of a similar size and scope for each subcontractor the Offeror intends to use.

Experience shown should be work done by individuals who will be assigned to this Project as well as that of your company. Studies or projects referred to must be identified and the name of the customer shown, including the name, address, and telephone number of the responsible official of the customer, company, or agency who may be contacted. Also note any special expertise that would enhance your company's qualifications, such as membership in professional organizations and/or certifications. List any current contracts that may present a conflict of interest. If there are none, provide a statement to that effect.

II-5. Personnel. An organizational chart should be included with the number of executive and professional personnel, analysts, auditors, researchers, programmers, consultants, etc., who will be engaged in the work. For key personnel, including but not limited to Project Manager, Technical Lead, and Operations/Support Manager, include the employee's name and, through a resume or similar document, the Project personnel's education and experience in Oracle Retail Merchandising System, (including replenishment), forecasting, and experience in WMS (Warehouse Management Systems), application maintenance, user support services, application customization and configuration activities, interface to existing application systems, Reports, Interfaces, Customizations, Extensions, Workflow (RICEW) objects, end user training, and maintaining data backups. Indicate the responsibilities each individual will have in this Project and how long each has been with your company. Identify by name any subcontractors you intend to use and the services they will perform.

II-6.   Training. The PLCB considers the training of PLCB technical and support staff as well as key business users to be critical for acceptance of the System as well as the daily use of the System. The PLCB project team will review and approve all selected Offeror System training staff and user training materials, including training plans and role-based training materials.

A.   The PLCB project team training responsibilities include:

   1.   Review and approval of all role-based System Training schedules.

   2.   Review and approval of all selected Offeror training staff.

   3.   Review and approval of the overall System training plan.

   4.   Identify all PLCB staff to be trained during the implementation by role.

   5.   Review and approval of all selected Offeror-developed role-based System training materials.

   6.   Upgrade current Oracle IBMS Training Environment for use during training.

   7.   Coordinate training activities with the PLCB's Learning Management System as appropriate.

B.   The PLCB is seeking a "Train-the-Trainer" approach that will allow key PLCB staff to acquire the knowledge of the System necessary to be able to deliver End-user Training. Additionally, the selected Offeror shall provide technical training (knowledge transfer) for staff who will take over the administration of the System once in production.

C.   The selected Offeror's project team training responsibilities include:

   1.   Development of all role-based System Training schedules.

   2.   Update of Oracle UPK module for applicable changes as well as coordination of training activities within the PLCB's Learning Management System as appropriate.

   3.   Development of the overall System training plan and curriculum.

   4.   Provide Train the Trainer sessions(s).

   5.   Development of all role-based System training materials.

The table below presents estimates of the numbers of users that will need to receive in-depth training on the use or administration of the System.

PLCB Staff Training Estimates:

Participating PLCB	Personnel	Training Locations
Supply Chain Trainers	12	Harrisburg Area
OITS	25	Harrisburg Area

II-7.   Financial Capability.   Describe your company's financial stability and economic capability to perform the contract requirements. Provide your company's financial statements (audited, if available) for the past three (3) fiscal years. Financial statements must include the company's Balance Sheet and Income Statement or Profit/Loss Statements. Also include an Experian Business Credit Report or a Dun & Bradstreet Comprehensive Report, if available. If your company is a publicly traded company, please provide a link to your financial records on your company website in lieu of providing hardcopies. The PLCB reserves the right to request additional information it deems necessary to evaluate an Offeror's financial capability. As stated in **Section I-19(C),** this information is exempt from public disclosure.

II-8.   Objections and Additions to IT Contract Terms and Conditions and/or Special Contract Terms and Conditions (Appendices A and B). The Offeror will identify which, if any, of the terms and conditions (contained in **Appendices A and B**) it would like to negotiate and what additional terms and conditions the Offeror would like to add to the standard contract terms and conditions. The Offeror's failure to make a submission under this paragraph will result in its waiving its right to do so later, but the Issuing Office may consider late objections and requests for additions if to do so, in the Issuing Office's sole discretion, would be in the best interest of the PLCB.   The Issuing Office may, in its sole discretion, accept or reject any requested changes to the standard and/or special contract terms and conditions. The Offeror shall not request changes to the other provisions of the RFP, nor shall the Offeror request to completely substitute its own terms and conditions for **Appendices A and B**. All terms and conditions must appear in one integrated contract. The Issuing Office will not accept references to the Offeror's, or any other, online guides or online terms and conditions contained in any proposal.

Regardless of any objections set out in its proposal, the Offeror must submit its proposal, including the cost proposal, on the basis of the terms and conditions set out in **Appendices A and B**. The Issuing Office will reject any proposal that is conditioned on the negotiation of the terms and conditions set out in **Appendices A and B or to other provisions of the RFP as specifically identified above**.

II-9.   Small Diverse Business Participation Submittal.

   A. To receive credit for being a Small Diverse Business or for subcontracting with a Small Diverse Business (including purchasing supplies and/or services through a purchase

agreement), an Offeror must include proof of Small Diverse Business qualification in the Small Diverse Business participation submittal of the proposal, as indicated below:

A Small Diverse Business verified by BSBO as a Small Diverse Business must provide a photocopy of their verification letter.

B. In addition to the above verification letter, the Offeror must include in the Small Diverse Business participation submittal of the proposal the following information:

1. *All* Offerors must include a numerical percentage which represents the total percentage of the work (as a percentage of the total cost in the Cost Submittal) to be performed by the Offeror and not by subcontractors and suppliers.

2. *All* Offerors must include a numerical percentage which represents the total percentage of the total cost in the Cost Submittal that the Offeror commits to paying to Small Diverse Businesses (SDBs) as subcontractors. To support its total percentage SDB subcontractor commitment, Offeror must also include:

   a) The percentage and dollar amount of each subcontract commitment to a Small Diverse Business;
   b) The name of each Small Diverse Business. The Offeror will not receive credit for stating that after the contract is awarded it will find a Small Diverse Business.
   c) The services or supplies each Small Diverse Business will provide, including the timeframe for providing the services or supplies.
   d) The location where each Small Diverse Business will perform services.
   e) The timeframe for each Small Diverse Business to provide or deliver the goods or services.
   f) A subcontract or letter of intent signed by the Offeror and the Small Diverse Business (SDB) for each SDB identified in the SDB Submittal. The subcontract or letter of intent must identify the specific work, goods or services the SDB will perform, how the work, goods or services relates to the Project, and the specific timeframe during the term of the contract and any option/renewal periods when the work, goods or services will be performed or provided. In addition, the subcontract or letter of intent must identify the fixed percentage commitment and associated estimated dollar value that each SDB will receive based on the total value of the initial term of the contract as provided in the Offeror's Cost Submittal. Attached is a letter of intent template which may be used to satisfy these requirements **(Appendix J)**.
   g) The name, address and telephone number of the primary contact person for each Small Diverse Business.

3. The total percentages and each SDB subcontractor commitment will become contractual obligations once the contract is fully executed.

4. The name and telephone number of the Offeror's Project (contact) person for the Small Diverse Business information.

C. The Offeror is required to submit **two (2)** copies of its Small Diverse Business participation submittal. The submittal shall be clearly identified as Small Diverse Business information and sealed in its own envelope, separate from the remainder of the proposal.

D. A Small Diverse Business can be included as a subcontractor with as many prime contractors as it chooses in separate proposals.

E. An Offeror that qualifies as a Small Diverse Business and submits a proposal as a prime contractor is not prohibited from being included as a subcontractor in separate proposals submitted by other Offerors.

II-10. **Cost Submittal.** The information requested in this **Part II, Section II-10** shall constitute the Cost Submittal **(Appendix F)**. **The Cost Submittal shall be placed in a separate sealed envelope** within the sealed proposal, separated from the Technical Submittal. Offerors should **not** include any assumptions in their cost submittals. If the Offeror includes assumptions in its cost submittal, the Issuing Office may reject the proposal. Offerors should direct in writing to the Issuing Office pursuant to **Part I, Section I-9**, of this RFP any questions about whether a cost or other component is included or applies. All Offerors will then have the benefit of the Issuing Office's written answer so that all proposals are submitted on the same basis.

Payments will be made after the completion of each Task 1-8 and the acceptance by the PLCB Project Manager of all Deliverables associated with each Task 1-8 as identified in **Part IV, Section IV-4**, less ten percent (10%) hold back. Payment of the hold back will be made after successful completion of all Activities listed in **Task9, Warranty Support.**

For purposes of clarity, payments, less 10% hold back, will be made upon successful completion and the PLCB Project Manager's approval of:

Task 1 - Planning/Initiation, less the 10% hold back.
Task 2 - Gather and Document Detail Requirements, less the 10% hold back.
Task 3 - Design, less the 10% hold back.
Task 4 - Build and Unit Testing, less the 10% hold back.
Task 5 - Integration and Regression Testing, less the 10% hold back.
Task 6 - User Acceptance Testing, less the 10% hold back.
Task 7 - Implementation, less the 10% hold back.
Task 8 - End of Purchase Order Transition.
Task 9 - Warranty Support: The selected Offeror will provide ninety (90) days of post go-live warranty support at no cost to the PLCB. All hold back funds will be released upon completion and approval of this task.

The Issuing Office will reimburse the selected Offeror for work satisfactorily performed after execution of a written contract and the start of the contract term, in accordance with contract requirements, and only after the Issuing Office has issued a notice to proceed.

II-11. Domestic Workforce Utilization Certification. Complete and sign the Domestic Workforce Utilization Certification contained in **Appendix E** of this RFP. Offerors who seek consideration for this criterion must submit in hardcopy the signed Domestic Workforce Utilization Certification Form **in the same sealed envelope with the Technical Submittal**.

III-1. Mandatory Responsiveness Requirements. To be eligible for selection, a proposal must be:

A. Timely received by the Issuing Office;

B. Properly signed by the Offeror. For guidance on proper signatory protocol in Pennsylvania procurements, please go to: http://www.portal.state.pa.us/portal/server.pt/document/642846/pt_i_ch_31_contract_sig natures_pdf. **Appendix H,** Corporate Signatory Delegation Authorization should be used if a resolution exists to grant signature authorization to the person signing the proposal.

III-2. Technical Nonconforming Proposals. The two (2) Mandatory Responsiveness Requirements set forth in **Section III-1 (A-B)** above are the only RFP requirements that the PLCB will consider to be *non-waivable.* The Issuing Office reserves the right, in its sole discretion, to: (1) waive any other technical or immaterial nonconformities in an Offeror's proposal, (2) allow the Offeror to cure the nonconformity, or (3) consider the nonconformity in the scoring of the Offeror's proposal.

III-3. Evaluation. The Issuing Office has selected a committee of qualified personnel to review and evaluate timely submitted proposals. Independent of the committee, BSBO will evaluate the Small Diverse Business participation submittal and provide the Issuing Office with a rating for this component of each proposal. The Issuing Office will notify in writing of its selection for negotiation the responsible Offeror whose proposal is determined to be the most advantageous to the PLCB as determined by the Issuing Office after taking into consideration all of the evaluation factors.

III-4. Evaluation Criteria. Except as specifically requested in Part II-7 of this RFP as it relates to corporate financial records, references to outside information, such as links to websites contained in any submittal will not be accessed or included in the evaluation process. The following criteria will be used in evaluating each proposal:

A. **Technical:** The Issuing Office has established the weight for the Technical criterion for this RFP as **fifty percent 50%** of the total points. Evaluation will be based upon the following in order of importance:

1. **Understanding of the Problem and Soundness of Approach** refers to, but is not limited to, the Offeror's accurate assessment of the PLCB's objectives in seeking the services and the Offeror's methodology to meet the requirements of this RFP, e.g..: How does the Offeror propose to efficiently manage and perform the requested services for each critical element detailed in the Work Statement, Part IV.

2. **Personnel Qualifications** refers to, but is not limited to the proposed personnel's experience in the Tasks identified in **Part IV.**

3. **Offeror Qualifications** refers to, but is not limited to, a measurement of the Offeror's experience in improving the efficiency and responsiveness of, and reducing costs associated with, Supply Chain systems and processes and identifying and implementing enhancements to supply chain systems and warehouse interfaces. Also, the Offeror's financial responsibility is evaluated.

The final Technical scores are determined by giving the maximum number of technical points available to the proposal with the highest raw technical score. The remaining proposals are rated by applying the Technical Scoring Formula set forth at the following webpage: http://www.portal.state.pa.us/portal/server.pt/community/rfp_scoring_formulas_overview/20 124.

B. **Cost:** The Issuing Office has established the weight for the Cost criterion for this RFP as **thirty percent (30%)** of the total points. The cost criterion is rated by giving the proposal with the lowest total cost the maximum number of Cost points available. The remaining proposals are rated by applying the Cost Formula set forth at the following webpage: http://www.portal.state.pa.us/portal/server.pt/community/rfp_scoring_formulas_overview/20 124

C. **Small Diverse Business Participation:** BSBO has established the weight for the Small Diverse Business (SDB) participation criterion for this RFP as **twenty percent (20%)** of the total points. Each SDB participation submittal will be rated for its approach to enhancing the utilization of SDBs in accordance with the below-listed priority ranking and subject to the following requirements:

1. A business submitting a proposal as a prime contractor must perform sixty percent (60%) of the total contract value to receive points for this criterion under any priority ranking.

2. To receive credit for an SDB subcontracting commitment, the SDB subcontractor must perform at least fifty percent (50%) of the work subcontracted to it.

3. A significant subcontracting commitment is a minimum of five percent (5%) of the total contract value.

4. A subcontracting commitment less than five percent (5%) of the total contract value is considered nominal and will receive reduced or no additional SDB points depending on the priority ranking.

Priority Rank 1: Proposals submitted by SDBs as prime Offerors will receive 150 points. In addition, SDB prime Offerors that have significant subcontracting

commitments to additional SDBs may receive up to an additional 50 points (200 points total available).

Subcontracting commitments to additional SDBs are evaluated based on the proposal offering the highest total percentage SDB subcontracting commitment. All other Offerors will be scored in proportion to the highest total percentage SDB subcontracting commitment within this ranking. *See formula below.*

Priority Rank 2: Proposals submitted by SDBs as prime contractors, with no or nominal subcontracting commitments to additional SDBs, will receive 150 points.

Priority Rank 3: Proposals submitted by non-small diverse businesses as prime contractors, with significant subcontracting commitments to SDBs, will receive up to 100 points. Proposals submitted with nominal subcontracting commitments to SDBs will receive points equal to the percentage level of their total SDB subcontracting commitment.

SDB subcontracting commitments are evaluated based on the proposal offering the highest total percentage SDB subcontracting commitment. All other Offerors will be scored in proportion to the highest total percentage SDB subcontracting commitment within this ranking. *See formula below.*

Priority Rank 4: Proposals by non-small diverse businesses as prime contractors with no SDB subcontracting commitments shall receive no points under this criterion.

To the extent that there are multiple SDB Participation submittals in Priority Rank 1 and/or Priority Rank 3 that offer significant subcontracting commitments to SDBs, the proposal offering the highest total percentage SDB subcontracting commitment shall receive the highest score (or additional points) available in that Priority Rank category and the other proposal(s) in that category shall be scored in proportion to the highest total percentage SDB subcontracting commitment. Proportional scoring is determined by applying the following formula:

SDB % Being Scored   x   *Points/Additional* = *Awarded/Additional*
Highest % SDB Commitment   *Points Available**   *SDB Points*

Priority Rank 1 = 50 Additional Points Available
Priority Rank 3 = 100 Total Points Available

Please refer to the following webpage for an illustrative chart which shows SDB scoring based on a hypothetical situation in which the Commonwealth receives proposals for each Priority Rank:
http://www.portal.state.pa.us/portal/server.pt/community/rfp_scoring_formulas_overview/20124

D. **Domestic Workforce Utilization:**   Any points received for the Domestic Workforce Utilization criterion are bonus points in addition to the total points for this RFP.   The maximum amount of bonus points available for this criterion is **three percent (3%)** of the total points for this RFP.

To the extent permitted by the laws and treaties of the United States, each proposal will be scored for its commitment to use domestic workforce in the fulfillment of the contract. Maximum consideration will be given to those Offerors who will perform the contracted direct labor exclusively within the geographical boundaries of the United States or within the geographical boundaries of a country that is a party to the World Trade Organization Government Procurement Agreement.   Those who propose to perform a portion of the direct labor outside of the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement will receive a correspondingly smaller score for this criterion.   See the following webpage for the Domestic Workforce Utilization Formula:

http://www.portal.state.pa.us/portal/server.pt/community/rfp_scoring_formulas_overview /20124.   Offerors who seek consideration for this criterion must submit in hardcopy the signed Domestic Workforce Utilization Certification Form in the **same sealed envelope with the Technical Submittal**. The certification will be included as a contractual obligation when the contract is executed.

III-5. Offeror Responsibility.   To be responsible, an Offeror must submit a responsive proposal and possess the capability to fully perform the contract requirements in all respects and the integrity and reliability to assure good faith performance of the contract.

In order for an Offeror to be considered responsible for this RFP and therefore eligible for selection for best and final offers or selection for contract negotiations:

A. The total score for the technical submittal of the Offeror's proposal must be greater than or equal to **seventy percent (70%)** of the **available technical points**; and

B. The Offeror's financial information must demonstrate that the Offeror possesses the financial capability to assure good faith performance of the contract.   The Issuing Office will review the Offeror's previous three (3) financial statements, any additional information received from the Offeror, and any other publicly-available financial information concerning the Offeror, and assess each Offeror's financial capacity based on calculating and analyzing various financial ratios, and comparison with industry standards and trends.

An Offeror which fails to demonstrate sufficient financial capability to assure good faith performance of the contract as specified herein may be considered by the Issuing Office, in its sole discretion, for Best and Final Offers or contract negotiation contingent upon such Offeror providing contract performance security for the first contract year cost proposed by the Offeror in a form acceptable to the Issuing Office.   Based on the financial condition of the Offeror, the Issuing Office may require a certified or bank (cashier's) check, letter of credit, or a performance

bond conditioned upon the faithful performance of the contract by the Offeror. The required performance security must be issued or executed by a bank or surety company authorized to do business in the Commonwealth. The cost of the required performance security will be the sole responsibility of the Offeror and cannot increase the Offeror's cost proposal or the contract cost to the Commonwealth.

Further, the Issuing Office will award a contract only to an Offeror determined to be responsible in accordance with the most current version of Commonwealth Management Directive 215.9, Contractor Responsibility Program.

III-6. Final Ranking and Award.

A. After any Best and Final Offer process conducted, the Issuing Office will combine the evaluation committee's final technical scores, BSBO's final small diverse business participation scores, the final cost scores, and (when applicable) the Domestic Workforce Utilization scores, in accordance with the relative weights assigned to these areas as set forth in this Part.

B. The Issuing Office will rank responsible Offerors according to the total overall score assigned to each, in descending order.

C. The Issuing Office must select for contract negotiations the Offeror with the highest overall score; PROVIDED, HOWEVER, THAT AN AWARD WILL NOT BE MADE TO AN OFFEROR WHOSE PROPOSAL RECEIVED THE LOWEST TECHNICAL SCORE AND HAD THE LOWEST COST SCORE OF THE RESPONSIVE PROPOSALS RECEIVED FROM RESPONSIBLE OFFERORS. IN THE EVENT SUCH A PROPOSAL ACHIEVES THE HIGHEST OVERALL SCORE, IT SHALL BE ELIMINATED FROM CONSIDERATION AND AWARD SHALL BE MADE TO THE OFFEROR WITH THE NEXT HIGHEST OVERALL SCORE.

D. The Issuing Office has the discretion to reject all proposals or cancel the request for proposals, at any time prior to the time a contract is fully executed, when it is in the best interests of the Commonwealth. The reasons for the rejection or cancellation shall be made part of the contract file.

PART IV

WORK STATEMENT

IV-1. Objectives

A. General. The PLCB is a multi-faceted agency responsible for the sale and control of beverage alcohol throughout the Commonwealth of Pennsylvania and is one of the largest purchasers of wine and spirits in the country. The PLCB operates over six hundred (600) retail outlets and one e-commerce site, www.finewineandgoodspirits.com, to serve Pennsylvania consumers.

The purpose of this RFP is to select an Offeror that will provide innovative and fresh approaches to enhance and maintain the data systems that underpin the PLCB's Supply Chain processes and reduce costs associated with those processes. The primary objective of this RFP is to improve the efficiency and responsiveness of, and reduce costs associated with, the PLCB's Supply Chain systems and processes. The Supply Chain data systems are mission critical to the PLCB's two billion dollar a year retail business.

B. Specific

Proposals should demonstrate not only a comprehensive understanding of the commercial off-the shelf (COTS) system and the technologies used for custom code, but also novel and inventive approaches that recognize emerging technology while remaining responsive enough to take timely action on changes (hotfixes and patch sets) provided by Oracle.

The retail operations portion of PLCB's application portfolio consists of the following major areas:

- Retail Merchandizing System (RMS), Retail Sales Audit (ReSA), Retail Pricing Module (RPM), Retail Invoice Matching (ReIM), Allocations
- Store Inventory Management (SIM)
- Retail Integration Bus (RIB)
- BPEL (Service Oriented Architecture suite)
- Retail Data Warehouse
- Retail Demand Forecasting (RDF)
- Product Data Quality (PDQ)
- Automic Software Inc.'s (formerly known as UC4) Appworx (job scheduling)
- Robocom RIMS Warehouse Management System

The complete list of applications is found in **Appendix O** - Retail Operations Applications at-a-glance. The PLCB plans to implement a series of enhancements to these applications.

Additionally the changes may impact the PLCB financials in the EBS module.   See **Appendix P**, IBMS and POS Software Versions.

The planned enhancements are divided into two major categories:

- Supply Chain - Enhancements to improve the efficiency, responsiveness and cost effectiveness of the PLCB's supply chain.

- RIMS Warehouse Management System (WMS) – RIMS is a proprietary WMS. All changes to the RIMS system to accommodate the changes outlined in this RFP will be done by RIMS proprietary vendors. However, the selected Offeror is required to make all changes to existing interfaces with RIMS that are needed to implement the changes as outlined in this RFP. See **Appendix JJ**, RIMS Interface Drawing and **Appendix KK**, RIMS Interface Descriptions.

IV-2. Nature and Scope of the Project

In order to accomplish this project, the PLCB expects the selected Offeror to:
- Identify and implement enhancements to PLCB's supply chain systems and to the warehouse interfaces.

- Maintain current and continuously updated documentation in a common, centralized SharePoint location to provide effective knowledge transfer and continuity

Each aspect of the project has specific deliverables.

For operational maintenance and support, performance to prescribed service levels for system processes, operations and roles shall serve as the measurement for the services.

This project includes all of the tasks and deliverables as detailed in section IV-4, Tasks**.** In addition to the specific deliverables detailed in section IV-4, the successful Offeror shall be required to produce and maintain the documents and reports as detailed in section IV-5, Reports and Project Control.

IV-3. Requirements

A. With Submission of the Technical Proposal. As part of the RFP technical proposal submission package, Offerors will submit:

1. A high level project strategy which will include a high level support strategy for maintaining user effectiveness during the Go-Live and warranty support periods and which will demonstrate the approach Offerors will take to this project and how they expect to accomplish each task.

   The tasks listed and described in IV-4, Tasks 1-9 comprise the anticipated high level tasks and expected deliverables to be completed by the selected Offeror.

2. A high level project plan which will demonstrate the approach Offerors will take to this project and how they expect to accomplish each task.

The project plan should include a work plan for each task that identifies the work elements of the task, the resources that will be assigned to the task, the time allotted to each element and the deliverable items to be produced. Where appropriate, a PERT or Gantt chart display should be used to show project, task, and time relationship.

Note that the PLCB's peak selling period is November1 through December 31 of every year, during which time, access to operational systems and staff resources are of limited availability.

3. A high level Responsibility Assignment Matrix (RAM), also known as a RACI (Responsible, Accountable, Consulted, and Informed) matrix, that will ensure clear project roles and responsibilities during this project. The Responsibility Assignment Matrix will define, for each task detailed in this RFP, which roles at the organizational level have the responsible, accountable, consulted and informed roles, i.e., between the selected Offeror and PLCB. The four key responsibility components of the Responsibility Assignment Matrix used in PLCB matrices are defined as follows:

   a. **Responsible** - Those individuals who perform work to complete a task and associated deliverables. For purposes of this RFP, the selected Offeror will be the Responsible party.

   b. **Accountable** - Those individual(s) who approve the completion of the task and associated deliverables and the one to whom the Responsible parties are accountable. For purposes of this Project, Accountable will be the PLCB Project Manager who must sign off / approve the work that Responsible (the selected Offeror) provides. There must be only one Accountable specified for each task or deliverable.

   c. **Consulted** - Those individuals whose opinions are sought and with whom there is two-way communication. For purposes of this Project, the Consulted Role(s) will be designated PLCB agent(s) who will be determined during the Planning/Initiation phase of the project (Task 1: Planning/Initiation).

   d. **Informed** - Those who are kept up-to-date on progress, often only on completion of the task or deliverable, and with whom there is primarily one-way communication. For purposes of this Project, the Informed Role(s) may include the PLCB Project Sponsor, the PLCB Steering Committee, the Chief Information Officer (CIO) and others as determined.

B. For the Project

1. The selected Offeror will be responsible for making changes to and maintaining the PLCB's library of technical, configuration, migration, and security set up documents, test scripts and training material, as needed, and creating new documents when necessary, to reflect all changes made to existing processes as part of this Project. These changes require formal PLCB approval.

2. Successful completion of each task will be defined by the completion of each project task and associated deliverables on or before specific, agreed dates or milestones and by obtaining sign-off approval from the PLCB for each deliverable.

3. The selected Offeror will be responsible for ensuring that all information, e.g., test scripts and system documentation models, reside on PLCB's SharePoint system.

4. The selected Offeror will follow all PLCB standards and policies located in **Appendix AA, Appendix K,** and **Appendices Q through BB** to this RFP.

5. The selected Offeror will identify options to address Gaps between current functionality and new functionality, assess potential options, and document the positive and negative consequences of each, including their associated risks, compliance with state requirements, and additional relative costs.

6. The selected Offeror will be responsible for ensuring that all services conform to all compliance requirements needed to maintain PLCB Payment Card Industry (PCI) compliance. Please see the PCI compliance requirements found here: https://www.pcisecuritystandards.org/security_standards/pci_dss_supporting_docs.shtml.

7. The selected Offeror shall work with the PLCB to refine and deliver an acceptance management plan for the review and approval by the PLCB of all project Deliverables including document-based and software-based Deliverables. All project Deliverables must be approved and signed off by the selected Offeror before submission to PLCB for approval.

C. Offeror Personnel

1. The PLCB must approve or disapprove all planned bid/proposed staffing substitutions and changes. Once the personnel are assigned to this Project, the selected Offeror must not re-assign personnel to another project without written consent from the PLCB.

2. The selected Offeror shall maintain and provide to the PLCB an up-to-date organization chart and contact list (including subcontractors) providing name, title, phone, pager/cell phone, role on project, project areas of expertise, job responsibility statements, and email information to PLCB Project Manager for all personnel assigned to the project whenever selected Offeror personnel assignments change.

In order to provide the best knowledge transfer to PLCB staff, and to have the most availability of PLCB subject matter experts, selected Offeror staff are expected to be on-site at an office provided by the PLCB during PLCB working hours. For purposes of clarity, minimum working hours are expected to be from 8:00 a.m. through 5:00 p.m., Monday through Friday inclusive, time to be primarily spent at the Northwest Office Building location unless otherwise agreed in advance by the PLCB.

3. A resume for any planned key or lead staffing substitutions must be submitted to the PLCB's Project Managers forty-five (45) business days prior to the substituted or replaced staff starting work. Resumes for substitutions for all other selected Offeror personnel must be submitted to the PLCB's Project Managers at least twenty (20) business days prior to the substituted or replaced staff starting work. The PLCB must not incur any Project delays due to knowledge transfer to new selected Offeror or subcontractor personnel resulting from staffing substitutions or replacement.

4. The PLCB Project Manager has the right to require replacement of personnel if dissatisfied with their performance.

D. Subcontractors. Although use of subcontractors is allowable, the prime selected Offeror is wholly responsible for the performance of any subcontractor. Any use of subcontractors by the selected Offeror must be identified in the proposal. The selected Offeror must not transfer or subcontract any portion of the work covered by these specifications without prior written consent of the PLCB Project Manager(s).

E. Emergency Preparedness. To support continuity of operations during an emergency, including but not limited to a pandemic, the Commonwealth needs a strategy for maintaining operations for an extended period of time. One part of this strategy is to ensure that essential contracts that provide critical business services to the Commonwealth have planned for such an emergency and put contingencies in place to provide needed goods and services.

1. Describe how you anticipate such a crisis will impact your operations.

2. Describe your emergency response continuity of operations plan. Attach a copy of your plan, or at a minimum, summarize how your plan addresses the following aspects of preparedness:

   a) Employee training (describe your organization's training plan, and how frequently your plan will be shared with employees).

   b) Essential business functions and the key employees (within your organization) necessary to carry them out.

   c) Contingency plans for:

i. Temporary interruption of normal business operations (e.g., electrical power outages).

ii. Temporary interruption of information technology operations.

iii. Staffing when a portion of key employees are incapacitated due to illness.

iv. Several months' disruption of normal business operations due to a catastrophic event (e.g., fire, tornado).

v. How employees in your organization will carry out the essential functions if contagion control measures or other environmental issues prevent them from coming to the primary workplace.

d) How your organization will communicate with staff and suppliers when primary communications systems are overloaded or otherwise fail, including key contacts, chain of communications (including suppliers).

e) How various crises (e.g., natural disasters, weather conditions, labor strikes, etc.) would be managed to reduce the impact on operations.

f) How and when your emergency plan will be tested, and if the plan will be tested by a third-party.

F. **Defect Service Level Objectives.** The following table lists the PLCB's Defect Service Level Objectives expected from the selected Offeror during the warranty support period. These Service Levels indicate the level of response and resources the PLCB expects for all defects or issues during the Warranty Support period described in Task 9. The selected Offeror should propose adequate resources to meet the expected Service Levels during the warranty period.

Defect Severity	Maximum Response Time	Resources Applied	Hours and Days of Coverage
Critical	2 hours	Selected Offeror will provide resources to fix until completed.	24 hrs./day; 7 days/wk.
High	4 hours	Selected Offeror will provide resources to fix until completed.	8:00 a.m. to 8:00 p.m. ET weekdays
Medium	2 business days	Selected Offeror and PLCB will agree to resources applied.	8:00 a.m. to 6:00 p.m. ET weekdays
Low	5 business	Selected Offeror and	8:00 a.m. to 6:00 p.m.

Defect Severity	Maximum Response Time	Resources Applied	Hours and Days of Coverage
	days	PLCB will agree to resources applied.	ET weekdays

1. A Critical Defect is a problem in which its nature and/or severity prevents the PLCB from continuing its business. A Critical Defect may have one or more of the following characteristics: (a) a critical function of the Application/Device is not available; (b) the Application/Device hangs indefinitely and/or causes other PLCB applications to hang; (c) the Application/Device crashes and/or causes other PLCB applications to crash; and/or (d) a security incident has occurred or is suspected to have occurred. (e) interfaces functions (f) incomplete sales transactions (not all tasks completing during sale, e.g. Printing, Oracle Retail Sales Audit (ReSA))

2. A High Defect may have one or more of the following characteristics: (a) the performance, functionality or usability of one or more of the Application/Device's parts is severely degraded; (b) multiple users are impacted; and/or (c) one or more business functions are unavailable or unusable by the end users.

3. A Medium Defect is a failure of a system or part thereof which has a minor impact on a PLCB business process, can be handled on a non-immediate basis, and for which a work-around is available. Examples may include user requests (e.g., a report is not formatted correctly) and peripheral problems (e.g., output fails to print properly to office printer).

4. A Low Defect is a failure of a system or part thereof which has a nominal impact on a PLCB business process and can be handled on a non-immediate basis.

    The selected Offeror will not close a Defect. When the fix has demonstrated it has either: (a) repaired the functionality, performance and usability of the Application/Device to its pre-Defect level or (b) improved the functionality, performance and usability of the Application/Device from its pre-Defect level. Only PLCB Staff will close the defect.

    Unless, for a particular defect, the PLCB has provided prior written approval for different response times, the selected Offeror shall, for each calendar month and for each Severity Level, respond to one hundred percent (100%) of reported Defects within the Maximum Response Time during Hours and Days of Coverage agreed upon for each level of defect. (See **Appendix EE**, Defect Tracker)

G. Collaboration and Transitions. The PLCB may engage other contractors for specific medium to large scale projects to add or change existing functionality within the Oracle systems. Those projects typically include a plan under which the knowledge,

documentation, code, etc. required to support the new or changed functionality is transitioned to the PLCB's support teams.

Within thirty (30) days of contract award, when directed by the PLCB Office of Technology Services (OITS) Project Manager, selected Offeror will work with the PLCB and its existing support contractors to develop and implement a smooth knowledge transition work plan.

The selected Offeror shall create a plan for performing knowledge and responsibility transfer to any other contractors and/or PLCB staff and shall perform knowledge transfer sessions with any other contractors and/or PLCB staff. The selected Offeror shall continue to provide knowledge transfer and system support for the duration of the transition period as directed by the PLCB. This includes participating in knowledge transfers sessions, turnover of documentation, user accounts, etc., to accomplish an orderly transition without disruption of service to users. At the end of the transition period, selected Offerors must prepare a report that documents the completion of the transition activities and provides the status of each activity that occurred during the transition period. At the end of the contract period, selected Offeror shall work with the PLCB and any subsequent support contractors to ensure a smooth transition.

IV-4. Tasks

The tasks listed and described in the sections below comprise the anticipated high level tasks and expected deliverables to be completed by the selected Offeror.

All project deliverables must be approved by the PLCB and considered complete before an invoice may be submitted for payment.

The PLCB foresees this Project consisting of the following tasks:

1. Planning/Initiation
2. Gather and Document Detail Requirements
3. Design
4. Build and Unit Testing
5. Integration and Regression Testing
6. User Acceptance Testing
7. Implementation
8. End of Purchase Order Transition
9. Warranty Support

Deliverables identified within this section represent the minimum requirements that must be met.

The PLCB's User Acceptance Criteria for all Deliverables identified under Section IV-4 of this RFP is that there will be no "Critical" or "High" importance issues outstanding, as determined by the PLCB, for PLCB to accept a Deliverable. This is the criteria also used to determine when to move on to next Task of the project.

PLCB's User Acceptance is based on the following Criteria:

Status	
Critical	Production system down, legal requirement or policy compliance, or severely impacted database or end user performance
High	Severe revenue impact, employee productivity is affected, customer satisfaction is adversely affected
Medium	Moderate business impact with work-around
Low	All other issues

The selected Offeror will be responsible for performance of the Tasks. A high degree of cooperation and a willingness to work with and involve the PLCB Project Manager and team members throughout the execution of the Project is required.

The selected Offeror shall identify specific needs for information, materials, and decisions with the PLCB prior to the start of each activity of proposed work and submit such request to the PLCB Project Manager in writing.

Supply Chain Enhancements. Desired enhancements can be divided into seven (7) intertwined initiatives as identified here.

The selected Offeror will plan/initiate, design, build/unit test, perform integration and regression testing, conduct user acceptance testing, implement, warrant, and transition system changes to the PLCB at contract expiration. The initiatives are interrelated and need to be considered together when planning, designing, developing, testing and implementing.

Below is a high level listing of the required enhancements. However, one of the first tasks the selected Offeror will be expected to complete is to schedule Joint Application Development (JAD) sessions with Subject Matter Experts (SMEs) to expand upon and gather specific details of the requirements for all initiatives. The PLCB requires that the selected Offeror use the JAD process.

1. **Use of Stock Keeping Unit (SKU) Definition and Shipping Container Code (SCC).**

   This initiative provides for the alignment of the setup and definition of an item/SKU across the Warehouse Management System (WMS) and Oracle Host Systems. Two transaction item codes are maintained in Oracle (Shipping Container Code and PLCB Code) currently to support the existing definition of an item in the WMS at the SCC level. The relationship can be one PLCB Code to multiple SCC codes. Any impact to item code is inherently a cross functional project with broad impacts.

   This initiative consists of multiple parts:

a) Development of business rules/criterion for when a new PLCB item code is utilized, for instance will a product with special Holiday packaging be assigned a new PLCB item code.

b) The actual conversion to the new item code process and new SCC structure across all systems & RICEW (Reports; Interfaces; Conversions; Enhancements; Workflows) objects.

c) PLCB will change to cases as the primary unit of measure in the RIMS WMS system instead of units. However, units will remain the primary unit of measure in the IBMS system. Selected Offeror must update the RIMS interfaces from IBMS to support this change.

d) With current functionality, some shipments to stores can result in receipts that are processed against the incorrect SCC, resulting in inventory discrepancies between RMS and RIMS. When the system mismatches the store received SCC against the warehouse shipped SCC, significant time is required to identify the cause of the problem and to process the transactions that are required to fix the error.

Modify the functionality to prevent the error where the SCC is chosen against the wrong PLCB code, regardless of the actual SCC that was reported as being shipped by the Distribution Center (DC). Change the SIM to RMS interfaces so that when the PLCB code received at a store is translated to its related SCC, the SCC used is the one reported as being shipped by the DC instead of the receipt priority SCC.

See **Appendix CC** for additional details on how SCC is used across the PLCB.

2. **Order and Shipment Types**

The Distribution Centers (DCs) utilize the Robocom Inventory Management System ("RIMS"), a proprietary system licensed and hosted by the PLCB. The PLCB currently utilizes three (3) DCs for the receipt, processing, and storage of PLCB merchandise. Each DC is currently operated by a different logistics service provider ("Contractor"):

- DC #1 is owned by the Commonwealth and is operated by XTL, Inc. ("XTL") in Philadelphia;

- DC #2 is owned or leased and operated by Kane is Able ("Kane") in Scranton; and

- DC #4 is owned or leased and operated by General Commodities Company, Inc. ("Genco ATC") in Pittsburgh;

This order and shipment type initiative provides for leveraging base Oracle RMS functionality along with Robocom WMS functionality to handle multiple order/shipment types and related, unique functionalities for each (replenishment, allocation, manual, emergency, licensee, returns, etc.). It allows multiple and different order types to ship together as a combined shipment to a destination from the warehouse.

Currently, multiple orders for the same destination and same delivery date are "combined" into a single order for the WMS. These aggregated orders are picked/shipped by the DCs. This initiative would segregate/create multiple orders for each order type so it would not be viewed as a single order and would allow multiple orders of the same type on the same day as the individual orders.

This initiative also updates inbound Advance Shipment Notices (ASN) functionality to support usage for all purchase order types. It is currently only supported for Consolidation and Bailment/Vendor Managed Inventory (VMI). Bailment was implemented by the PLCB in 2012. In this program, vendors control the movement of their regular stocked products into the PLCB DCs and subsequently control the DCs' inventory levels for that material. Also as part of the Bailment initiative, the vendors maintain title to their merchandise until the product is ship-confirmed.

Additionally PLCB requires leverage of base Oracle and Robocom WMS functionality to handle related, unique functionalities for each related process (replenishment, allocation, manual, emergency, licensee, returns, etc.). This initiative also includes:

a) Update inbound ASN Portal functionality to support usage for all purchase order types, which are currently only supported for consolidation and bailment/VMI.

b) Modify Return To Vendor (RTV) shipments to allow for multiple shipments on a single day.

c) Change RICEW objects in relation to eliminating the use of WMS Private Account functionality in the processing of RTV shipments.

d) Define and configure additional product hold categories in RMS to align with those used in the WMS.

e) Define process for handling returns from customers and stores to DCs using Oracle functionality to generate Return to Warehouse (RTW) documents and shipments.

f) Configure outbound ASN functionality to use pallet-based shipment detail, including the use of pallet license plates (TINS) and pallet content labeling.

IBMS must be configured to preserve this information to the final shipping destination, store or customer.

3. **Vendor Collaboration Portal (VCP) Changes**

The Vendor Collaboration Portal (VCP) Change initiative is a series of enhancements/modifications to the existing VCP functionality across multiple tabs/functions including the addition of new data fields coming over from the IBMS RMS application. These modifications include, but are not limited to the following:

a. Change from Oracle OAF framework to Oracle ADF framework

b. Returns tab
   i. Add the ability to change/cancel RTV shipments
   ii. Default the "Not Ship After Date" to the "Pickup Date"
   iii. Change the format of the RTV number to match RTV number seen in the WMS
   iv. Modify RTV to allow visibility to the inventory, and a limited ability to view past returns.

c. Receipt Tab
   i. Show receipt info for both bailment and PO shipments.
   ii. Improve search capability
   iii. Allow download of receipt data in CSV format

d. Shipments tab
   i. Add the ability for all vendors to input ASNs
   ii. Improve search capability ((by code, and other criteria that do not exist presently)
   iii. Add the ability to export a filtered list of ASNs to a CSV file
   iv. Add the ability to show expected receipt (ASN) details
   v. Add the ability to show actual receipt activity
   vi. Add the ability to show receipt exceptions (damages, quantity discrepancies, etc.)
   vii. Add Standard Carrier Alpha Code (SCAC) to ASN information
   viii. Default the "Not Ship After Date" to arrival date
   ix. Add ability for user to cancel ASNs
   x. Add additional fields, including Date Received, Quantity Received, and a Receipt Exception designation for damages, shortages, etc., and update any affected RICEW objects.
   xi. Capture expected receipt data and be able to report late receipt activity
   xii. Highlight expected receipt dates that are delayed, or in the past

e. Purchase (PO) tab
  i. Add case cost to exported PO formats (PDF, CSV)
  ii. Add the ability to print multiple POs at one time and the ability to search across POs by SKU
  iii. Add case cost to PO
  iv. Change default sort view to show most recent PO at top of list
  v. Show opened PO as visited links during a session

f. Planning tab: Add multiple, established attributes in the host system to existing item data with ability to sort/filter
  i. Prevent inactive items from appearing on planning tab
  ii. Add Velocity codes and Qualifier Codes

g. All tabs
  i. Navigate between tabs without having to enter vendor number each time. This allows users to go back and forth without 'losing' data on other tab.
  ii. Replace the alphabetical listing of warehouses with numerical order (Phila, Scranton, Pgh.) on all location dropdowns and results.
  iii. Provide a Unit of Measurement option to toggle between units or cases and validation that if in units, it's fully divisible by the case pack to be a whole case only.
  iv. Include the "Show All" function for lists (instead of 10 at a time).
  v. Change the platform from Oracle's EBS centric Oracle Application Framework to Oracle's cross platform development framework, Oracle Application Development Framework.
  vi. Do not require entry of vendor number for Superuser role

4. **Eliminate the use of Manugistics.** The PLCB runs a very old version of JDA's Manugistics application and uses only a small amount of the application's functionality - warehouse replenishment. This initiative implements the warehouse replenishment functionality built into IBMS, replacing the planning currently done within JDA/Manugistics. This initiative will consist of two parts:

a. The setup and complete functional test of all Business Scenarios related to warehouse replenishment.

b. The necessary steps to convert to the IBMS functions, including the sunset/modification of any existing applications and Report, Interface, Extension and Workflow (RICEW) objects that are no longer necessary and the addition of new or modification of current RICEW objects.

PLCB uses the JDA/Manugistics application (v7.1) to plan for all Regular, non-Bailment inventory that resides in three (3) warehouses across the state (Pittsburgh, Scranton and Philadelphia). The planning algorithms used are based upon forecasted demand from each location and is time-phased, accounting for targeted inventory levels and Safety Stock. Orders are primarily created weekly for all vendors for a minority of product volume within the overall PLCB portfolio. Given that this product now has much less impact on the planning processes, the PLCB would like to migrate remaining planning activities away from the current JDA/Manugistics platform onto the Oracle Retail platform within the Merchandising System (RMS). This will leverage existing knowledge of the Oracle Replenishment Functionality and reduce maintenance cost/effort in support.

5. **Eliminate Use of Permits.** Currently, any order\shipment going down to our WMS requires a permit number. Permits are generated in a variety of ways. From Manugistics when a load is created, the load ID becomes the permit number. From RMS, if manually creating a PO, the permit is manually generated and attached to the order. From the VCP, a permit is automatically assigned behind the scenes for any portal-entered ASN.

In order to eliminate the use of permits, the selected Offeror shall:

a. Identify, plan, and modify any and all WMS/IBMS system configurations and RICEW objects related to the creation and maintenance of the PLCB internal Advance Shipment Notice (a.k.a. Permit)

b. Convert to a supplier-generated ASN communicated via VCP or Electronic Data Interface (EDI).

c. Change interfaces between the VCP, RMS and the WMS to remove all permit functionality

d. Make any necessary changes to application and application extensions to remove permits.

6. **Streamline Vendor Managed Inventory (VMI) Procurement and Inventory Management.** This initiative consists of multiple areas:

a. Expand the evaluation of whether to reserve and decrement Non-Bailment and/or Bailment inventory based upon requested quantities from the IBMS Allocations application (currently only performed for Store Replenishment). Also, allow for a simple, one-step process to purchase Bailment inventory and move ownership of the product to the PLCB without any over receipt transaction and/or physical movement of product.

The custom development surrounding Bailment is centered around segregating inventory by owner (PLCB/Vendor) in Virtual Warehouses

(VWH), a function within base IBMS applications. All segregation of inventory is done within IBMS, not the WMS. All warehouse transactions have a distinct set of rules that control the movement between these virtual locations.

b. For transfer requests generated from the replenishment model, Non-Bailment inventory must be depleted before the reservation (and depletion) of Bailment inventory. This evaluation is invisible to the end-user at time of execution, and individual transactions are mapped to each location in IBMS. This initiative includes expanding this evaluation of inventory requests processed through IBMS Allocations, just as it is being done currently via Replenishment. Currently, allocations can only be done against product in the Non-Bailment VWH, requiring a series of manual steps to "purchase" Bailment inventory and have it received into the VWH. This process is not only manual, but creates complications due to timing and the fact that Non-Bailment inventory is reserved by stores on Replenishment every day.

c. This has overlap with Initiative 2, *Order and Shipment Types (Warehouse Management System (WMS)-IBMS Integration)*, as currently separate transfers are not generated for Replenishment and Allocation. In addition to creating a similar function to allocate against all warehouse inventory, a one-step method is being requested to purchase inventory from a Bailment VWH and receive it into the Non-Bailment VWH, creating a receipt transaction sufficient to invoice against or have included in the weekly consumption PO's send to each vendor.

d. For non-bailment purchase orders that include store allocation information, send the store and quantity information to the WMS to allow cross-dock functionality for that merchandise in the DCs.

7. Streamline Store Replenishment.

Make the following changes in existing store replenishment functionality. If practicable, as defined by PLCB, these changes should be implemented as quickly as possible ahead of other changes in the RFP in order to address ongoing system issues:

a. Change the replenishment functionality so that a store's replenishment can be run in discrete groupings. This will allow replenishment to be run multiple times in a week, for a different grouping of items on each run. This will require a change in Extension 85, used to manipulate store replenishment schedules.

b. Enhance store replenishment functionality in holiday build-up functionality so that an order will be generated when stock-on-hand is zero units, regardless of the case rounding threshold. Also enhance the store exclusion form with standard Oracle location group functionality.

    c. Provide ability for stores to add special occasion orders separate from their replenishment order.

Task 1 - Planning/Initiation.

The selected Offeror shall validate their overall strategic approach to the Project with the PLCB including: Project Methodology; Instance Strategy; Testing Strategy; Responsibility Assignments (RACI Matrix); Project Charter; Backup and Recovery Strategy; Project Scope; Project Plans (high level and detailed); Hardware Procurement Needs; Staffing Plan and Organization Chart; Gap Analysis; Change Management Plan; Technical and User Training Plan; Communication Plan; Quality Assurance Management Plan; Acceptance Management Plan, and; Risk Management Plan.

The selected Offeror shall identify specific needs for information, materials, and decisions with the PLCB prior to the start of each activity of proposed work and submit such request to the PLCB Project Manager in writing.

This is a large project, affecting the three DCs, the PLCB stores, and many users. In recognition of that, the implementation approach (big bang vs phased) will be developed jointly between the selected Offeror and the PLCB after contract award.

Activities and Deliverables for Task 1

The selected Offeror will:

	Task 1 Activities	**Deliverables**
1.1	Validate the overall strategic approach to the project.	Strategic assessment document which identifies issues, opportunities, concerns, and risks
1.2	Refine their proposed, initial, high level project plan (see IV-3, A-2) into a project document consistent with the resulting contract with the level of detail noted here. The project plan must be in Microsoft Office Project 2010 and include a detailed: - Work Breakdown Structure (WBS) showing all major tasks, subtasks, and deliverables - Resource Requirement Analysis that identifies all individual resources that will be assigned to each of the project activities - Project Schedule/Timeline with appropriate PERT or GANTT chart displays that demonstrate project, task, and time relationships - Major milestone chart	Updated detailed Project Plan

		Task 1 Activities	Deliverables
		- Staffing Plan - List of Technical assumptions See IV-5, A for PLCB Project Plan expectations	
1.3		Work with the PLCB to refine and deliver an Acceptance Management Plan that will enable the PLCB to review and approve all project deliverables. The selected Offeror shall ensure that: a. Each project deliverable is submitted to the PLCB Project Manager for review and acceptance with an approved deliverable specification sheet (to be developed jointly between the selected Offeror and the PLCB after contract award). Each deliverable shall address all components required by the RFP, selected Offeror's Proposal, and any areas identified subsequently through meetings and planning sessions. b. The cover page for each deliverable certifies that the selected Offeror's internal deliverable review process was utilized. c. For document based deliverables, the review and acceptance period will be developed jointly between the selected Offeror and the PLCB after contract award. d. For deliverables that contain hardware and/or software programs, the deliverable review process will incorporate acceptance testing as detailed in the PLCB approved Acceptance Test Plan.	Acceptance Management Plan
1.4		Define a scope change management plan for the review and approval by the PLCB	Scope Change Management Plan
1.5		Define an organizational change management plan for the review and approval by the PLCB. The plan should include: - A listing of process changes required to implement the system changes - The tasks required to implement the list of organizational change - The vendor staff responsible to implement the changes - The change management effort shall be managed by the selected vendor similarly to the programming effort, including specific project plans and schedules, and management and	Organizational Change Mgmt. Plan

		Task 1 Activities	Deliverables
		reporting processes to ensure that organizational change management and the programming effort are well coordinated	
1.6		Refine and deliver a communications plan that describes how communications will be managed on the project, including: - Stakeholders and their Roles - The method by which information will be disseminated - The distribution structure, specifically detailing what, how, and when information will flow to stakeholders	Communications Plan
1.7		Produce a Risk Management Strategy/Plan that defines the best approach for identifying, assessing, prioritizing and managing Project risk throughout the life of the Project. a. Review and utilize PLCB's Risk Management Tracking List within SharePoint. b. Review and utilize the PLCB's Defect Management List (defect tracker) within Sharepoint for the creation and maintenance of a Project Issues/Defects log for the duration of the Project.	Risk Management Strategy/Plan Document (Risk Management Plan, Risk Tracker (**Appendix FF**) Defect Tracker (**Appendix EE)**
1.8		Refine and deliver a quality management plan that documents the quality standards and service level requirements of the project (include an organizational responsibility matrix) as well as all quality assurance activities to be implemented during the lifecycle of the project.	Quality Management Plan
1.9		Develop plans for unit, integration, regression and load/performance testing. The PLCB will provide Subject Matter Expert (SME) assistance. The PLCB will conduct UAT testing with the selected Offeror's assistance	Testing Plans
1.10		Refine and deliver a plan for User Training Strategy. The selected Offeror shall determine the best approach for assessing user impact and will advise on training by user role. Curriculum and materials shall be developed as well as a plan to schedule and present classes throughout the entire project.	User Training Strategy and Plan
1.11		Refine and deliver a Technical Knowledge Transfer Plan that describes the overall knowledge transfer approach to Office of Information Technology Services personnel. The selected Offeror will provide on-the-job involvement throughout the project period.	Technical Knowledge Transfer Plan

		Task 1 Activities	Deliverables
	1.12	Develop options of a high level Deployment Plan which takes into consideration the Enterprise environment (e.g., bandwidth, and personnel and existing equipment) for PLCB approval prior to deployment.	Deployment Plan
	1.13	Refine and deliver a back-up, recovery and store business resumption strategy with the PLCB.	Deliver Backup and Recovery Plan
	1.14	Create a Support Strategy document. The Support Strategy Document will detail what the selected Offeror has determined to be the optimal level of support necessary to maintain user service effectiveness during the go-live period, and warranty support of 90 (ninety) days following final deployment . It must include roles, number of resources by role, and hours by resource.	Support Strategy Document
	1.15	Develop a high level Transition Plan which will include an End of Warranty Transition Plan.	High level Transition Plan including an End of Warranty Transition Plan

The following Appendices are included to facilitate completion of Task 1 and the Activities and Deliverables described above:
- APPENDIX M, TECHNICAL LANDSCAPE
- APPENDIX N, APPLICATION INVENTORY

Task 2 – Gather and Document Detail Requirements

The selected Offeror will schedule JAD sessions with SMEs to expand upon and gather specific details of the requirements for all initiatives. This concept is now making a comeback in agile development but may have other names such as JAR (Joint Applications Requirements Capturing); JRP (Joint Requirements Planning) or "JADr (pronounced "jadder") as in JAD for (r)equirements, all of which use JAD concepts which specifically focus on the business and stakeholder requirements.

Common activities which the PLCB expects to be included in JAR/JRP/JADr sessions include understanding the AS IS situation, identifying current business problems, analyzing their causes, determining benefits, and capturing the business requirements and/or business rules. These early project activities are often neglected in an effort to "save time". Based on our experience, the time saved by skipping these activities often leads to expensive rework or customer dissatisfaction with the delivered project.

Typical attendees which the PLCB expects to be included in JAD, JAR/JRP/JADr sessions include the Project Sponsor, Subject Matter Experts, End User Representatives,

the Project Manager/Leader, Business Analysts (a. k. a. Requirements Analysts), plus relevant special interest groups such as Data Administration, Audit, Security, and Legal.

The selected Offeror will develop documentation for the "To Be" and do a gap analysis of "As Is" to "To Be" from these JAD, JAR/JRP/JADr sessions.

Activities and Deliverables for Task 2

The selected Offeror will:

		Task 2 Activities	Deliverables
2.1		Perform "As Is" Analysis	As Is documentation of current functionality where needed. Most of the "As Is" is documented in MD50's.
2.2		Perform JAD sessions	JAD documentation of detail requirements including a requirements traceability document
2.3		Perform "To Be" analysis	To Be documentation of new functionality
2.4		Perform a GAP Analysis providing current functionality (both out of the box and customized), mapping to the new functionality and how those gaps are to be mitigated.	GAP Analysis document with options to close GAP's
2.5		Develop an application development security and role work plan with the PLCB.	Application Development Security and role Work Plan

Task 3 - Design

Based on results of the GAP Analysis, the selected Offeror will determine required changes to the PLCB's existing applications and RICEW objects. RICEW objects that are determined to be no longer needed will, at the PLCB's direction, be removed or replaced by Oracle code where Oracle has provided a patch, new functionality or interface. In addition, the selected Offeror will be encouraged to look for opportunities to

improve business efficiencies, improve reliability, reduce complexity and eliminate customization and make recommendations to the PLCB Project Manager.

The selected Offeror will update PLCB's library of business process, functional (MD50/MD60), technical (MD70), configuration (BR100), migration (MD120), security set-up (BR110) documents, test scripts and training material, as required, or create new documents, to reflect any/all changes to existing RICEW objects (see **Appendix DD)** and rewrite specifications that have been touched by this project into the proposed functional, technical, configuration migration and security set up previously listed. For any new RICEW objects, the selected Offeror will create all required documents. All design documents require PLCB review, validation, and approval. The PLCB is not responsible for code changes that may be required in Task 3 that result from the selected Offeror starting the development process before formal PLCB approvals of designs are obtained.

The PLCB's application landscape consists of multiple "environments". These environments are called development, integration test, user acceptance test, training, production and disaster recovery. Not all applications have all environments; however the IBMS and Oracle Retail Central Office (ORCO) applications do contain all of them. A description of these environments and their purpose can be found in **Appendix L**, IBMS and ORCO infrastructure.

The selected Offeror shall complete all Task 3 activities by the date agreed upon by the selected Offeror and the PLCB.

Activities and Deliverables for Task 3

The selected Offeror will:

	Task 3 Activities	**Deliverables**
3.1	Review the environments (development, integration, UAT, training, and production) with the PLCB staff.	Document any issues, concerns or requested changes.
3.2	Determine and document change impacts – Project Decision/Change Tracker template (see **Appendix HH**).	Document change impacts documented
3.3	Develop/change functional specifications (using PLCB's agreed format (MD50 and MD60)).	New/Updated functional specifications – MD 50's/MD 60's
3.4	Develop/change technical specifications (using PLCB agreed format (MD70 and MD 120).	New/Updated Technical specifications – MD70's/MD120's
3.5	Develop software and security configurations using PLCB agreed format (BR100 and BR110).	New/Updated Software and security configuration specifications – BR100's/BR110's

	Task 3 Activities	Deliverables
3.6	Perform an application architecture design review for all RICEW objects to ensure workable, sustainable, efficient designs.	Architecture Design Specifications
3.7	Develop and validate a detailed work plan.	Detailed Work Plan
3.8	Develop and validate detailed test plans and load testing work plan with PLCB.	Detailed test plans and load test work plan
3.9	Refine and execute the risk management plan.	Risk Management Plan executed
3.10	Execute the change management plan and continue to follow the plan throughout the life of the project.	Change Management Tracking Document
3.11	Execute the communications plan and continue to follow the plan throughout the life of the project.	Updated Communications Plan
3.12	Execute the production support and update coexistence strategy plan.	Updated coexistence strategy plan
3.13	Execute the quality assurance management plan continue to follow the plan throughout the life of the project.	Updated QA Plan
3.14	Update the approved PLCB deployment plan.	Updated Deployment Plan
3.15	Develop a detailed business resumption plan.	Updated Backup and Recovery Plan
3.16	Develop an application development security and role work plan with the PLCB.	Updated Application Development Security and role Work Plan

The following Appendix is included to facilitate completion of Task 3 and the Activities and Deliverables described above:
- APPENDIX BB, BATCH JOB AND SCRIPT CODING STANDARDS

Task 4 - Build and Unit Testing

The selected Offeror will build (code) and unit test all new and redesigned RICEW object changes according to approved technical specifications from Task 3. Any changes to the library of functional and technical documents must be updated as required. In preparation for Task 5, Integration and Regression Testing, the selected Offeror will also review PLCB library of test scripts, select those tests that are necessary for Task 5 and as required, prepare additional testing scripts that leverage standard testing procedures and tools. PLCB utilizes HP's Load Runner software for testing. The selected Offeror will perform unit testing on all single objects, followed by integration, regression, and User Acceptance testing to the satisfaction of the PLCB Quality Assurance team. This procedure needs to be followed prior to approval for migration to the production environment. The selected Offeror shall complete all Task 4 activities by the date agreed upon by the selected Offeror and the PLCB.

Activities and Deliverables for Task 4

The selected Offeror will:

	Task 4 Activities	**Deliverables**
4.1	Configure/update the development environment.	Updated development environment
4.2	Write new code, modify existing code, apply patches, and change/create configurations as necessary according to technical specifications.	New or modified configurations or code documentation
4.3	Conduct and document unit testing.	Unit Test Results
4.4	Develop an application security work plan.	Application Security work plan
4.5	Develop application security and role test scenarios.	Test scenarios documents
4.6	Develop load testing scenarios and criteria.	Load testing documents
4.7	Apply patches and hot fixes in the development environment as identified and agreed to by the PLCB.	Applied patches and hot fixes in the development environment
4.8	Set up development environment. The PLCB's operating system environment will be established by the PLCB Technical Team.	Development environment established

Task 5 - Integration and Regression Testing

In Task 4, the selected Offeror will have reviewed the PLCB's test script library, and selected those tests that are required for this Task 5, and as necessary, prepared additional testing scripts that leverage standard testing procedures and tools.

The selected Offeror, in conjunction with PLCB staff, will execute integration and regression testing. No integrated process may proceed to UAT prior to PLCB approval of its integration and regression testing.

Activities and Deliverables for Task 5

The selected Offeror will:

	Task 5 Activities	**Deliverables**
5.1	Apply patches and hot fixes in the integration test environment as identified and agreed to by the PLCB.	Applied patches and hot fixes in the integration test environment as identified and agree to by the PLCB
5.2	Test the automated installation of the environment and provide knowledge transfer to the PLCB on the script build.	Test Environment Established

		Task 5 Activities	Deliverables
		The PLCB's operating system environment will be established by PLCB Technical Team. The selected Offeror will work with the PLCB Technical Team to setup the Test Environment.	
5.3		Deploy the automated installation to test environment and provide knowledge transfer on the build of the electronic script to the PLCB Technical Team.	Automated installation deployed to Test environment and Knowledge Transfer on automation installation to PLCB Technical Team
5.4		Migrate RICEW object code and update configurations to test environment.	Updated Integration test environment
5.5		Review and update PLCB test cases.	Updated PLCB test cases
5.6		Develop integration test scenarios.	Integration test scenarios
5.7		Conduct one single round of successful integration testing and provide results to the PLCB Project Manager.	Integration test results
5.8		Develop a regression test work plan.	Regression test plan
5.9		Develop regression test scenarios.	Regression test scenarios
5.10		Conduct one single round of regression testing after all scripts run correctly and defects are identified for correction.	Regression test results
5.11		Conduct one single round of application security and role testing with defects identified for correction. Rerun testing for all areas where defects were corrected.	Security test results
5.12		Develop a UAT work plan.	UAT work plan

Task 6 - User Acceptance Testing

The selected Offeror will utilize the PLCB test script library to perform user acceptance testing of all RICEW objects and PLCB implemented business processes. The integration and regression environment will be used for user acceptance testing. The PLCB will lead the user acceptance testing with assistance from the selected Offeror.

Activities and Deliverables for Task 6

The selected Offeror will:

	Task 6 Activities	Deliverables
6.1	Perform tacit and explicit knowledge transfer to PLCB OITS Technical staff and/or designee(s) regarding any system alterations; as well as Business User training prior to implementation.	Training material

	Task 6 Activities	Deliverables
6.2	Observe the PLCB Technical Team as they establish the Production Environment. - The PLCB's operating system environment will be established by the PLCB Technical Team.	Production Environment ready
6.3	Review and update PLCB test cases.	Updated PLCB test cases
6.4	Develop user acceptance test scenarios.	User acceptance test scenarios
6.5	Conduct user acceptance testing and the selected Offeror will provide assistance when required.	Offeror will fix defects discovered from UAT
6.6	Conduct load testing.	Load Testing results
6.7	Build cutover and contingency plans.	Approved cutover and contingency plans
6.8	Define go/no-go criteria.	Go/no-go criteria documented
6.9	Create Help Desk scripts for updated functionality and update Help Desk scripts on those functions that directly impact users.	Help Desk Scripts
6.10	Update the training environment.	Updated Training Environment
6.11	Implement all changes required as identified in the Change Management Plan	Updated Process documentation

Task 7, Implementation

Prior to beginning Task 7, all Deliverables associated with Tasks 1 – 6 must be accepted by the PLCB. Upon PLCB approval of proposed option the selected Offeror will pilot deployment prior to "Go-Live".

Also, prior to beginning Task 7, the selected Offeror will implement the organizational change management plan and the communications plan to ensure that the organization is fully prepared to implement the system changes.

The selected Offeror will prepare the "Go Live Readiness Assessment" **(Appendix II),** review the readiness of the PLCB to go-live with the PLCB Project team and Executive Group, and obtain approval to execute the final cutover plan. The cutover must be designed to minimize the impact to the PLCB's operations.

Activities and Deliverables for Task 7

The selected Offeror will:

	Task 7 Activities	Deliverables
7.1	Create a Pilot deployment schedule.	Pilot Deployment

		Task 7 Activities	Deliverables
			Schedule reviewed and approved by PLCB
7.2		Review go/no-go criteria and plan with PLCB project Team and Executive Group.	Go/no-go criteria reviewed and accepted by PLCB Executives
7.3		Implement the Pilot Deployment.	Pilot deployed successfully
7.4		Prepare the Go Live Readiness Assessment, review readiness to go-live with the PLCB Project Team and Executive Group, and obtain approval to execute the final cutover plan.	Go-Live Readiness Assessment and final cutover plan reviewed and approved by PLCB
7.5		Execute Go Live cutover plan.	Cutover Executed

Task 8 - End of Purchase Order Transition

This section represents the transition requirements to which the selected Offeror must agree. Transition is defined as those activities that are required for the selected Offeror to perform transition to PLCB designees.

During the transition, the selected Offeror shall ensure that program stakeholders do not experience any adverse impact from the transfer from the selected Offeror to PLCB designee. The selected Offeror shall develop and submit a comprehensive Transition Plan that details the proposed schedule, activities, and resource requirements associated with the transition tasks identified. The selected Offeror must implement a PLCB approved Transition Plan.

The Transition Plan is due one hundred-eighty (180) days prior to the end of the contract. Transition Tasks include, but are not limited to:

Activities and Deliverables for Task 8

The selected Offeror will:

	Task 8 Activities	Deliverables
8.1	Refine the High Level Transition Plan into a detailed Transition Plan 180 days prior to the end of the contract for PLCB approval.	Detailed Transition Plan reviewed and approved by PLCB
8.2	Develop and submit a quality assurance process to monitor transition activities.	Quality Assurance process document reviewed and approved by PLCB
8.3	Plan and implement training for OITS staff and any PLCB designees in the delivery of services.	Training completed

		Task 8 Activities	Deliverables
8.4		Deliver approved training material for end users.	Training material for end users
8.5		Develop and deliver Help Desk scripts.	New/updated help desk scripts
8.6		Develop and deliver business resumption scripts.	Business resumption scripts
8.7		Update the disaster recovery environment.	Updated disaster recovery Environment
8.8		Update the non-production integration environment.	Updated integration non-production environment
8.9		Update the non-production UAT environment.	Updated non-production UAT environment
8.10		Work with the PLCB Information Security Office to ensure transition of the PLCB data and confidential documents are secure	Transition Plan
8.11		Transfer all information including documentation relating to software and interfaces; functional business process flows, operation information and all intellectual property created during the duration of the contract.	Intellectual property inventory; complete with storage locations and identification of any second or third party rights
8.12		Transition all correspondence and documentation to the PLCB during the ninety (90)-day warranty support period	All correspondence and documentation related to this project
8.13		Execute the approved Transition Plan	Transition Plan executed
8.14		Perform an After Action Review (AAR) with Project participants and document findings using the PLCB AAR Template (see **Appendix GG**).	Completed AAR submitted to PLCB Project Manager
8.15		Provide post-transition services including a Transition Results Report and access to the selected Offerors staff with technical and operational expertise	Transition Results Report

Task 9 - Warranty Support

Warranty Support for Ninety (90) days: The selected Offeror will provide ninety (90) days of post go-live warranty support at no cost to the PLCB. The warranty period will commence on the PLCB sign off date of full implementation of the project. The warranty support shall include resolution for errors discovered during the 90-day period as well as any resulting breakage from those error resolution efforts. All critical and high defects must be resolved before the ninety (90)-day warranty support period expires.

IV-5. Reports and Project Control.

Selected Offeror shall engage in regular and frequent communication with the PLCB Project Manager. Selected Offeror may propose additional reports as deemed necessary.

The following documents, reports and actions are required to exercise the proper control and ensure the communication that will be needed about the progression and ultimate success of this project and describes the minimum level of required documents, reports, and controls. The selected Offeror will be responsible for the delegation of this work and the timeliness and clarity of delivered documents, reports, and controls.

A. **Project Plan.** The selected Offeror shall create and maintain a master Microsoft Office Project 2010 format ("Project Master") work plan that details each task outlined in this RFP, plus those additional tasks the selected Offeror deems as necessary for successful completion of the Project as outlined. In addition, the selected Offeror shall create and maintain detailed individual Microsoft Project work plans for each major task, or incorporate the details into the Project Master, that identify the work elements of each task, dependencies for each task, the resources assigned to the task, the time allotted to each element, the milestone associated with the task, and the deliverable item(s) to be produced.

B. **Status Meetings and Reports.** During the project selected Offeror shall facilitate a weekly project team meeting and present a status report covering: Completed activities and milestones; Activities and milestones that are behind schedule; Activities and milestones that are upcoming for the next week; Risks and issues or concerns; A schedule performance index (SPI); Problems and recommendations, and; Decisions to be made.

This report will be tied to the work plan the selected Offerors developed in its proposal, as amended or approved by the PLCB. Overall status and individual milestones will be indicated as green, yellow, or red, defined as follows:

1. *Green Status* – Project is progressing according to plan – no corrective measures necessary.

2. *Yellow Status* – Project schedule is at risk; corrective action must be planned and monitored by PLCB's Project Manager.

3. *Red Status* - Project has been negatively impacted; immediate corrective action(s) are necessary, as well as notification to the Executive Team during weekly meetings on an as needed basis

C. **Project Risk Log.** During every project update the selected Offeror will make use of the PLCB Project Risk Log. The Project Risk Log will contain a record of every Project risk that has been identified which has the potential to negatively impact the Project. The selected Offeror's Project Manager must notify the PLCB Project Manager of any newly identified project risks when they are identified. The selected

Offeror shall utilize the PLCB's Risk Management Tracking List within SharePoint for risk management assessment and reporting for the entire duration of the project. (see **Appendix FF**)

D. Project Management Office (PMO) Meeting.   Throughout the course of the Project, the selected Offeror's Project Manager and the PLCB Project Manager will hold weekly meetings at mutually agreeable times. The meetings will take place in Harrisburg, Pennsylvania. The PLCB Project Manager will schedule all meetings. The purpose of these meetings may include, but will not be limited to: Project status; Issue resolution; Risk mitigation; Recommendations; Project strategies.

E. Steering Team Meeting. Throughout the course of the project, the selected Offeror's project manager and the PLCB Project Manager will hold monthly Steering Committee meetings at mutually agreeable times. The meetings will take place in Harrisburg, Pennsylvania. The PLCB Project Manager will schedule all meetings. The purpose of these meetings may include, but will not be limited to: Project status; Issues that have been escalated for executive review and resolution; Risk mitigation; Recommendations; Project strategies.

F. Reports. Reports that will be required throughout the course of this project will include, but will not be limited to:

1. **Task Plan.** A work plan for each task that identifies the work elements of each task, the resources assigned to the task, and the time allotted to each element and the deliverable items to be produced. Where appropriate, a PERT or Gantt chart display should be used to show project, task, and time relationship.

2. **Status Report.** A periodic weekly progress report covering activities, problems, risks and recommendations. This report should be keyed to the work plan selected Offerors developed in its proposal, as amended or approved by the PLCB.

3. **Problem Identification Report.** An "as required" report, identifying any major potential problem areas. The report should describe the problem and its impact on the overall project and on each affected task. The report should list possible courses of action with advantages and disadvantages of each, and include selected Offeror recommendations with supporting rationale.

4. **Final Report.** Selected Offerors will perform an After Action Review (AAR) with Project participants.

   ▪ The AAR will be documented using the PLCB AAR Template (see **Appendix GG**).

   ▪ The AAR will be submitted by selected Offeror Project Managers and the PLCB Project Manager

IV-6. Contract Requirements - Small Diverse Business Participation.

All contracts containing Small Diverse Business participation must also include a provision requiring the selected Offeror to meet and maintain those commitments made to Small Diverse Businesses at the time of proposal submittal or contract negotiation, unless a change in the commitment is approved by the BSBO. All contracts containing Small Diverse Business participation must include a provision requiring Small Diverse Business subcontractors to perform at least **fifty (50%)** of the subcontracted work.

The selected Offeror's commitments to Small Diverse Businesses made at the time of proposal submittal or contract negotiation shall, to the extent so provided in the commitment, be maintained throughout the term of the contract and through any renewal or extension of the contract. Any proposed change must be submitted to BSBO, which will make a recommendation to the Issuing Officer regarding a course of action.

If a contract is assigned to another Offeror, the new Offeror must maintain the Small Diverse Business participation of the original contract.

Selected Offerors shall complete the Prime Contractor's Quarterly Utilization Report (or similar type document containing the same information) and submit it to the Issuing Officer and BSBO within **ten (10)** workdays at the end of each quarter the contract is in force. This information will be used to determine the actual dollar amount paid to Small Diverse Business subcontractors and suppliers. Also, this information will serve as a record of fulfillment of the commitment the selected Offeror made and for which it received Small Diverse Business participation points. If there was no activity during the quarter then the form must be completed by stating "No activity in this quarter."

NOTE: EQUAL EMPLOYMENT OPPORTUNITY AND CONTRACT COMPLIANCE STATEMENTS REFERRING TO COMPANY EQUAL OPPORTUNITY POLICIES OR PAST CONTRACT COMPLIANCE PRACTICES DO NOT CONSTITUTE PROOF OF SMALL DIVERSE BUSINESS STATUS OR ENTITLE AN OFFEROR TO RECEIVE CREDIT FOR SMALL DIVERSE BUSINESS UTILIZATION.

APPENDIX A

IT CONTRACT TERMS AND CONDITIONS

The IT Contract Terms and Conditions may be accessed at the following link: http://www.dgsweb.state.pa.us/comod/CurrentForms/IT_Terms_and_Conditions.doc. Item (f) (1) of Section 2, Purchase Orders on Page 2 is changed as follows: "A handwritten signature shall be required in order for the Contract to be legally enforceable."

The Pennsylvania Liquor Control Board uses the Oracle system instead of the SAP system used by other commonwealth agencies. The selected Offeror, therefore, will be required to register with the PLCB's Supplier Unit. Registration information is available at the following link: http://www.portal.state.pa.us/portal/server.pt/community/logistics/17480/supplier_registration/611701.

APPENDIX B

SPECIAL CONTRACT TERMS AND CONDITIONS

SPECIAL CONTRACT TERMS AND CONDITIONS

1. **INSURANCE REQUIREMENTS**

   CONTRACTOR shall procure and maintain at its expense the following types of insurance issued by companies and evidenced by policies, both of which are acceptable to the PLCB and authorized to conduct such business under the laws of the PLCB:

   a. Worker's compensation insurance for all CONTRACTOR's employees and those of any subcontractor, engaged in work at the site of the project in accordance with the Worker's Compensation Act of 1915 and any supplements or amendments thereof.

   b. Comprehensive General Liability, and Property Damage Insurance to protect the PLCB, CONTRACTOR, and any and all subcontractors from claims for damages for personal injury (including bodily injury), sickness or disease, accidental death, and damage to property, including loss of use resulting from any property damage, which may arise out of the services performed under this Contract, whether such performance be by CONTRACTOR, by any subcontractor, or anyone directly or indirectly employed by either. The limits of such insurance shall be in an amount not less than one million dollars ($1,000,000.00 for injury to or death of one person in a single occurrence and three million dollars ($3,000,000.00) for injury to or death of more than one person in a single occurrence and two million five hundred thousand dollars ($2,500,000.00) for a single occurrence of property damage. The insurance must cover, at a minimum, any loss, shortage, breakage, burglary or theft of PLCB merchandise or other Commonwealth property that occurs in the performance of this contract.

   Such policies shall be occurrence rather than claims-made policies and shall name the PLCB as an additional insured. The insurance shall not contain any endorsements or any other form designed to limit and restrict any action by the PLCB, as an additional insured, against the insurance coverage in regard to work performed for the PLCB.

   Prior to commencement of work under this Contract, the CONTRACTOR shall provide the PLCB with current certificates of insurance. These certificates shall contain a provision that coverage afforded under the policies shall not be cancelled or changed until at least thirty (30) days prior written notice has been given the PLCB. Copies of such notification shall be sent to the PLCB Contract Administrator.

   CONTRACTOR also agrees to authorize any provider of insurance coverage required under this Contract, to notify the Issuing Officer of any notices or premiums due by sending a copy of such notice to the Contract Administrator. The PLCB reserves the right, in the event of any default by the CONTRACTOR on any premiums due hereunder, to cure said default and to deduct such premiums from any monies due the CONTRACTOR.

2.   **<u>DISCHARGE</u>**

If during the term of the Contract, or any additional period or extension thereof, the PLCB is required to discontinue operations due to actions or inactions taken by the courts, the Federal government, the Legislature of the Commonwealth of Pennsylvania, or some other cause beyond the control of the PLCB, this Contract shall immediately expire and both parties are discharged form all terms, conditions, and covenants in this Contract. However, a final settlement of this Contract is required and shall survive expiration of this Contract.

APPENDIX C

LIQUOR CODE SECTION, LAWS OF PENNSYLVANIA

LIQUOR CODE SECTION, LAWS OF PENNSYLVANIA

The Contractor shall comply with Liquor Code Sections 210 and 214 [47 P.S. §§ 2-210, 2-214], which provide as follows:

Section 2-210. **Restrictions on members of the board and certain employees of Commonwealth**

(a) A member or employee of the board or enforcement bureau or a member of the immediate family of a member or employee of the board or enforcement bureau shall not be directly or indirectly interested or engaged in any other business or undertaking within the Commonwealth dealing in liquor, alcohol, or malt or brewed beverages, whether as owner, part owner, partner, member of syndicate, holder of stock exceeding five percent (5%) of the equity at fair market value of the business, independent contractor or manager of a licensed establishment required under 40 Pa. Code §5.23 (relating to appointment of managers), and whether for his own benefit or in a fiduciary capacity for some other person. For the purpose of this subsection only, "employee of the board or Enforcement Bureau" shall mean any individual employed by the board or Enforcement Bureau who is responsible for taking or recommending official action of a non-ministerial nature with regard to:

   (1)   Contracting or procurement;

   (2)   Administering or monitoring grants or subsidies;

   (3)   Planning or zoning;

   (4)   Inspecting, licensing, regulating or auditing any person; or

   (5)   Any other activity where the official action has an economic impact of greater than a de minimis nature on the interests of any person.

(b)   No member or employee of the board or enforcement bureau or a member of the immediate family of a member or employee of the board or enforcement bureau nor any employee of the Commonwealth shall solicit or receive, directly or indirectly, any commission, remuneration or gift whatsoever, from any person having sold, selling or offering liquor or alcohol for sale to the board for use in Pennsylvania Liquor Stores.

(c)   No person convicted of an infamous crime may be employed as a member or employee by the board or enforcement bureau.

(d)   No member or employee of the board or enforcement bureau may use his position with the board or enforcement bureau, or any confidential information received through his position with the board or enforcement bureau, to obtain financial gain,

other than compensation provided by law, for himself, a member of his immediate family or a business with which he is associated.

(e) No person may offer or give to a member or employee of the board or enforcement bureau or a member of his immediate family or a business with which he is associated, and no member or employee of the board or enforcement bureau may solicit or accept anything of value, including a gift, loan, political contribution, reward or promise of future employment, based on an understanding that the vote, official action or judgment of the member or employee of the board or enforcement bureau would be influenced thereby.

(f) No member or employee of the board or enforcement bureau or a member of his immediate family or any business in which the member or employee or a member of his immediate family is a director, officer or owner or holder of stock exceeding five percent (5%) of the equity at fair market value of the business may enter into any contract valued at five hundred dollars ($500.00) or more to provide goods or services to the board or enforcement bureau unless the contract has been awarded to the lowest responsible bidder through an open and public process, including prior public notice and subsequent public disclosure of all proposals considered and contracts awarded.

(g) No former member or employee of the board or enforcement bureau may represent a person, with or without compensation, on any matter before the board or enforcement bureau for one year after leaving the board or enforcement bureau.

(h) No member or employee of the board or enforcement bureau or an advisor or consultant thereto having recommended to the board or enforcement bureau either the making of a contract or a course of action of which the making of a contract is an express or implied part, may, at any time thereafter, have an adverse interest in that contract.

(i) No member or employee of the board or enforcement bureau may influence or attempt to influence the making of, or supervise or deal with, a contract with the board or enforcement bureau in which he has an adverse interest.

(j) No member or employee of the board or enforcement bureau may have an adverse interest in a contract with the board or enforcement bureau.

(k) No person having an adverse interest in a contract with the board or enforcement bureau may become an employee of the board or enforcement bureau until the adverse interest has been wholly divested.

(l) No member or employee of the board or enforcement bureau, except in the performance of his duties as such employee, may, for remuneration, directly or indirectly, represent a person upon a matter pending before the board or enforcement bureau.

(m) (1)   Any person who violates the provisions of this section shall have his employment by the board or enforcement bureau immediately terminated by the appropriate person having the power to terminate and shall be liable to the board or enforcement bureau to reimburse the board or enforcement bureau for all compensation received by him from the board or enforcement bureau while employed in violation of subsection (c).

(2)   Any person who violates the provisions of subsections (b), (d) or (e) shall be guilty of a felony and, upon conviction thereof, shall be sentenced to pay a fine of not more than ten thousand dollars ($10,000.00) or to undergo imprisonment for not more than five (5) years, or both.

(3)   Any person who violates the provisions of subsections (a) or (f) through (l) shall be guilty of a misdemeanor and, upon conviction thereof, shall be sentenced to pay a fine of not more than one thousand dollars ($1,000.00) or to undergo imprisonment for not more than one (1) year, or both.

(4)   Any person who obtains financial gain from violating any provisions of this section, in addition to any other penalty provided by law, shall pay into the accounts of the board a sum of money equal to three (3) times the financial gain resulting from the violation.

(5)   Any person who violates the provisions of this section shall be barred for a period of five (5) years from engaging in any business or contract with the board or enforcement bureau.

(6)   The penalties and sanctions provided by this subsection shall supersede any similar penalties and sanctions provided by the act of July 19, 1957 (P.L. 1017, No. 451), known as the "State Adverse Interest Act" and the act of October 4, 1978 (P.L. 883, No. 170), referred to as the Public Official and Employee Ethics Law.

(n)   As used in this section, the following words and phrases shall have the meanings given to them in this subsection:

"Business" shall mean a corporation, partnership, sole proprietorship, firm, enterprise, franchise, association, organization, self-employed individual, holding company, joint-stock company, receivership, trust or legal entity organized for profit or as a not-for-profit corporation or organization.

"Immediate family" shall mean a spouse residing in the person's household and minor dependent children.

"Infamous Crime" shall mean a violation and conviction for an offense which would disqualify an individual from holding public office pursuant to section 6 of Article II of the Constitution of Pennsylvania; a conviction within the preceding ten (10) years for a violation of this section or of 18 Pa.C.S. § 4113 (relating to misapplication of entrusted property and property of government or financial institutions), Ch. 47

(relating to bribery and corrupt influence), Ch. 49 (relating to falsification and intimidation), Ch. 51 (relating to obstructing governmental operations) or Ch. 53 (relating to abuse of office); or a violation of the laws of this Commonwealth or another state or the Federal Government for which an individual has been convicted within the preceding ten (10) years and which is classified as a felony.

Section 2-214. Prohibitions

(a) The board may not make a contract or otherwise do business with a corporation, vendor or service contractor that has not complied with the regulatory and statutory requirements of any other administrative agency.

(b) The board may not make a contract or otherwise do business with a transportation carrier for hire of liquor, wine or malt or brewed beverages which (carrier) has not obtained the proper permits from the Pennsylvania Public Utility Commission under 66 Pa. C.S. Ch. 25 (relating to contract carrier by motor vehicle and broker).

APPENDIX D

SAMPLE CONTRACT

SAMPLE CONTRACT

THIS CONTRACT to improve the efficiency and responsiveness of, and reduce costs associated with, the PLCB's Supply Chain systems and processes through identifying and implementing enhancements to PLCB's supply chain systems and warehouse interfaces for *"Supply Chain Enhancements"* ("Contract") is entered into this _____ day of _____, 201_, by and between the Commonwealth of Pennsylvania, acting through the Pennsylvania Liquor Control Board ("PLCB"), and _____ ("CONTRACTOR").

WITNESSETH:

WHEREAS, the PLCB issued a Request For Proposals for *"Supply Chain Enhancements"* RFP No. 20140401 ("RFP"); and

WHEREAS, CONTRACTOR submitted a proposal in response to the RFP; and

WHEREAS, the PLCB determined that CONTRACTOR's proposal, was the most advantageous to the Commonwealth after taking into consideration all of the evaluation factors set forth in the RFP and selected CONTRACTOR for contract negotiations; and

WHEREAS, the PLCB and CONTRACTOR have negotiated this Contract as their final and entire agreement in regard to improving the efficiency and responsiveness of, and reducing costs associated with, the PLCB's Supply Chain systems and processes through identifying and implementing enhancements to PLCB's supply chain systems and warehouse interfaces.

NOW THEREFORE, intending to be legally bound hereby, the PLCB and CONTRACTOR agree as follows:

1. CONTRACTOR shall, in accordance with the terms and conditions of this Contract, provide a strategy to the PLCB to improve the efficiency and responsiveness of, and reduce costs associated with, the PLCB's Supply Chain systems and processes through identifying and implementing enhancements to PLCB's supply chain systems and warehouse interfaces, as more fully defined in the RFP, which is attached hereto and made part of this Contract.

2. CONTRACTOR agrees that the services shall be performed during the contract period of two (2) years following the date of the Notice to Proceed of this Contract by the PLCB. PLCB's Contracting Officer may renew the contract incrementally or in one step, for a period of up to two (2) years by written notification to the CONTRACTOR.

3. The PLCB shall pay the CONTRACTOR during the existence of this Contract for work completed in accordance with the terms and conditions of the Contract, the maximum amount of XXXXXXX Dollars and XXXXX Cents ($_____) for the time period set forth in #2 above of this Contract.

4. The PLCB and CONTRACTOR agree to be bound by the IT Contract Terms and Conditions, 8-K-1620, which is attached hereto and made part of this Contract.

5. The PLCB and CONTRACTOR agree to be bound by the Special Contract Terms and Conditions, which is attached and made part of this Contract.

6. The PLCB and CONTRACTOR agree to be bound by the Liquor Code Section, Laws of Pennsylvania, which is attached and made part of this Contract.

7. CONTRACTOR agrees to provide the services for *"Supply Chain Enhancements"* as described in its Technical Submittal, which is attached hereto and made part of this Contract, at the prices listed in its Cost Submittal, which is attached hereto and made part of this Contract.

8. CONTRACTOR agrees to meet and maintain the commitments to Small Diverse Business Submittal, if applicable.

9. This Contract is comprised of the following documents, which are listed in order of precedence in the event of a conflict between these documents:

   a. The Special Contract Terms and Conditions.

   b. The Liquor Code Section, Laws of Pennsylvania

   c. The IT Contract Terms and Conditions, 8-K-620.

   d. The CONTRACTOR's Cost Submittal and any addenda, if applicable.

   e. The RFP and any addenda, including all referenced Appendices.

   f. The CONTRACTOR's Technical Submittal and any addenda, if applicable.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the PARTIES to this Contract have executed it through their respective duly authorized officers.

CONTRACTOR

ATTEST:

BY:_____   BY:_____
          NAME   DATE   NAME   DATE

TITLE:_____   TITLE:_____

FEDERAL ID NO: _____

If a Corporation, only the Chairman, President, Vice President, Senior Vice President, Executive Vice President, Assistant Vice President, Chief Executive Officer or Chief Operating Officer must sign; if one of these officers is not available, please attach a resolution. If a sole proprietorship, only the owner must sign; if a partnership, only one partner needs to sign; if a limited partnership, only a general partner may sign. If a Limited Liability Company ("LLC"), only one member needs to sign, unless it is a manager-based LLC, then a manager must sign. If a Municipality, Authority, or other entity, please attach a resolution.

_____
DO NOT WRITE BELOW THIS LINE--FOR COMMONWEALTH USE ONLY

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA LIQUOR CONTROL BOARD

ATTEST:

BY:_____   BY:_____
          NAME   DATE   NAME   DATE

TITLE:_____   TITLE:_____

APPROVED FOR FORM AND LEGALITY:

BY_____
        OFFICE OF CHIEF COUNSEL (PLCB)   DATE

BY_____
        OFFICE OF ATTORNEY GENERAL   DATE

CERTIFICATION OF FUNDS:
I HEREBY CERTIFY THAT FUNDS IN THE AMOUNT OF $_____
ARE AVAILABLE UNDER APPROPRIATION 084-026-

BY_____
        For Comptroller   DATE

Appendix D Page 3 of 3

APPENDIX E

DOMESTIC WORKFORCE UTILIZATION CERTIFICATION

DOMESTIC WORKFORCE UTILIZATION CERTIFICATION

To the extent permitted by the laws and treaties of the United States, each proposal will be scored for its commitment to use the domestic workforce in the fulfillment of the contract. Maximum consideration will be given to those Offerors who will perform the contracted direct labor exclusively within the geographical boundaries of the United States or within the geographical boundaries of a country that is a party to the World Trade Organization Government Procurement Agreement. Those who propose to perform a portion of the direct labor outside of the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement will receive a correspondingly smaller score for this criterion. In order to be eligible for any consideration for this criterion, Offerors must complete and sign the following certification. This certification will be included as a contractual obligation when the contract is executed. Failure to complete and sign this certification will result in no consideration being given to the Offeror for this criterion.

I, _____[title] of _____[name of Offeror] a
_____ [place of incorporation] corporation or other legal entity, ("Offeror") located at
_____, having a Social
[address], having a Social Security or Federal Identification Number of
_____, do hereby certify and represent to the Commonwealth of Pennsylvania
("Commonwealth") (Check **one** of the boxes below):

☐☐   All of the direct labor performed within the scope of services under the contract will be performed exclusively within the geographical boundaries of the United States or one of the following countries that is a party to the World Trade Organization Government Procurement Agreement: Armenia, Aruba, Austria, Belgium, Bulgaria, Canada, Chinese Taipei, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

OR

☐ ☐_____ **percent (__%)** **[Offeror must specify the percentage]** of the direct labor performed within the scope of services under the contract will be performed within the geographical boundaries of the United States or within the geographical boundaries of one of the countries listed above that is a party to the World Trade Organization Government Procurement Agreement. Please identify the direct labor performed under the contract that will be performed outside the United States and not within the geographical boundaries of a party to the World Trade Organization Government Procurement Agreement and identify the country where the direct labor will be performed:
_____
        [Use additional sheets if necessary]

The Pennsylvania Liquor Control Board shall treat any misstatement as fraudulent concealment of the true facts punishable under Section 4904 of the *Pennsylvania Crimes Code*, Title 18, of Pa. Consolidated Statutes.

Attest or Witness:

_____   _____
Corporate or Legal Entity's Name   Signature/Date

_____   _____
Printed Name/Title   *Printed Name/Title*

APPENDIX F

COST SUBMITTAL TEMPLATE

SUPPLY CHAIN ENHANCEMENTS

PLCB RFP # 20140401

INSTRUCTIONS

1.) All sheets must be filled out completely. Complete all yellow highlighted cells on worksheets.

2.) Payments for Tasks 1-8 are Deliverable-based. Payments will be made after the completion of each Task (1-8) and the acceptance by the PLCB Project Manager of all Deliverables associated with that Task, less 10% hold back (see Part II-10). The cost of reports listed in Section IV-5 of the RFP must be included in the appropriate task.

3.) Formulas are imbedded in the worksheets. Offerors must verify that all calculations and costs are accurate.

4.) Summary: All information is linked and will calculate automatically.

Please contact the Issuing Officer with any questions or concerns: Philip J. Friedrich at pfriedrich@pa.gov

Tasks 1-9 Deliverables Worksheet

	Cost
Task 1 - Planning/Initiation includes Deliverables:	
1.1 Strategic assessment document; 1.2 Updated detailed Project Plan; 1.3 Acceptance Management Plan: 1.4 Scope Change Management Plan; 1.5 Organizational Change Management Plan; 1.6 Communications Plan; 1.7 Risk Management Strategy/Plan Document; 1.8 Quality Management Plan; 1.9 Testing Plans; 1.10 User Training Strategy and Plan; 1.11 Technical Knowledge Transfer Plan; 1.12 Deployment Plan; 1.13 Backup and Recovery Plan; 1.14 Support Strategy Document; 1.15 High level Transition Plan including an End of Warranty Transition Plan	
Task 1 TOTAL	$ -
Task 2 -Gather and Document Detail Requirements includes Deliverables:	
2.1 As Is documentation of current functionality where needed. (Most of the "As Is" is documented in MD50's; 2.2 JAD documentation of detail requirements and requirements traceability matrix; 2.3 To Be Documentation (new functionality); 2.4 GAP Analysis Documented with options to close GAP's; 2.5 Application Development Security and Role Work Plan	
Task 2 TOTAL	$ -
Task 3 - Design includes Deliverables:	
3.1 All issues concerns or requested changes documented; 3.2 Change impacts documented; 3.3 New/Updated functional specifications documented (MD50's/MD60's); 3.4 New/Updated technical specificaitons documented (MD70's/MD190's); 3.5 New/Updated Software and security configurations documented (BR100's/BR110's); 3.6 Archtecture Design Specificaitons; 3.7 Detailed Work Plan; 3.8 Detailed test plans and load test work plan; 3.9 Risk Management Plan Executed; 3.10 Change Management Tracking Document; 3.11 Updated Communications Plan; 3.12 Updated coexistence strategy plan; 3.13 Updated QA Plan; 3.14 Updated Deployment Plan; 3.15 Updated Backup and Recovery Plan; 3.16 Updated Application Security and Role Work Plan	
Task 3 TOTAL	$ -
Task 4 - Build and Unit Testing includes Deliverables:	
4.1 Updated development environment; 4.2 New or modified configurations or code documentation; 4.3 Unit Test Results; 4.4 Application Security Work Plan; 4.5 Test scenarios documents; 4.6 Load Testing documents; 4.7 Applied patches and hot fixes in the development environment; 4.8 Development environment established	

Task 4 TOTAL	$ -

Task 5 - Integration and Regression Testing includes Deliverables:	
5.1 Applied patches and hot fixes in the integration test environment; 5.2 Test Environment Established; 5.3 Automated installation deployed to Test Environment and Knowledge Transfer on automation installation to PLCB Technical Team; 5.4 Updated Integration Test Environment; 5.5 Updated PLCB Test Cases; 5.6 Integration Test Scenarios Documented; 5.7 Integration Test Results; 5.8 Regression Test Plan; 5.9 Regresion Test Scenarios Documented; 5.10 Regression Test Results; 5.11 Security Test Results; 5.12 UAT Work Plan	
Task 5 TOTAL	$ -

Task 6 - User Acceptance Testing includes Deliverables:	
6.1 Traning Material; 6.2 Production Environment Ready; 6.3 Updated PLCB Test Cases; 6.4 User acceptance scenarios documented; 6.5 All defects discovered from UAT fixed; 6.6 Load Testing Results; 6.7 Approved Cutover and Contingency Plans; 6.8 Go/no-go Criteria Documented; 6.9 Help Desk Scripts Documented (Updated/New); 6.10 Updated Training Environment; 6.11 Updated Process Documentation	
Task 6 TOTAL	$ -

Task 7 -Implementation includes Deliverables:	
7.1 Pilot Deployment Scheduled Approved by PLCB; 7.2 Go/no-go Criteria Approved by PLCB; 7.3 Pilot Deployed Successfully; 7.4 Go-Live Readiness Assessment and Final Cutover Plan Approved by PLCB; 7.5 Cutover Executed	
Task 7 TOTAL	$ -

Task 8 -End of Purchase Order Transition includes Deliverables:	
8.1 Detailed Transition Plan Approved by PLCB; 8.2 Quality Assurance process document Approved by PLCB; 8.3 Training Completed; 8.4 Training Material forEnd Users delivered; 8.5 New/Updated Help Desk Scripts delivered; 8.6 Business Resumption Scripts delivered; 8.7 Updated Disaster Recovery Environment; 8.8 Updated Integration Non-Production Environment; 8.9 Updated Non-Production UAT Environment; 8.10 Transition of PLCB data and confidential documents (Transition Plan); 8.11 Intellectual property inventory; complete with storage locations and identification of any second or third party rights; 8.12 All correspondence and documentation related to this project (Transition to PLCB); 8.13 Transition Plan Executed; 8.14 Completed AAR submitted to PLCB Project Manager; 8.15 Transistion Results Report	
Task 8 TOTAL	$ -

Task 9 -Warranty Support includes Deliverable:	
9.1 Nintey (90) days of post go-live warranty support	n/a
Task 9 TOTAL	n/a

Cost Summary

Task	Total Cost
Task 1	$ -
Task 2	$ -
Task 3	$ -
Task 4	$ -
Task 5	$ -
Task 6	$ -
Task 7	$ -
Task 8	$ -
Task 9	n/a
Total Tasks 1-9	**$ -**

APPENDIX G

PROPOSAL COVER SHEET

PROPOSAL COVER SHEET
COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA LIQUOR CONTROL BOARD
RFP 20140401

Enclosed in three separately sealed submittals is the proposal of the Offeror identified below for the above-referenced RFP:

Offeror Information:	
Offeror Name	
Offeror Mailing Address	
Offeror Website	
Offeror Contact Person	
Contact Person's Phone Number	
Contact Person's Facsimile Number	
Contact Person's E-Mail Address	
Offeror Federal ID Number	

Submittals Enclosed and Separately Sealed:		
	☐	Technical Submittal
	☐	Small Diverse Business Submittal
	☐	Cost Submittal

Signature	
Signature of an official authorized to bind the Offeror to the provisions contained in the Offeror's proposal:	
Printed Name	
Title	

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM WITH THE OFFEROR'S PROPOSAL MAY RESULT IN THE REJECTION OF THE OFFEROR'S PROPOSAL

APPENDIX H

CORPORATE SIGNATORY DELEGATION AUTHORIZATION

CORPORATE SIGNATORY DELEGATION AUTHORIZATION

I, _____, of _____, City of _____,
   (Name)   (Address)

County of _____, State of _____, certify that I am the

_____of_____, a corporation organized
  (Title/Capacity)   *(Name of Corporation)*

under the laws of the State of_____, having its principal office at

_____, City of _____, County of _____,
   (Address)

State of _____; and that the following is a true and complete copy of a

resolution duly adopted by the Board of Directors of _____
                                                      (Name of Corporation)

at a meeting held by them on _____day of _____, _____, at which a quorum

was present; and that this resolution has not been altered, amended, repealed,

rescinded or otherwise modified and that it is still in full force and effect.

RESOLVED THAT _____ of _____, City of
                      (Name)   (Address)

_____, County of _____, State of _____

is hereby authorized to execute contracts on behalf of the corporation.

   IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of

the corporation this _____day of _____, 20_____.

_____
(Signature of Certifying Official)
                                 (SEAL)
_____
(Typed or Printed Name)

_____
(Title)

APPENDIX I

TRADE SECRET/CONFIDENTIAL PROPRIETARY INFORMATION NOTICE

Master Information Technology (IT) Services Invitation to Qualify (ITQ) Contract Trade Secret/Confidential Proprietary Information Notice

Instructions:

The Commonwealth may not assert on behalf of a third party an exception to the public release of materials that contain trade secrets or confidential proprietary information unless the materials are accompanied, at the time they are submitted, by this form or a document containing similar information.

It is the responsibility of the party submitting this form to ensure that all statements and assertions made below are legally defensible and accurate. The Commonwealth will not provide a submitting party any advice with regard to trade secret law.

Name of submitting party:

Contact information for submitting party:

Please provide a brief overview of the materials that you are submitting (e.g. bid, grant application, technical schematics):

Please provide a brief explanation of why the materials are being submitted to the Commonwealth (e.g. response to bid #12345, application for grant XYZ being offered by the PLCB, documents required to be submitted under law ABC)

Please provide a list detailing which portions of the material being submitted you believe constitute a trade secret or confidential proprietary information, and please provide an explanation of why you think those materials constitute a trade secret or confidential proprietary information. Also, please mark the submitted material in such a way to allow a reviewer to easily distinguish between the parts referenced below. (You may attach additional pages if needed)

Note: The following information will not be considered a trade secret or confidential proprietary information:

- Any information submitted as part of a vendor's cost bid
- Information submitted as part of a vendor's technical response that does not pertain to specific business practices or product specification
- Information submitted as part of a vendor's technical or small diverse business response that is otherwise publicly available or otherwise easily obtained
- Information detailing the name, quantity, and price paid for any product or service being purchased by the Commonwealth

Page Number	Description	Explanation

Acknowledgment

The undersigned party hereby agrees that it has read and completed this form, and has marked the material being submitted in accordance with the instructions above. The undersigned party acknowledges that the Commonwealth is not liable for the use or disclosure of trade secret data or confidential proprietary information that has not been clearly marked as such, and which was not accompanied by a specific explanation included with this form.

The undersigned agrees to defend any action seeking release of the materials it believes to be trade secret or confidential, and indemnify and hold harmless the Commonwealth, its agents and employees, from any judgments awarded against the Commonwealth in favor of the party requesting the materials, and any and all costs connected with that defense. This indemnification survives so long as the Commonwealth has possession of the submitted material, and will apply to all costs unless and until the undersigned provides a written statement or similar notice to the Commonwealth stating that it no
longer wishes to exempt the submitted material from public disclosure.

The undersigned acknowledges that the Commonwealth is required to keep all records for at least as long as specified in its published records retention schedule.

The undersigned acknowledges that the Commonwealth reserves the right to reject the undersigned's claim of trade secret/confidential proprietary information if the Commonwealth determines that the undersigned has not met the burden of establishing that the information constitutes a trade secret or is confidential. The undersigned also acknowledges that if only a certain part of the submitted material is found to constitute a trade secret or is confidential, the remainder of the submitted material will become
public; only the protected information will be removed and remain nonpublic.

If being submitted electronically, the undersigned agrees that the mark below is a valid electronic signature.

Signature	Title	Date

APPENDIX I: TRADE SECRET CONFIDENTIAL PROPRIETARY INFORMATION

APPENDIX J

SMALL DIVERSE BUSINESS LETTER OF INTENT

[DATE]

[SDB Contact Name
Title
SDB Company Name
Address
City, State, Zip]

Dear [SDB Contact Name]:

This letter serves as confirmation of the intent of [potential Offeror] to utilize [Small Diverse Business (SDB)] on RFP 20140401, *Supply Chain Enhancements* issued by the Pennsylvania Liquor Control Board.

If [potential Offeror] is the successful vendor, [SDB] shall provide [identify the specific work, goods or services the SDB will perform, and the specific timeframe during the term of the contract and any option/renewal periods when the work, goods or services will be performed or provided].

These services represent [identify fixed numerical percentage commitment] of the total cost in the [potential Offeror's] cost submittal for the initial term of the contract. Dependent on final negotiated contract pricing and actual contract usage or volume, it is expected that [SDB] will receive an estimated [identify associated estimated dollar value that the fixed percentage commitment represents] during the initial contract term.

[SDB] represents that it meets the small diverse business requirements set forth in the RFP and all required documentation has been provided to [potential Offeror] for its SDB submission.

We look forward to the opportunity to serve the Pennsylvania Liquor Control Board on this project. If you have any questions concerning our small diverse business commitment, please feel free to contact me at the number below.

Sincerely,   Acknowledged,

Potential Offeror Name   SDB Name
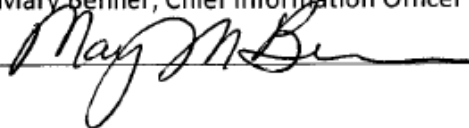
Title   Title

Company   Company

Phone number   Phone number

APPENDIX J, Page 1 of 1

APPENDIX K

CHANGE MANAGEMENT POLICY

Information Technology Policy

Office of Information Technology Services
Chief Information Office

Subject: Change Management	*Number:* 2.0.0
Date: July 3, 2012	*By Direction Of:* Mary Benner, Chief Information Officer

This change management policy provides guidance and information on how the Office of Information Technology Services will process change requests. The policy also outlines the steps required prior to submitting a change request for approval to the Change Advisory Board (CAB).

1. **Scope.** This policy applies to all individuals (e.g., employees, contractors, etc.) working or doing business with the Liquor Control Board (LCB)

2. **Definitions:**

   a. **Change Management (CM).** Change Management is an IT service management discipline that encompasses application, infrastructure, and process changes. The objective of CM is to ensure that standardized methods and procedures are used for efficient and prompt handling of all changes. Standardized methods and procedures minimize the number and impact of all related incidents upon service. CM will ensure standardized methods, processes, and procedures are used for all changes which will facilitate efficient and prompt handling of these changes, while maintaining the proper balance between the need for change and the potential detrimental impact of changes.

   b. **Request for Change (RFC).** Formerly known as Activity Logs (AL). RFCs must be submitted by PLCB OITS staff for changes to the User Acceptance Testing (UAT) environment and PLCB production systems. All RFC's will be reviewed by the Change Manager and those targeting Production systems, approved by the Change Advisory Board (CAB).

   c. **Infrastructure.** This is inclusive of all physical equipment and appliance configurations. Examples include server, handheld scanners, routers, firewall rules, network settings etc.

   d. **Application.** Computer software designed to help the user to perform specific tasks.

e. **Process Changes.** This type of change request covers modifications to the business process, information technology policies and procedures.

3. **Classification and Submittal Policy.**

   a. **Classification.**

      i. **Emergency.** Any type of change to the production environment that requires immediate attention having **"no known work-around".** Emergency Approvals will follow the procedure as outlined in Appendix One at the end of this document. To eliminate any conflicts of interest and in keeping with the segregation of duties policy, *only* the three following individuals have the authority to authorize emergency requests:
         1. The CIO
         2. The Chief of Enterprise Integration and Quality Assurance
         3. The Database Manager (only if all attempts to reach the others have failed. Please see Emergency Change Request Procedure in Appendix One below)

      Special Note: Only PLCB employees can make emergency requests, no exceptions.

      ii. **Normal.** The addition, modification or removal of anything that could have an effect on IT services. This applies to enhancements, projects, or non-routine changes. These will go through the normal change control process. ***Special Note: Only PLCB employees can make normal requests, no exceptions.***

      iii. **Standard.** A change request that is low risk, relatively common and follows a predefined Procedure or Work Instruction. Standard requests will be submitted to the Change Manager for approval and follow the procedure as outlined in Appendix Two. Standard requests do not need to go through the Change Control Board but must be accounted for. ***Special Note: Only PLCB employees can make standard requests, no exceptions.***

   b. **Submittal.** All change requests must be submitted by a PLCB staff member. For RFC's proposed for production, the following issues must be addressed in the RFC prior to CAB review. The presenter should be prepared for the following questions or documentation delivery.

      i. Are new objects involved in the change?
      ii. When can the migration be started and completed?
      iii. Does the migration require a server bounce for it to function?
      iv. Are there any jobs or processes that need to be put on hold for migration?
      v. If this is a data script, can it be executed during normal working hours?

      vi. Does backup of current data need to be completed in order to prepare for a back out, or is the process reversible without back up?

      vii. Specify the tables that need to be backed up if any.

      viii. The name of the contact, and their contact information should be on the RFC for possible contact during the scheduled migration window.

      ix. Any deployment documentation and its location must be specified.

      x. If PLCB owned code, or data is being changed, then a peer reviewer must be in the deployment documentation.

      xi. All deployment documentation needs a management reviewer entered.

      xii. Back out instructions are needed for all changes either in the deployment documentation or the RFC.

      xiii. Developers should include a sanity check for the deployment to determine whether or not the change was successful.

      xiv. Some statement should be made as to the risk level, urgency of the request, and the impact that it may have on other systems.

    c. **Closing a Request for Change:** If a back out is required during migration, the RFC must be re-submitted to the CAB for scheduling or seek an emergency approval. For process improvement a Post Implementation Review will be briefly held to determine the nature of the shortcoming.

4. **Procedures.**

    a. **Timeline.** All requests for changes to IT environment, except emergency fixes, will adhere to the following timelines for approval. Failure to meet these deadlines will result in the change request being delayed. The detailed process flow is written into the **Change Management Procedure CM 2.0.0**

      i. **Wednesday by 5:00pm (EST).** This is the deadline for all non-emergency change requests to be submitted to the Change Manager (CM). At this point the CM and Quality Assurance Manager (QAM) will review the change requests and the associated documentation including the deployment and test documentation.

      ii. **Thursday at 10:30am (EST).** The will be a standing weekly technical review meeting of all change requests that were submitted for approval. If a change request has been submitted, the PLCB employee that submitted the request must be present to discuss the proposed change and answer any questions. Note that the PLCB employee may bring along any technical resources to assist as needed.

      iii. **Friday at 10:30am (EST).** The Change Advisory Board (CAB) will meet to review and approve / disapprove the weekly Standard change requests.

5. **Members and Roles.**
   a. **Change Advisory Board (CAB) Roles:** The Change Advisory Board will decide what changes will move to production. **Members:** CIO, Assistant CIO, OITS Division Chiefs, OITS Application Architect.
   b. **Change Manager Role:** Is ultimately responsible for the entire change management process from request to approval and will manage the process documenting and mitigating the risk of moving, adding, removing, deleting, modifying, or supplementing infrastructure or software changes within the LCB effectively classifying all change requests. The Change Manager will also make recommendations to the CAB on the approval/disapproval of each Request for Change based on information collected from the requestors.
   c. **Quality Assurance Manager Role:** Will review documentation related to testing and implementation of proposed changes prior to submittal to the CAB for approval.
   d. **PLCB OITS Staff Role:** Will submit change requests, and participate in the weekly technical review meeting of submitted requests providing assistance and feedback.
   e. **Implementers:** Any member(s) of a functionary team responsible for performing the type of work to properly service the request. Simply, the appropriate team or team member who completes the work of the request.

Appendix One

Emergency Change Request Procedure

1. Submit a request for change via email.
   a. In the **To:** must be the **CIO** and the **Chief of Enterprise Integration and Quality Assurance.**
   b. In the CC: enter **LB-OITS EMG Change Request** distribution list.
   c. The body of the message must contain the following:
      i. A brief description of the issue
      ii. What is the emergency request it for?
      iii. What will the requested emergency change do?
      iv. You may include other information helpful to the understanding of the emergency request but please keep it brief and to the point.
   d. If there is no response to the request in 30 minutes, an attempt should be made to reach the **CIO** and or the **Chief of Enterprise Integration and Quality Assurance** <u>by phone</u> for confirmation/ authorization. If a response is not received after one hour, the request can be approved by the Database Manager.
   e. Once the emergency request has been approved, the requester must contact the implementation team(s) preferably by phone, in order to schedule the request. Keep in mind, that it is the responsibility of the Requester to effectively coordinate all communications regarding the requirements of the request. That is to say, it is the requester's job to see that all parties involved know about the request. The telephone numbers for the following groups are found in the Help Desk Procedures for the following groups:

      i. **Database Administration** ▬▬▬▬▬▬
      ii. **Server Support** ▬▬▬▬▬▬
      iii. **Network Administration** ▬▬▬▬▬▬
      iv. **Computer Operations** ▬▬▬▬▬▬▬

      ▬▬▬▬▬▬▬

      ▬▬▬▬▬▬▬▬

   f. All completed testing documentation and paperwork must be delivered within 48 hours of the requested emergency change request.
   g. When an emergency request has been completed successfully, the Implementer must email the requester and copy the Chief of Enterprise Integration and Quality Assurance, as well as the LB-OITS EMG Change Request distribution list, letting each know the work has been completed.

Appendix Two

Standard Change Request Procedure

1. Submit a request for change via email.
   a. In the **To:** field address the request to **LB-OITS Quality Assurance** and include the following:
      i. A brief description of the change
      ii. What impact will the change have
      iii. If it is a script to fix data, indicate if the problem is caused by a system issue or by an end user not following procedure
   b. Once approval has been received from the change manager,(or a member of the LB-OITS Quality Assurance group) the approved change request is forwarded to the Implementers along with the necessary instructions and attachments.
   c. When the change has been completed, the Implementers who made the change will forward the message back to the requester, and the LB-OITS Quality Assurance resource account, indicating that it is complete.

APPENDIX L

IBMS AND ORCO INFRASTRUCTURE

IBMS and ORCO Infrastructure

B-1. Background

The PLCB currently runs its Oracle financial, retail and point-of-service applications on the following combinations of hardware and software:

- IBM p-series physical servers split into multiple logical partitions (LPARs)[1] and running AIX 7.1, 6.1 or 5.3.
- VMware based virtual machines running SuSE Linux Enterprise Server 11, RedHat Enterprise Linux 5, Windows Server Standard, Enterprise or Datacenter editions 2003/2008
- A small number of physical servers running any of the above operating systems.
- Multiple Storage Area Network (SAN) disk storage, including IBM DS8300/6800/4000/5000 series SANs. The DS3000/4000/5000 series SANs perform some wide area network, disk to disk replication.

The production and test servers are located at the Data PowerHouse, run by the Commonwealth's outsourced systems management vendor, Unisys.

The DS4300's are located at the PLCB's distribution centers but are noted here because the target of their data replication is a DS5100 at 1400A Cameron St. This needs to be taken into consideration during the Planning/Initiation and Design phases as well a replacement implemented as part of this project.

The PLCB also owns two IBM p-series servers at the Commonwealth's Internet DMZ located at the EDC, in an area known as CoLocation. These servers run the production and one of the test copies of the Oracle eBusiness application used for some externally facing application. The e-Commerce servers are located at the Commonwealth's EDC, but in an area known as Managed Services Lite (MSL) and are not owned by the PLCB.

With the exception of the servers located at the EDC, the servers are not directly accessible from the Internet.

In addition to the systems at the Data PowerHouse, the PLCB has a disaster recovery (D/R) installation at 1400A Cameron St. Oracle Data Guard is used to replicate the production databases to IBM p-series servers at the D/R site. AIX/Linux rsync is used to replicate other filesystems to the IBM p-series servers at the D/R site.

The training copy of the Oracle applications is also housed at 1400A Cameron St. Development copies are housed at 1400A Cameron St and the NWOB.

---

[1] For the purposes of this appendix, *server* refers to an *LPAR* on a *physical server*.

B-1.1. Environments

The PLCB maintains the following environments that must be migrated for this project:

- Development – 2 copies. This is the technical environment for development of objects such as reports, interfaces, conversions, extensions/customizations and workflow.   Initial configurations are also performed here. This environment is used for unit testing and is located at the PLCB and at 1400A Cameron St.
- Integration Test – 1 copy.   This is the environment used to refine design and configuration.   Components are placed into this environment when they are ready for "string" testing, i.e. inter-component testing.   This environment is located at the PLCB and at 1400A Cameron St.
- User Acceptance Test – 2 copies. This environment is used for final testing and sign-off of components as well as load testing. This environment is located at the DPH. One of the two environments duplicates the full production configuration and is suitable for load testing.
- Training – 1 copy. This is the environment used for training of store and central office staff. In the event of a disaster, this copy would be shut down and its capacity added to the disaster recovery copy. This environment is located at the 1400A Cameron St.
- Production – 1 copy. Final production environment. Periodically "cloned" to all other environments for development and testing purposes. This environment is located at the DPH.
- Disaster recovery – 1 copy. This copy of production is kept up to date using Oracle DataGuard and AIX/Linux rsync. This copy is located at 1400A Cameron St.

B-1.2. Oracle environment naming conventions

Oracle environments are typically named as follows:

<Application><Environment><ServerSet><Series> where:

- <Application> is a single letter code for the application.
  - E – eBusiness Suite
  - H – Hyperion
  - R – RMS (RMS, REIM, ReSA, RPM, ARI, Allocations)
  - S – SIM
  - D – RDW
  - R – RIB
  - P – RPAS
  - B – BPEL
  - C – Oracle Retail Central Office
- <Environment> is a single letter code for the environment.

- o D – Development
- o W – Integration Test
- o A – UAT
- o P – Production
- <ServerSet> is a number that defines on which set of servers it exists. (See server naming conventions)
- <Series> is a number that indicates if there is more than one. For example, if there are two eBusiness applications on the same server set, the first one will be 1 (one) and the second will be 2 (two).

B-1.3. Oracle Tiers

Oracle applications, by their design, are two tier applications.

- The first tier is a combination web server and application server. By convention, these are called application servers.
- The second tier is a database server. However, unlike typical database servers, Oracle's ERP database servers also run significant portions of the applications including workflow, interfaces, some business logic and almost all batch processing.

Some of Oracle's applications were built by Oracle. Some, especially the retail applications, were recently purchased from a variety of vendors. Because of this, there are exceptions to almost every rule, especially within the retail applications.

B-1.4. Server naming conventions

Servers are typically named as follows:

lb<Application><Environment><Type><ServerSet><Series> where:

- "lb" is a constant required by the Office of Administration for PLCB servers.
- <Application> is a short letter code for the application:
  - o EBS – eBusiness Suite
  - o HYP – Hyperion
  - o RMS – RMS (RMS, REIM, ReSA, RPM, ARI, Allocations)
  - o SIM – SIM
  - o RDW – RDW
  - o INT – RIB (for instances of RIB where they do not reside on a server with an application)
  - o PLN – RPAS
  - o BPEL – BPEL
  - o APP – Appworx
  - o SSO – Single Oracle application logon service

- o ORCO – Oracle Retail Central Office
  - o NFS – Network File System (Common mount point for shared data within an environment)
- • <Environment> is a short letter code for the environment:
  - o DEV – Development
  - o DEV – Integration Test
  - o UAT – UAT
  - o PRD – Production
- • <Type> is either:
  - o APP – for an application server
  - o DB – for a database server. Some servers have both the application and database on them and so are named as database servers. Examples include:
    - – BPEL
    - – APPWORX
    - – RPAS
- • <ServerSet> is a number that defines on which set of servers it exists. For example, all of the servers that provide one of the UAT environments have a "9" in this position. This number makes it easy to link an Oracle environment to the servers on which it resides.
- • <Series> is a number that indicates if there is more than one. For example, if there are two (2) eBusiness application servers, on the same server set, the first one will be 1 (one) and the second will be 2 (two).

Other servers and environments typically follow these conventions although there are exceptions.

B-2. Migration Order

It is the responsibility of the selected Contractor to determine the strategy and best migration order for the IBMS and ORCO environments. However, there are a number of key points that should be considered:

1. IBMS and ORCO must be migrated from the DPH by 12/31/2014 as per the Compute Services RFP. The DPH houses only production and user acceptance test IBMS and ORCO servers.
2. The Compute Services RFP does not document when systems must be migrated from 1400A Cameron St. For the purposes of this RFP, the Offeror should assume that it will be 30 months from the date of execution of the Compute Services contract.
3. Systems must be migrated from the Northwest Office Building by 30 months from the date of execution of the Compute Services contract as per the Compute Services RFP.
4. The PLCB's production IBMS systems are used whenever the stores are open. They cannot be unavailable for extended periods of time. Migration strategies need to minimize

downtime and may need to consider such things as database and file synchronization, parallel updates, replication, and holiday weekends where stores are closed such as Martin Luther King day, Presidents' Day, Memorial Day and Labor Day.

5. Production is located at the DPH but must be migrated after enough non-production environments are migrated to develop and test the migration methodology.

6. Not all non-production environments need to be migrated before production. Only sufficient environments to fully test the process and establish timelines.

7. The PLCB periodically "refreshes" copies of production with the production system itself. Due to the nature of the IBMS and ORCO applications, this involves copying the applications and databases from production in their entirety. Copies of the PLCB's documentation are available in [TBD].

8. It may be easier to create the remaining non-production environments, including the training environment, from production once production has been migrated to the Compute Services initiative.

9. Non-IBMS applications, databases or services on servers that connect to IBMS services may need to have configuration changes such as database connection strings or hostnames when their "partner" IBMS application is moved to the Compute Services initiative.

B-3.   Network Load Balancing

The PLCB uses a load balancer from Cisco on its EBS and SIM application servers, as well as for CUPS and FTP. No other application servers are load balanced.

The Oracle SIM application servers are load balanced through a Cisco ACE Module using least connections as its load balancing algorithm. When a client connection is load balanced to one of the application servers, it remains "stuck" to that server by source IP address until the client has been idle for 120 minutes.

The internal Oracle EBS application servers are load balanced through a Cisco ACE Module using round robin as its load balancing algorithm. Client connections are SSL encrypted, the SSL encryption terminates at the ACE Module. When a client connection is load balanced to one of the application servers, it remains "stuck" to that server by both source and destination IP address until the client has been Idle for 480 minutes.

The external, Internet facing Oracle EBS application servers are load balanced through equipment at the Commonwealth Technology Center. This equipment is managed by the Office of Administration. It is set up to use round robin as its load balancing algorithm. Client connections are SSL encrypted, the SSL encryption terminates at the load balancer. When a client connection is load balanced to one of the application servers, it remains "stuck" to that server by both source and destination IP address until the client has been idle for 480 minutes.

The Common Unix Printing System, CUPS, is load balanced through a Cisco ACE Module using an active/passive load balancing method. Printouts go to a common URL in each environment. All traffic for a particular environment will go to the active server, unless it is unavailable, in which it would be switched to the passive server by the load balancer.

The external FTP servers are load balanced through equipment at the Commonwealth Technology Center. This equipment is managed by the Office of Administration. It is set up using a manual primary/secondary load balancing method. All traffic will get routed to the primary server. If this server becomes unavailable, the load balancer traffic must be manually switched to the secondary server.

B-4.   High Availability

The PLCB's applications require high availability of the underlying hardware and operating system software. The PLCB has rarely experienced failures of either one.

To provide high availability at low cost, the PLCB has employed a number of facilities:

- IBM Live Partition Mobility and all prerequisites to allow the PLCB to manually load balance and manually move running IBM LPARs between frames.
- VMWare clusters (vMotion, Distributed Resource Scheduling, and Storage vMotion) which allow the PLCB to automatically load balance and automatically move running virtual machines between hosts.

This architecture has allowed the PLCB to enjoy high availability without complexity or impact on its applications.

In addition, the PLCB uses:

- IBM FlashCopy of all disks to mitigate the effects of user error on operations.   FlashCopies are performed every morning at 6:00am, including during the Sunday maintenance window. FlashCopies allow the PLCB to restore its disks quickly.
- VMWare Snapshots when upgrading or making major application changes. Snapshots allow changes to be rolled back quickly.   Snapshots have an impact on performance and so are only used when necessary.

The PLCB does not use Oracle Real Application Clusters (RAC), IBM HA (formerly IBM High Availability Cluster Multiprocessing) or Microsoft Windows clusters.

B-5.   Other Information
B-5.1.   Non-production Stores for Testing

The PLCB maintains at least one and sometimes more non-production stores within the Northwest Office Building for testing point-of-service interfaces and connectivity to IBMS environments.

These non-production stores contain, at minimum:
- One (1) or more cash registers
- One (1) store controller
- One (1) or more business PCs. The business PC is currently a Microsoft Windows/XP system with, at minimum, the software listed in the table below.:
- One (1) or more Motorola (formerly Symbol) handheld scanners used for receiving and inventory.
- One (1) or more printers.

B-6.   Printing

Most of the IBMS servers use the Common Unix Printing System (CUPS) to communicate with the printers, especially the printers in the 600+ stores. (However, there are a small number of printers within EBS that still use Line Printer Remote protocol/ Line Printer Daemon protocol (LPR/LPD).)   Each environment contains a pair of CUPS logical servers with the DNS hostname:

LBCUPS<ServerSet><Series>.

Where

- <ServerSet> is a number that defines on which set of servers it exists.   For example, all of the servers that provide one of the UAT environments have a "9" in this position. This number makes it easy to link an Oracle environment to the servers on which it resides.
- <Series> is a number that indicates if there is more than one. For example, if there are two (2) eBusiness application servers, on the same server set, the first one will be 1 (one) and the second will be 2 (two).

The logical CUPS servers are co-located on other application servers.

B-7. Authentication

All of the IBMS servers use the Commonwealth's Active Directory for authentication. Authorization is done via the normal operating system files. The PLCB has developed Kerberos configurations to provide Active Directory authentication.

B-8. Cloning

All non-production systems are periodically copied or "cloned" from production using various mechanisms. The copies include:

- The application code
- The databases.

Note that due to limitations of the Oracle applications, all development , integration and UAT environments contain a 100% copy of production data.

While the PLCB will provide the documentation in its possesion on the cloning process after the contract is awarded, the vendor is encouraged to use its own cloning tools or processes if they are more efficient, faster or require less staff to execute.

B-9. Crystal Reports and SQL/Server

While most IBMS reports are written using Oracle's BI Publisher application, some are written using Crystal Reports. In addition, some IBMS data is extracted into Microsoft SQL/Server databases where it then used by other applicatons.

There is a set of one SQL/Server database instance, one Crystal Reports server and one ASP.NET front end server per IBMS environment. When an IBMS environment moves to the Compute Services initiative, the database connection strings used by Crystal Reports, SQL/Server and any other applications must be changed.

APPENDIX M

TECHNICAL LANDSCAPE

Environment Name (production or (copy of production)						prd 05		dev 25		dev 35		dev 45		uat 85		uat 95		trn 65		dr 01		non-prd		
Physical Location (unless otherwise noted)						DPH		PLCB		PLCB		PLCB		DPH		DPH		PLCB		PLCB		Varies		
Application	Application or database server	Operating System	Physical or Virtual	Total # of Servers	Total Storage (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs	Memory (GB)	Disk Space (GB)
BPEL	app+db	AIX	Virtual	8	3,640	3	16	2	12	2	12	2	12	2	12	3	16	2	12	2	8			455
EBS - 1 (int)	app	AIX	Virtual	8	992	8	11	3	9	3	9	3	9	3	9	4	11	3	9	2	6			124
EBS - 2 (int)	app	AIX	Virtual	2	248	4	11									4	11							124
EBS - 1 (ext)	app	AIX	Virtual	2	248	4	11									4	11							124
EBS -2 (ext)	app	AIX	Virtual	2	248	4	11									4	11							124
EBS	db	AIX	Virtual	8	10,400	8	65	6	43	6	43	6	43	6	43	8	58	6	43	4	29			1,300
RIB	app+db	AIX	Virtual	8	3,528	3	17	3	12	3	12	3	12	3	12	3	17	3	12	2	9			441
RMS	app	AIX	Virtual	8	936	2	20	2	12	2	12	2	12	2	12	2	15	2	12	1	6			117
RMS	db	AIX	Virtual	8	16,776	10	27	7	20	7	20	7	20	7	20	10	27	7	20	5	14			2,097
S (long term archiv	db	AIX	Virtual	1	908	2	4																	908
SIM - 1	app	AIX	Virtual	8	648	2	11	2	5	2	5	2	5	2	5	2	7	2	5	1	4			81
SIM - 2	app	AIX	Virtual	2	166	2	11									2	7							83
SIM	db	AIX	Virtual	8	4,536	5	24	4	18	4	18	4	18	4	18	5	24	4	18	3	12			567
cross envir.	nfs	AIX	Virtual	3	6,000	2	2													1	3	1	1	2,000
OEM	app+db	AIX	Virtual	2	256	2	16															1	16	128
Appworx	app+db	RedHat Linux	Virtual	8	4,000	3	6	2	4	2	4	2	4	2	4	3	6	2	4	2	3			500
Hyperion	app+db	RedHat Linux	Virtual	2	488	7	22									7	22							244
RDF	app	RedHat Linux	Virtual	8	3,520	4	10	3	8	3	8	3	8	3	8	4	10	3	8	2	6			440
RDW	app+db	RedHat Linux	Virtual	7	6,448	8	25	2	5	2	5	2	5	2	5	8	25	2	5					524
SSO	app+db	RedHat Linux	Virtual	8	24,000	2	4	2	3	2	3	2	3	2	3	2	4	2	3	1	2			3,000
Within envir	nfs	RedHat Linux	Virtual	8	2,800	2	4	2	3	2	3	2	3	2	3	2	4	2	3	1	2			350
ORCO	app	SuSE Linux	Virtual	8	960	4	14	3	10	3	10	3	10	3	10	4	14	3	10	4	14			120
ORCO	db	SuSE Linux	Virtual	8	10,800	4	25	3	18	3	18	3	18	3	18	4	25	3	18	4	25			1,350
Physical Location (unless otherwise noted)						EDC		PLCB		PLCB		PLCB		PLCB		EDC		PLCB		PLCB		Varies		
e-Comn - web 1	app	SuSE Linux	Virtual	3	120	2	6	2	6							2	6							40
e-Comn - web 2	app	SuSE Linux	Virtual	3	120	2	6	2	6							2	6							40
e-Comn - app 1	app	SuSE Linux	Virtual	3	105	3	10	3	10							3	10							35
e-Comn - app 2	app	SuSE Linux	Virtual	3	105	3	10	3	10							3	10							35
e-Comn - Srch 1	app	SuSE Linux	Virtual	3	66	2	12	2	12							2	12							22
e-Comn - Srch 2	app	SuSE Linux	Virtual	3	66	2	12	2	12							2	12							22
e-Comn - DB 1	app	SuSE Linux	Virtual	3	414	2	8	2	8															138
e-Comn - Mgmt	app	SuSE Linux	Virtual	1	28	1	2																	28
Physical Location (unless otherwise noted)						PLCB		PLCB		PLCB		PLCB		PLCB		PLCB		PLCB		PLCB		Varies		
Payment switch	app+db	SuSE Linux	Virtual	3	678	2	8	2	6							2	6							226
SLEPOS Admin	app	SuSE Linux	Virtual	8	256	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4			32
HP Insight Mgr	app	SuSE Linux	Virtual	2	190	2	4													2	4			95
Manugistics	app+db	Windows	Virtual	4	1,600	4	8	4	8							4	8			4	8			400
SQL/Server	db	Windows	Virtual	4	1,600	4	8	4	8							4	8			4	8			400
Crystal Reports	app	Windows	Virtual	5	420	2	4	2	4	2	4	2	4			2	4							84
ASP.Net	app	Windows	Virtual	5	270	2	4	2	4	2	4	2	4			2	4							54
Sharepoint	web	Windows	Virtual	2	128	2	16	2	8															64
Sharepoint	app	Windows	Virtual	2	128	2	8	2	8															64
m Foundation Ser	app	Windows	Physical	1	40	4	4															Pg 1 of 5		40

Application	Application or database server	Operating System	Physical or Virtual	Total # of Servers	Total Storage (GB)	prd 05 DPH Virtual CPUs or Cores	Memory (GB)	dev 25 PLCB Virtual CPUs or Cores	Memory (GB)	dev 35 PLCB Virtual CPUs or Cores	Memory (GB)	dev 45 PLCB Virtual CPUs or Cores	Memory (GB)	uat 85 DPH Virtual CPUs or Cores	Memory (GB)	uat 95 DPH Virtual CPUs or Cores	Memory (GB)	trn 65 PLCB Virtual CPUs or Cores	Memory (GB)	dr 01 PLCB Virtual CPUs or Cores	Memory (GB)	non-prd Varies Virtual CPUs	Memory (GB)	Disk Space (GB)
DNA	app	Windows	Virtual	1	40	1	4																	
AVA	app	Windows	Virtual	2	40	1	2																	
BAC	app	Windows	Virtual	1	36	4	4																	
COEV	app	Windows	Virtual	1	40															2	4			
Crystal Reports	web	Windows	Virtual	1	38	2	3																	
Cisco Mgr	app	Windows	Virtual	1	40	2	2																	
IBM Director (POS)	app	Windows	Virtual	2	47	2	2																	
IBM Director	app	Windows	Physical	1	300	4	4																	
DR Backup	app	Windows	Physical	1																				
Dynamics CRM	app	Windows	Virtual	3	120	4	8	4	4							2	8							
Dynamics CRM	web	Windows	Virtual	4	210	2	8									4	16							
ePO	app	Windows	Virtual	2	50	2	1																	
FileNet Web	web	Windows	Virtual	1	20											2	4							
FTP	web	Windows	Virtual	2	120	2	2									1	1							
Firewall Mgr	app	Windows	Virtual	2	300	2	4																	
Colocation	web	Windows	Physical	4	1,946	4	4																	
Fax	app	Windows	Physical	1	40	1	1																	
Load Test	app	Windows	Physical	4	1,100	2	8																	
MQ	app	Windows	Physical	1	130	4	4																	
NBOPSC	app	Windows	Virtual	1	20	2	2																	
Warehouse	app	Windows	Physical	3	1,392	4	4																	
Print Srv	app	Windows	Virtual	1	40	2	4																	
QA Test	app	Windows	Virtual	1	20											2	4							
Remote Desktop	app	Windows	Virtual	2	60	8	20																	
Terminal Service	app	Windows	Virtual	3	122	10	10																	
SCCM	app	Windows	Physical	1	900	8	14																	
SECTW	app	Windows	Virtual	1	60	2	4																	
IME	app	Windows	Virtual	1	25	2	2																	
SSO	app	Windows	Virtual	1	20	2	4																	
SP TFS	app	Windows	Virtual	1	60	4	8																	
File Server	file	Windows	Physical	1	6,160	8	36																	
UCM	db	Windows	Virtual	1	25	2	2																	
UPK	app	Windows	Physical	1	68	8	16																	
VMWare	app	Windows	Physical	1	464	4	4																	
VM Backup	app	Windows	Physical	2	2,000	8	4																	
WAN	app	Windows	Virtual	3	50	2	2																	
What's Up Gold	app	Windows	Virtual	1	25	4	8																	
WMS (RIMS)	wms	AIX	Physical	1	80	2	4																	80
Crystal Reports	app	Windows	Physical	1	75	2	4																	75
WMS (RIMS)	wms	AIX	Physical	1	80	2	4																	80
Crystal Reports	app	Windows	Physical	1	75	2	4																	75
WMS (RIMS)	wms	AIX	Physical	1	80	2	2																	80
Crystal Reports	app	Windows	Physical	1	75	2	4																	75
WMS (RIMS)	wms	AIX	Virtual	1	80																2	4	pg 2 of 5	80

Environment Name (production or (copy of production)						prd 05		dev 25		dev 35		dev 45		uat 85		uat 95		trn 65		dr 01		non-prd		
Physical Location (unless otherwise noted)						DPH		PLCB		PLCB		PLCB		DPH		DPH		PLCB		PLCB		Varies		
Application	Application or database server	Operating System	Physical or Virtual	Total # of Servers	Total Storage (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs or Cores	Memory (GB)	Virtual CPUs	Memory (GB)	Disk Space (GB)
Crystal Reports	app	Windows	Physical	1	75															2	4			75
Total				262	125,628																			

APPENDIX M

Major database	Database Management System	Total size of all databases (GB)	Database Size in GB (each)
BPEL	Oracle 11g	1,659	207
EBS	Oracle 11g	7,174	897
RIB	Oracle 11g	112	14
RMS	Oracle 11g	11,392	1,424
SIM	Oracle 11g	1,869	234
Appworx	Oracle 11g	768	96
Hyperion	Oracle 11g (not inc. ESSBase)	13	6
RDW	Oracle 11g	12,556	1,794
SSO	Oracle 11g	80	10
ORCO	Oracle 11g	7,310	914
Payment switch	Oracle 10g R2	198	66
SQL/Server	SQL/Server 2008	468	117
e-Commerce	DB/2	160	80
Total		43,758	5,858

Appendix M

Location	Count	Data Circuits	Routers	Switches	Wireless Access Points
Stores	612	612	612	618	813
Warehouses	3	6	6	28	37
Regional Offices	12	12	12	28	5
Central Office	2	10	13	61	21
Total	629	640	643	735	876

Network Management Servers & Appliances					
	Count	Type	CPUs	Memory (GB)	Disk (GB)
WhatsUp Gold	1	Virt. Windows Server	4	8	25
CatTools (Network Management)	1	Virt. Windows Server	2	2	40
Cisco Prime (Network Management)	1	Virt. Linux	4	8	200
Cisco Wireless LAN Controler	4	Appliance			
Cisco Mobility Svcs Engine	1	Appliance			
Checkpoint Firewall Management Stations	2	Virt. Windows Server	2	4	160
Checkpoint Firewalls	4	Linux	4	4	55
Total	14		16	26	480

Appendix M

APPENDIX N

APPLICATION INVENTORY

APPLICATION INVENTORY

Application Name or Acronym	Business Unit(s)	Annual Transaction Volumes	Number of Users	Application Age	Application Category
Advisory Opinion Maintenance	Legal	500 to 1,000	< 16	4 to 8 years	Custom Built
Android Mobile App	Retail Sales, Citizens	500,001 to 1,000,000	> 5000 users	< 4 years	Custom Built
Bulk Purchase Order System - Intranet	Product Selection	500 to 1,000	< 16	< 4 years	Custom Built
Case Information Access, Search & Hearing Schedule System	Licensing; ALJ, Legal, HR, LCE	10,001 to 50,000	501 to 1500 users	< 4 years	Custom Built
Cost Center Information Access & Search System - CCIAS	Licensing; HR	3,001 to 5,000	101 to 250 users	< 4 years	Custom Built
Designated Healthcare Providers	HR	N/A	501 to 1500 users	4 to 8 years	Custom Built
eCommerce	Marketing	50,001 to 100,000	> 5000 users	9 to 15 years	Commercial off-the-shelf
Ecommerce Maintenance (online catalog)	Marketing	10,001 to 50,000	< 16	9 to 15 years	Custom Built
EDU 08 Update	Alcohol Education	10,001 to 50,000	1501 to 5000 users	4 to 8 years	Custom Built

APPENDIX N

EDU County Resources	Alcohol Education	10,001 to 50,000	1501 to 5000 users	4 to 8 years	Custom Built
EDU Event Registration- (Internet)	Alcohol Education/RAMP, Public	10,001 to 50,000	1501 to 5000 users	4 to 8 years	Custom Built
EDU Event Tracking	Alcohol Education/RAMP, Public	3,001 to 5,000	< 16	4 to 8 years	Custom Built
EDU Materials - (Internet)	Alcohol Education/RAMP, Public	3,001 to 5,000	1501 to 5000 users	4 to 8 years	Custom Built
EDU Materials Maintenance	Alcohol Education	3,001 to 5,000	< 16	4 to 8 years	Custom Built
Electronic Store Journal	Store Operations, Financials	500 to 1,000	< 16	4 to 8 years	Commercial off-the-shelf
E-Licensing System - Internet	Licensing	10,001 to 50,000	> 5000 users	4 to 8 years	Custom Built
Employee Information Access & Search Systems - EIAS	Licensing; HR	10,001 to 50,000	101 to 250 users	< 4 years	Custom Built
ERP Reporting	All	N/A	101 to 250 users	4 to 8 years	Commercial off-the-shelf
FileNet Imaging System (Licensing/Chief Counsel/ALJ)	Licensing, ALJ, Legal, LCE	10,001 to 50,000	501 to 1500 users	< 4 years	Custom Built
Fraud and Abuse Management System - Intranet	EEO	3,001 to 5,000	< 16	< 4 years	Custom Built

APPENDIX N

Gift Card Balance Lookup - (Internet)	Product Mgmt/Store Operations, Citizens, Retail Sales	50,001 to 100,000	> 5000 users	< 4 years	Custom Built
Higher Education - (Internet)	Alcohol Education, Citizens	3,001 to 5,000	< 16	< 4 years	Custom Built
IBMS	Agency wide	> 5,000,000	1501 to 5000 users	4 to 8 years	Commercial off-the-shelf
Investigations Report/Query Request/Daily Assignment Systems	Licensing	5,001 to 10,000	101 to 250 users	< 4 years	Custom Built
iPhone Mobile App	Retail Sales, Citizens	500,001 to 1,000,000	> 5000 users	< 4 years	Custom Built
Legal Search	Legal	N/A	> 5000 users	4 to 8 years	Custom Built
Licensee Information Access, Search and Remittance System - LIAS	Licensing, ALJ, Legal, LCE	10,001 to 50,000	501 to 1500 users	< 4 years	Custom Built
Licensing Case Management	Licensing; ALJ, Legal, HR, LCE	10,001 to 50,000	501 to 1500 users	< 4 years	Custom Built
Mailing Labels	All	N/A	< 16	4 to 8 years	Custom Built
Manugistics	Planning & Procurement	50,001 to 100,000	16 to 50 users	9 to 15 years	Commercial off-the-shelf

APPENDIX N

Mobile App Barcode Resolver Web Service	Retail Sales, Citizens	500,001 to 1,000,000	> 5000 users	< 4 years	Custom Built
NABCA Interfaces	N/A	N/A	< 16	< 4 years	Custom Built
Online Reports/Reports Dictionary	All	N/A	51 to 100 users	< 4 years	Custom Built
Oracle Point of Sale	Retail Operations	> 5,000,000	> 5000 users	< 4 years	Commercial off-the-shelf
Oracle UCM	External Affairs, Citizens	1,000,001 to 5,000,000	> 5000 users	< 4 years	Commercial off-the-shelf
PA License Search System - Internet	Licensing; ALJ, Legal, LCE	100,001 to 500,000	> 5000 users	< 4 years	Custom Built
PLCB Parking	Records Management Division	3,001 to 5,000	16 to 50 users	4 to 8 years	Custom Built
Product Lookup - Intranet	Product Management	10,001 to 50,000	501 to 1500 users	4 to 8 years	Custom Built
RAMP (Internal)	Alcohol Education/RAMP, Licensees	3,001 to 5,000	< 16	4 to 8 years	Custom Built
RAMP Login/Registration	Alcohol Education/RAMP, Licensees	5,001 to 10,000	101 to 250 users	4 to 8 years	Custom Built
RAMP Owner Manager Mandate Tracking	Alcohol Education/RAMP, Licensees	10,001 to 50,000	> 5000 users	< 4 years	Custom Built
RAMP Seller Server Vendor Web Service	Alcohol Education/RAMP, Licensees	1,001 to 3,000	< 16	< 4 years	Custom Built

APPENDIX N

Registered Malt or Brewed Beverage Brands - (Internet)	Licensing, Licensees, Citizens	5,001 to 10,000	> 5000 users	4 to 8 years	Custom Built
Search Adjudications - (Internet)	ALJ/Legal, Licensees, Citizens	1,001 to 3,000	251 to 500 users	4 to 8 years	Custom Built
Store Hours Maintenance	Store Operations	101 to 500	< 16	4 to 8 years	Custom Built
Store Locator - (Internet)	Product Mgmt/Store Operations, Citizens, Retail Sales	50,001 to 100,000	> 5000 users	4 to 8 years	Custom Built
Store Portal - Barcode/Shelf Label	Store Operations & Retail Sales	50,001 to 100,000	> 5000 users	< 4 years	Custom Built
Store Time and Attendance	Store Operations; HR	1,000,001 to 5,000,000	501 to 1500 users	< 4 years	Custom Built
Tip Line - (Internet)	Equal Opportunities, Citizens	500 to 1,000	251 to 500 users	< 4 years	Custom Built
Vehicle Information Access and Search System	Support Services	3,001 to 5,000	< 16	< 4 years	Custom Built
Vendor SCC and Item Information - (Intranet)	Supply Chain	3,001 to 5,000	101 to 250 users	4 to 8 years	Custom Built
Wine Tasting Calendar - (Internet)	Product Mgmt, Citizens, Retail Sales	1,001 to 3,000	101 to 250 users	< 4 years	Custom Built
Wine Tasting Calendar - (Intranet)	Product Management	500 to 1,000	< 16	4 to 8 years	Custom Built

APPENDIX N

Application Location	Database Technology	Software Technologies	Recovery Time Objective	Disaster Recovery Plan Exists
PLCB	MS SQL Server	Classic ASP	1-day to 1-week	Yes
PLCB	SQL 2008	Java	1-day	No
PLCB	SQL 2008 R2	ASP.net	1-day to 1-week	Yes
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
PLCB	N/A	HTML	1-day to 1-week	Yes
Enterprise Data Center (EDC)	DB2	JAVA; J2EE ; JSP;	1-day	Yes
PLCB	MS SQL Server	Classic ASP	1-day to 1-week	Yes
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No

APPENDIX N

Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	MS SQL Server	COTS	1-day to 1-week	Yes
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
Data Power House (DPH)	Oracle 11g	BI - Publisher, Crystal Reports, PL/SQL	N/A	N/A
PLCB	SQL 2008 R2	Classic ASP, Visual Basic, FileNet Image Services	1-day to 1-week	Yes
PLCB	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No

APPENDIX N

PLCB	SQL 2008	Java/GWT	Greater than 3 weeks	No
Enterprise Data Center (EDC)	SQL 2008	HTML	Greater than 3 weeks	No
Data Power House (DPH)	Oracle 11g	Multiple	1-day	Yes
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
PLCB	SQL 2008	C	1-day	No
Enterprise Data Center (EDC)	MS SQL Server	Classic .ASP	N/A	No
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
PLCB	SQL 2008 R2	Classic ASP, Visual Basic, Filenet Image Services, ASP.net	1-day to 1-week	Yes
Data Power House (DPH)	SQL Server, Oracle	.Net, .ASP	N/A	N/A
PLCB	Oracle 9i	JAVA; J2EE; JSP	1-day	Yes

PLCB	SQL 2008	Java	1-day	No
Data Power House (DPH)	DB2	PL/SQL, SQL	1-day	No
Data Power House (DPH)	SQL Server	.Net, Crystal Reports	1-day	N/A
Data Power House (DPH)	Oracle 11g	Multiple	1-day	Yes
Enterprise Data Center (EDC)	SQL 2008	COTS	1-day	No
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
Data Power House (DPH)	DB2	VB, .ASP	1-day	Yes
PLCB	SQL 2008	ASP/ASP.NET	1-day	No
PLCB	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	SQL 2008	Java/GWT	1-day to 1-week	No
PLCB	SQL 2008	PHP	1-day	No

APPENDIX N

Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	SQL 2008	ASP/ASP.NET	1-day to 1-week	No
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	SQL 2008	Java/GWT	1-day	No
PLCB	SQL 2008 R2	ASP.net	1-day to 1-week	Yes
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	SQL 2008 R2	Classic ASP	1-day to 1-week	Yes
PLCB	SQL 2008	ASP/ASP.NET	1-day to 1-week	No
Enterprise Data Center (EDC)	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No
PLCB	SQL 2008	ASP/ASP.NET	Greater than 3 weeks	No

APPENDIX N

APPENDIX O

RETAIL OPERATIONS APPLICATIONS AT-A-GLANCE

Hyperion
Budgeting

Retail Data Warehouse

BI Publisher
Orders
Reports

RDF/RPAS
Planning/-
Replenishment

EBS
Financials
Order Entry
Portals

EBS Concurrent Manager
Job Scheduling

Appworx
Job Scheduling

SIM
Inventory
Receiving

BI Publisher
Orders
Reports

Integration between core IBMS applications

Manugistics
Planning/-
Replenishment

RIMS
Warehouse
Management

eCommerce
B2C

RIB
Msg processing

BPEL
Workflow
Msg processing

RMS
Item Master
Pricing
Replenishment
Inventory
Sales

SSO
Single Login for
EBS, RMS, SIM,
RDW

ORCO
Sales
Trans. Tracker
Order Entry

ORBO/ORPOS
Stores back office
Registers

BI Publisher
Reports

Core 24x7 Applications

Payment Switch
Credit/Debit
Cards

Gift Cards

Point-of-Sale
Core 12x7 applications

APPENDIX P

IBMS AND POS SOFTWARE VERSIONS

IBMS and POS Software Versions

Summary information

Product	Acronym	Version
E-Business	EBS	12.1.3
SOA	SOA	11.1.1.6
Single Sign-On		10.1.4.3
Retail Merchandising System	RMS	13.2.4
Retail Price Management	RPM	13.2.4
Allocation		13.2.4
Retail Invoice Matching	REIM	13.2.4
Store Inventory Management	SIM	13.2.4
Retail Integration Bus	RIB	13.2.4
Retail Predictive Application Server	RPAS	13.2
UC4 (Appworx) Applications Manager[1]	Appworx	V8
Retail Data Warehouse / OBIEE	RDW	
Hyperion EPM		11.1.2.2
Manugistics	Manugistics	7.1
POS Oracle Central Office Server	ORCO	13.1.1
POS Oracle Back Office Server	ORBO	13.1.1
POS Oracle Point of Service	ORPOS	13.1.1
POS Gift Cards	ISD gift card	V2/AIX
POS Payment Switch	ISD payment switch	Ver. 6.5
Oracle Application Server[2]	OAS	10.1.3
Oracle Weblogic Server[2]	Weblogic	11g
Oracle Database Enterprise Edition		11g R1
Oracle Database Enterprise Edition		11g R2
Oracle Data Guard (log shipping)		11g
Oracle Advanced Queues		11g

---

[1] Job scheduler (1 of 3). The others are EBS Concurrent Manager and Quartz
[2] A J2EE server used by some products

Product	Acronym	Version
Oracle Enterprise Service Bus		11g
Oracle Advanced Security (Tablespace Encryption)		11g
Oracle Database Enterprise Edition		9i[3]
Oracle Enterprise Manager	OEM	12c
Microsoft SQL/Server		2008
Crystal Reports / Business Objects	Crystal Reports	Crystal Report 2011/Business Intelligence 4.0
DB/2[4]		9
Websphere Commerce Professional Edition		7
Websphere Application Server		7
HP Business Availability Center	BAC	8
HP LoadRunner		
AAMVA EDI		
HP Systems Insight Manager		6.3
IP Switch's WhatsUpGold	WhatsUpGold	16
Novell SLEPOS Admin Server[5]		11
SuSE Linux Enterprise Point-of-Sale Branch Server		11
SuSE Linux Enterprise Point-of-Sale Device		11
Microsoft Sharepoint[6]		2010
Microsoft Team Foundation Server[7]	TFS	2010
BlackStrata LogStorm[8]		4.2
Tripwire Enterprise File Integrity Manager[8]		

:

---

[3] Required by Manugistics

[4] Used by Websphere Commerce Professional Edition

[5] Register and Branch server management

[6] Document and change control repository

[7] Code repository

[8] Payment Card Industry Data Security Specification compliance

Detailed Information for Some Products

Oracle E-Business 12.1.3

☐ Oracle Application Server J2EE to10.1.3.5
☐ Oracle Application Server Forms and Reports to 10.1.2.3
☐ Java Developer Kit (JDK) 6.0
☐ JRE 6.0
☐ OA Framework
☐Oracle Applications Manager
☐AD utilities
☐Database 11.2.0.3
       ☐ 11.2.0.3 Oracle Home
       ☐ Database upgrade from 10.2.0.3 to 11.2.0.3
       ☐ July 2012 CPU applied
       ☐ Column level compression
       ☐ Oracle Net listener
       ☐ New Context file for Oracle 11.2.0.3 Oracle Home

Oracle SOA 11g (11.1.1.6)

☐ Oracle Fusion Middleware 11.1.1.6
☐ Oracle Weblogic Server (64-bit) 10.3.6 (generic)
☐ Java Developer Kit (JDK) 6.0
☐ JRE 6.0
☐ RCU 11.1.1.6
☐Oracle SOA Suite 11.1.1.6 (generic)
☐ JDeveloper 11.1.1.6 (generic)
☐ Oracle Service Bus 11.1.1.6 (generic)
☐Database 11.2.0.3
       ✓ Fresh installation of 11.2.0.3 Oracle Home
       ✓ Fresh installation of 11.2.0.3 database
       ✓ July 2012 CPU applied
       ✓ Oracle Net listener

Oracle Single Sign-On (10.1.4.3)

    ✓ Oracle Application Server infrastructure Server 10.1.4.0.1
    ✓ Oracle Application Server Patchset 10.1.4.3
    ✓ Oracle Application Server Patchset 10.1.2.3
    ✓ Oracle Metadata Repository Creation Assistant 10.1.4.0.1
    ✓ Oracle Database 10.2.0.4
       ✓ Fresh installation of 10.2.0.1 Oracle Home

- ✓ Fresh installation of 10.2.0.1 database
- ✓ Upgrade Oracle Home to 10.2.0.4
- ✓ Upgrade database to 10.2.0.4
- ✓ Oracle Net listener

Retail Merchandising System (13.2.4)

- ✓ Oracle WebLogic Server 11g Release 1 (10.3.4)
- ✓ Java Developer Kit (JDK - 1.6.0+ 64 bit)
- ✓ Oracle BI Publisher 10g (10.1.3.4)
- ✓ Oracle SSO Server 10.1.4.3
- ✓ Oracle Internet Directory 10.1.4.3
- ✓ Oracle Web Tier (11.1.1.4)
- ✓ Oracle Forms Services 11g Release 1 (11.1.1.4)
- ✓ OEM Agent 12c
- ✓ Oracle Database (11.2.0.2)
  - o Database Patchset Update 11.2.0.2.7 (Includes CPU July 2012)
  - o RMAN 11.2.0.2

Retail Price Management (13.2.4)
- ✓ Oracle WebLogic Server 11g Release 1 (10.3.4)
- ✓ Java Developer Kit (JDK - 1.6.0+ 64 bit)
- ✓ Oracle SSO Server 10.1.4.3
- ✓ Oracle Internet Directory 10.1.4.3
- ✓ Oracle Web Tier (11.1.1.4)
- ✓ OEM Agent 12c

Allocation (13.2.4)
- ✓ Oracle WebLogic Server 11g Release 1 (10.3.4)
- ✓ Java Developer Kit (JDK - 1.6.0+ 32 bit)
- ✓ Oracle SSO Server 10.1.4.3
- ✓ Oracle Internet Directory 10.1.4.3
- ✓ Oracle Web Tier (11.1.1.4)
- ✓ OEM Agent 12c

Retail Invoice Matching (13.2.4)
- ✓ Oracle WebLogic Server 11g Release 1 (10.3.4)
- ✓ Java Developer Kit (JDK - 1.6.0+ 64 bit)
- ✓ Oracle SSO Server 10.1.4.3
- ✓ Oracle Internet Directory 10.1.4.3
- ✓ Oracle Web Tier (11.1.1.4)
- ✓ OEM Agent 12c

Store Inventory Management (13.2.4)
- ✓ Oracle WebLogic Server 11g Release 1 (10.3.4)
- ✓ Java Developer Kit (JDK - 1.6.0+ 64 bit)
- ✓ Oracle BI Publisher 10g (10.1.3.4)

- ✓ Oracle SSO Server 10.1.4.3
- ✓ Oracle Internet Directory 10.1.4.3
- ✓ Oracle Web Tier (11.1.1.6)
- ✓ OEM Agent 12c
- ✓ Oracle Database (11.2.0.3)
  - o 14038787 (Includes CPU July 2012)
  - o RMAN 11.2.0.3

Retail Integration Bus (13.2.4)
- ✓ Oracle WebLogic Server 11g Release 1 (10.3.4)
- ✓ Java Developer Kit (JDK - 1.6.0+ 64 bit)
- ✓ OEM Agent 12c
- ✓ Oracle Database (11.2.0.2)
  - o Database Patchset Update 11.2.0.2.7 (Includes CPU July 2012)
  - o RMAN 11.2.0.2

Retail Predictive Application Server (13.2)
- ✓ Java Developer Kit (JDK - 1.6.0+ 64 bit)
- ✓ Oracle Retail Predective Server 13.2
- ✓ Oracle Retail Demand Forecasting (13.2)
- ✓ Oracle Retail Configuration Management (13.2)

UC4 (Appworx) Applications Manager V8

- ☐ Application manager
- ☐ RMI Server
- ☐ Java Developer Kit (JDK) 6.0
- ☐ JRE 6.0
- ☐ Apache
- ☐Applications Manager Agents
- ☐Database 11.2.0.3
  - ☐ 11.2.0.3 Oracle Home
  - ☐ July 2012 CPU applied
  - ☐ Column level compression
  - ☐ Oracle Net listener
  - ☐ New Context file for Oracle 11.2.0.3 Oracle Home

Oracle Retail Data Warehouse (13.1.5)

- ☐ Oracle Business Intelligence Enterprise Edition 11.1.1.5
- ☐ Oracle Weblogic Server (64-bit) 10.3.5 (generic)
- ☐ Java Developer Kit (JDK) 6.0
- ☐ JRE 6.0
- ☐ RCU 11.1.1.5

☐ Oracle Business Intelligence Publisher 11.1.1.5
☐Database 11.2.0.3
  ✓ Fresh installation of 11.2.0.3 Oracle Home
  ✓ Fresh installation of 11.2.0.3 database
  ✓ July 2012 CPU applied
  ✓ Oracle Net listener

Oracle Hyperion EPM 11.1.2.2

APPENDIX Q

RELEASE MANAGEMENT POLICY

Release Management Policy	
Information Technology Policy **Office of Information Technology Services** Chief Information Office	
Subject: Release and Deployment Management	*Number:* RM 3.0.0
Date: February , 2012	*By Direction Of:* Mary Benner, Chief Information Officer **Approval:**

This Release and Deployment Management policy provides guidance and information on how the Office of Information Technology Services (OITS) will deploy software releases to the production environment.

1. **Scope.** This policy applies to all individuals within OITS (e.g. employees, contractors, etc.) working or doing business with the Liquor Control Board (LCB)

2. **Purpose.** This policy will improve quality by maintaining the integrity of the organization's production environment during the implementation of scheduled releases.

   An effective release and deployment process allows OITS to:

   - Improve the quality of the services delivered to the agency, its vendors and licensees and the public.
   - Reduce the number of issues/bugs/defects in new or modified applications.
   - Facilitate life cycle management and operational consistency to reduce the time required of the business owners as well as others to perform user acceptance testing.

3. **Definitions:**

   - **Release.** A stable, executable version of a product intended for deployment to testing and production. A collection of new and changed code, data, parameters, etc… from one or more requests for change (RFCs) that implement new or changed functionality.
   - **Release Package.** All of the code, data, parameters, installation instructions, etc… needed to install a release.
   - **Release Type.**
     - i. **Major.** A release of a piece of software which contains substantial new functionality or changes the application. **(Scheduled When Necessary)**
     - ii. **Minor.** A release of a product that does not add new features or content. Instead minor releases normally contain such things as security fixes, cosmetic changes,

new reports on existing data, format changes to reports, or other changes that are very limited in scope and impact.

      iii. Emergency. Fixes to production where there are no known work-around and that impact to the business is so substantial and so widespread that a correction to the code cannot wait until the next major or minor release. Correcting data either through the application itself or directly through the database is considered routine operations and not an emergency release. A legislative change or change due to a decision by the courts may also constitute an emergency change.

- **Release Calendar.** A set of published dates that detail when releases are planned to transition through the different environments (development, test and production). These dates will be published for the calendar year, and do not necessarily follow the agency's business calendar. In general, the release schedule is:
  - i. Emergency releases are done as deemed appropriate. However, by definition, there should be very few of these.
  - ii. Minor releases are done in the middle of each month, timed so as not to interfere with month end closing.
  - **iii.** Major releases 6 to 7 weeks after the end of a quarter, timed so as not to interfere with year, quarter or month end closing.

4. **Classification and Submittal Policy.** Classification of the release type will be determined during the change / enhancement request phase. *(Ref. Change Management Policy)*. **Exceptions must be submitted to the Chief Information Officer (CIO) or the Assistant CIO.**

5. **Procedures.** The following explains how code will move through testing to production dependent upon classification type:

- **Emergency Break / Fix.** Code classified as this type can be moved during the week prior to the CAB as long as at least one CAB member approves it. This code be tagged as an Emergency Break/Fix and presented at the weekly change control meeting potentially after the fact. Documentation from integration and UAT testing must be submitted for review at the weekly change control meeting.
- **Minor Release.** This code will be tagged as such and will be presented at the weekly change control meeting for final release approval. This code will also need to show testing results from the Integration and the UAT environments.
- **Major Release.** All code associated with this release will be tagged as such. This will be presented at the weekly change control meeting for final release approval. During the migration process the developer must show testing results in each environment Integration and UAT prior to final release approval.

6. **Testing.**

Note: All testing must be completed and documented properly prior to any approval for release. This is outlined in the change management policy.

- Prior to a minor release all associated code must be loaded into the UAT environment prior to UAT testing. Once code has been moved, UAT testing can be completed. If code is not ready and tested with the minor release it was scheduled for, it will be moved to the next minor release.
- Prior to a major release, UAT testing must be performed with all final code in place and loaded in the UAT environment. Dates for UAT testing will be established for each release period. All code associated with the major release will be migrated at the same time to the UAT environment. If there are other reasonable accommodations needed for UAT testing they must be addressed during the submittal process. If code does not meet that window for completion it will be moved to the next release window.
- All testing will follow these guidelines, if code is not complete or must be rolled back to correct bugs it will be bumped to the next release cycle.

7. **Members and Roles for Release Management.**

- **Release Manager.**
    - i. Schedules and coordinates all releases in the organization.
    - ii. Approves changes to be released pending CAB approval.
    - iii. Enforces release policy.
- **Change Manager.**
    - i. Coordinates the changes.
    - ii. Chairs the CAB
- **Business Analysts / Developers**
    - i. Responsible for defining the processes and ensuring compliance and effective operation.
    - ii. Supply timely and accurate documentation.
    - iii. Ensure project plans and level of effort requests refer to the release windows for scheduling.
- **Business Owners.**
    - i. Responsible for working with the business analysts to define their business requirements.
    - ii. Responsible for providing staff for user acceptance testing when required.
    - iii. Review user acceptance testing results with release manager and change manager.

APPENDIX R

JAVA STANDARDS AND GUIDELINES

Information Technology Standard

Office of Information Technology Services

Subject: Java Standards and Principles	*Number:* 2.0
Date: July 9, 2012	*By Direction Of:* Mary Benner, Chief Information Officer

Importance of Coding Standards

To develop reliable, maintainable applications and reduce development cost as well as time, you must follow coding standards.

In short, advantages of coding standards are:

- Improve the readability of the code.
- Easy to understand and maintain by others.
- Maintainable applications.
- Remove complexity.

Common Development Standards

- Avoid hard coding values that may need to be changed. Instead, use mechanisms that allow for changes at run-time. This may include configuration files, command line arguments, or database tables for values.
- Code must be readable to be maintained
- Platform and environment –specific code should be avoided except where absolutely necessary
- Structured code - Aim to improve the clarity, quality and development time by making use of subroutines, block structures and "for and while" loops, and limiting the "goto" statement which can lead to "spaghetti code" (for those languages that allow "goto" statements)
- Build generic or components packages for functionality that is used across the system
- Always use a global debug flag to enable informational logging, as and when required. Default informational logging in itself is an extremely costly activity that slows the entire processing down.
- Always use "wrappers" to enhance code before customizing COTS products.
- All code should always be tuned for the best possible performance, on both server and client side. Appropriate indexes and caching techniques must be utilized during coding and special attention given to writing code that performs efficiently.
- Basic tuning and testing for performance should be done when coding and unit testing, therefore mitigating potential issues prior to full performance testing.
- Any output should allow for sorting and filtering.
- Whenever changes are made to code, comments must be added to the code to clarify the changes made.

- Unless specified and requested by the user/requestor, all displays or printouts of item information should be done in code order (ascending). Any deviation of this standard by the user must be documented. This would be for any new development or anytime existing code is opened to fix or change it.
- Any file/data that is deemed confidential must be transferred in a secure manner. OA ITB SEC031 (Encryption Standards for Data In Motion) states the methods that are permitted and the minimum encryption level. PLCB policy requires credit card information, social security numbers and HR information are deemed confidential and must be encrypted. OA ITB SEC019 also states where confidential information can be transmitted to. OA ITB standards are available at the following location.
  - ITB SEC031 – Encryption Standards for Data In Transit
    http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=2 00500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publi sh/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domain s/security/itbs/itb_sec031.html
  - ITB SEC019 – Policies and Procedures for Protecting Commonwealth Electronic Data
    http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=2 00500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publi sh/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domain s/security/itbs/itb_sec019.html

Specific Development Standards

- Additional coding standards are further detailed for the respective language/tool/framework in specific documents as noted below:
  - 1.0 .Net Coding Standards
  - 2.0 Java Coding Standards and Guidelines
  - 3.0 BI Publisher Standards and Guidelines
  - 4.0 File Transfer Standards and Guidelines
  - 5.0 SQL Standards and Guidelines
  - 6.0 Batch Interface Coding Standards
  - 7.0 Reporting Standards

- Error handling – All errors must be handled and planned for. Optimal error handling ensures that the program continues and does not crash in case an error is encountered. Errors must be logged appropriately. In case of fatal errors, the program stops processing, reports the error, and exits gracefully.

  Example for PL/SQL:

  Begin

          Select emp_id, employee_name into p_emp_id, p_employee_name from employees where department_id=p_dept_id;

End;

This block of code, without the corresponding "exception" block, will not handle "no rows found" or "too many rows found" errors. For a select statement, both these clauses are expected and must be handled, as an appropriate error handling mechanism. The "when others" clause can be used to catch the unexpected error, clean up after the unexpected error, and exit or propagate the error outside the program.

Code Documentation Principles

Java code must be documented using JavaDoc, and all necessary information for the usage of a class/method/variable etc. must be included in a JavaDoc format. Additional comments that are not relevant to the usage of the class, such as implementation details, loop invariants, TODOs, etc. should be commented in a non-JavaDoc format.

- All non-private classes, including inner classes must be documented. The documentation must include a short and long description of what the class is used for, the @author tag, and versioning information if it is not tracked in a source repository.
- All non-private methods in a class must be documented. The documentation must include a short sentence describing what the method does, documentation for each parameter (trivial parameters may include no description but the @param line must exist), and documentation for all exceptions that the method throws, including unchecked exceptions that are directly thrown.
- All non-private member variables and types in a class must be documented. The documentation must include a short description of the variable, which should not include the type of the variable. (i.e. "contains the user's first name", not "a string containing the user's first name")
- Improve clarity, quality, and maintainability: (1, 3, 4, 5 sourced from: Introduction to Programming in Java – Robert Sedgewick, Kevin Wayne / http://introcs.cs.princeton.edu/java/11style/)
- Keep programs and methods short and manageable.
- Break complex methods up into manageable pieces by calling private methods to do part of the work.
- Use language-specific idioms.
- Use straightforward logic and flow-of-control.
- Avoid magic numbers (numbers other than -1, 0, 1, and 2); instead, give them meaningful symbolic names.
- Make use of design patterns where applicable and document their use (i.e. This class is a singleton.)

It is recommended to configure Eclipse to automatically add the appropriate comment blocks, and to configure the automatic blocks to contain the items required above. This can be done through Window->Preferences->Java->Code Style->Code Templates. Eclipse shortcut for JavaDoc: Alt-Shift-J

Example:

File: Product.java

```
import java.io.StringWriter;

/**

 * The Product class represents a LCB product that is available for sale.

 * (First sentence is a concise, detailed statement about the class.) The rest is for more
details and notes on how to use the object, etc.

 * @author Some Guy
```

```java
     *
     */
public class Product {

        private String productName, productDescription;

        /**
         * The count for this product (Example documentation of a public member variable)
         */
        public int somePublicNumber = 5;

        /**
         * The buildProduct method is a convenience method for constructing a Product
object via the product web service call.  It should be used whenever a
         * complete product object is needed, as otherwise, the user would have to set all
the product information manually.
         * @param catalog The catalog to search for the product
         * @param code The product code for the Product that is to be constructed, with
leading zeros removed
         * @return The Product object corresponding to the given catalog and code.
         * @throws ItemNotFoundException Thrown if an item with the code is not found in
the LCB catalog of products
         * @throws WebService.ServiceUnavailable Thrown if the Product cannot be created
because the web service is unavailable.
         * @throws IllegalArgumentException This is thrown if the code is -1.
         * (Example of declaring an exception in the Javadoc that is not part of the throws
clause of the method declaration)
         */
        public Product(Catalog catalog, String code) throws ItemNotFoundException,
WebService.ServiceUnavailable {

                ProductDetailHandler productDetailHandler = new ProductDetailHandler();

                // Non Javadoc comments can be included as needed.  This is just an example
of explicitly throwing an unchecked exception
```

```java
        if (code.equals("-1"))

                throw new IllegalArgumentException("Code is -1");

        StringWriter body = new StringWriter();

    body.write("<prod:GetProductDetail><prod:StoreId>10051</prod:StoreId>");

        body.write(" <prod:CatalogId>" + catalog + "</prod:CatalogId>");

        body.write(" <prod:PartNumber>" + code + "</prod:PartNumber>");

        body.write("</prod:GetProductDetail>");

        WebService.serviceCall("http://localhost/NewOperation", body.toString(),
productDetailHandler);

        if (productDetailHandler.fault)

                throw new ItemNotFoundException();

    }

    /* (non-Javadoc)

     * @see java.lang.Object#toString()

     */

    public String toString() {

        return productName + ": " + productDescription;

    }

    // Passed to the web service call, doesn't require Javadoc because it is private

    private class ProductDetailHandler extends org.xml.sax.helpers.DefaultHandler {

        public boolean fault;

        public ProductDetailHandler() {}

        public void startElement(String uri, String name, String qName,
org.xml.sax.Attributes atts) {}

        public void endElement(String uri, String name, String qName) {}

        public void characters(char ch[], int start, int length) {}

    }

}
```

APPENDIX S

BI PUBLISHER STANDARDS AND GUIDELINES

Information Technology Standard **Office of Information Technology Services**	
Subject: BI Publisher Standards and Guidelines	***Number:*** 3.0
Date: July 10, 2012	***By Direction Of:*** Mary Benner, Chief Information Officer

Importance of Coding Standards

To develop reliable, maintainable applications and reduce development cost as well as time, you must follow coding standards.

In short, advantages of coding standards are:

- Improve the readability of the code.
- Easy to understand and maintain by others.
- Maintainable applications.
- Remove complexity.

Common Development Standards

- Avoid hard coding values that may need to be changed. Instead, use mechanisms that allow for changes at run-time. This may include configuration files, command line arguments, or database tables for values.
- Code must be readable to be maintained
- Platform and environment –specific code should be avoided except where absolutely necessary
- Structured code - Aim to improve the clarity, quality and development time by making use of subroutines, block structures and "for and while" loops, and limiting the "goto" statement which can lead to "spaghetti code" (for those languages that allow "goto" statements)
- Build generic or components packages for functionality that is used across the system
- Always use a global debug flag to enable informational logging, as and when required. Default informational logging in itself is an extremely costly activity that slows the entire processing down.
- Always use "wrappers" to enhance code before customizing COTS products.
- All code should always be tuned for the best possible performance, on both server and client side. Appropriate indexes and caching techniques must be utilized during coding and special attention given to writing code that performs efficiently.
- Basic tuning and testing for performance should be done when coding and unit testing, therefore mitigating potential issues prior to full performance testing.
- Any output should allow for sorting and filtering.
- Whenever changes are made to code, comments must be added to the code to clarify the changes made.

- Unless specified and requested by the user/requestor, all displays or printouts of item information should be done in code order (ascending). Any deviation of this standard by the user must be documented. This would be for any new development or anytime existing code is opened to fix or change it.
- Any file/data that is deemed confidential must be transferred in a secure manner. OA ITB SEC031 (Encryption Standards for Data In Motion) states the methods that are permitted and the minimum encryption level. PLCB policy requires credit card information, social security numbers and HR information are deemed confidential and must be encrypted. OA ITB SEC019 also states where confidential information can be transmitted to. OA ITB standards are available at the following location.
  - ITB SEC031 – Encryption Standards for Data In Transit
    http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec031.html
  - ITB SEC019 – Policies and Procedures for Protecting Commonwealth Electronic Data
    http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec019.html

Specific Development Standards

- Additional coding standards are further detailed for the respective language/tool/framework in specific documents as noted below:
  - 1.0 .Net Coding Standards
  - 2.0 Java Coding Standards and Guidelines
  - 3.0 BI Publisher Standards and Guidelines
  - 4.0 File Transfer Standards and Guidelines
  - 5.0 SQL Standards and Guidelines
  - 6.0 Batch Interface Coding Standards
  - 7.0 Reporting Standards

- Error handling – All errors must be handled and planned for. Optimal error handling ensures that the program continues and does not crash in case an error is encountered. Errors must be logged appropriately. In case of fatal errors, the program stops processing, reports the error, and exits gracefully.

Example for PL/SQL:

Begin

     Select emp_id, employee_name into p_emp_id, p_employee_name from employees where department_id=p_dept_id;

End;

This block of code, without the corresponding "exception" block, will not handle "no rows found" or "too many rows found" errors. For a select statement, both these clauses are expected and must be handled, as an appropriate error handling mechanism. The "when others" clause can be used to catch the unexpected error, clean up after the unexpected error, and exit or propagate the error outside the program.

BI Publisher Reports standards

For BI Publisher Report formatting follow these guidelines, if the Functional/Technical Specifications do not state otherwise.

Fonts

- Report Title   : Courier, Size 16pts, Style Bold.

- Column Headers: Courier, Size 12 pts, Style Bold.

- Column Data   : Courier, Size 10 pts, Style Regular.

Report layout

- Left Side: PLCB Logo

- Center: Print Report Title

- Right Side: Display Report Number, Report Date, Page No at the upper right side of each page (Page : 1 of 2).

- Repeat above details for every page.

- Printing Parameter details depend on Report requirements.

- Display ***** End of Report ***** on the last page of the Report, to indicate the end of Report.

- Display ***** No Data Found ***** after the column headings, if the report does not return any data

- Unless specified and requested by the user/requestor all displays or printouts of "item information" should be done in code order (ascending). Any deviation of this standard by the user must be documented. This would be for any new development or anytime existing code is opened to fix or change it.

File Names for templates should follow similar standards as other objects

- Report Name: XXLCB RMS <Description> Report

- Parameters Name: P_<Description>

- Data set: <Description>_ds

- List of values: <Description>_lv

- Layouts: <Description>_lo

- Template Name: XXLCB<DESC>.rtf

Sorting

- All On-line reports should be sortable and filterable on and column if applicable.

APPENDIX T

FILE TRANSFER STANDARDS AND GUIDELINES

Information Technology Standard Office of Information Technology Services	
Subject: File Transfer Standards and Guidelines	**Number:** 4.0
Date: July 10, 2012	**By Direction Of:** Mary Benner, Chief Information Officer

Importance of Coding Standards

To develop reliable, maintainable applications and reduce development cost as well as time, you must follow coding standards.

In short, advantages of coding standards are:

- Improve the readability of the code.
- Easy to understand and maintain by others.
- Maintainable applications.
- Remove complexity.

Common Development Standards

- Where feasible, all FTP jobs should be done using appworx

    Open FTPs

        The ftp module/script to use on AIX servers is "XXLCB_FTP"/" XXLCB_FTP.SH"

        The ftp script to use on current window servers is "ftp.sh.bat"

    Secure FTPs

        1 choice for ftp module/script to use on AIX servers is "XXLCB_SFTP_GET"/" XXLCB_SFTP_get.sh"

-
- Any file/data that is deemed confidential must be transferred in a secure manner. OA ITB SEC031 (Encryption Standards for Data In Motion) states the methods that are permitted and the minimum encryption level. PLCB policy requires credit card information, social security numbers and HR information are deemed confidential and must be encrypted. OA ITB SEC019 also states where confidential information can be transmitted to. OA ITB standards are available at the following location.
    - ITB SEC031 – Encryption Standards for Data In Transit
      http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publi

sh/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domain
s/security/itbs/itb_sec031.html
- o ITB SEC019 – Policies and Procedures for Protecting Commonwealth Electronic
Data
http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=2
00500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publi
sh/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domain
s/security/itbs/itb_sec019.html

Specific Development Standards

- Additional coding standards are further detailed for the respective
language/tool/framework in specific documents as noted below:
  - o 1.0 .Net Coding Standards
  - o 2.0 Java Coding Standards and Guidelines
  - o 3.0 BI Publisher Standards and Guidelines
  - o 4.0 File Transfer Standards and Guidelines
  - o 5.0 SQL Standards and Guidelines
  - o 6.0 Batch Interface Coding Standards
  - o 7.0 Reporting Standards

Scope of this document

The scope of this document is limited to projects utilizing resources from the Office of Information Technology Services or providing solutions for or under the management of the Office of Information Technology Services.

References

ProTech's Korn Shell Programing, Books 1 & 2

Perl Net::FTP (http://search.cpan.org/~gbarr/libnet-1.22/Net/FTP.pm)

Overview

There are many interfaces between the modules of the PLCB's Oracle applications and many of those interfaces involve the exchange of files. The PLCB also exchanges files with outside organizations.

Standards are needed to ensure that these transfers are:
- Efficient
- Reliable
- Provide sufficient logging to aid in troubleshooting

The PLCB recognizes that sometimes exceptions to the standards will be needed because of requirements outside of the PLCB's control. Examples would include specialized security requirements from banks, limitations of the source or target operating systems, etc…

The tool to be used for file transfers between systems depends on whether or not the PLCB controls the systems and the number of files to be transferred.

The primary tools available are:

- An NFS share, per environment, that is mounted on multiple servers in the same environment (production, development, test, etc…) at the same mount point on all servers. This "shared" directory appears local on every server on which it is mounted. Therefore, transferring files between servers is simply a matter of the sender creating the file on the shared directory and the receiver, opening the file on the shared directory, plus some coordination between the applications.
  AIX, Linux and Windows all support NFS shares.
  Each NFS share supports one and only one environment. It does not cross

environments.

For technical reasons, the NFS share is limited to servers connected via a high speed, highly reliable network. In the PLCB's case, this means that it is almost always limited to servers located in the Harrisburg area and connected to CoPANet.

- SCP - Secure Copy or SCP is a command line utility that transfers files between a local and a remote host or between two remote hosts. It runs the SCP protocol over the Secure Shell (SSH) protocol and is limited to transferring files. Some implementations of the SCP program actually use the SFTP protocol (over SSH) to perform file transfers; however, some such implementations are still able to fallback to the SCP protocol if the server does not provide SFTP service. SCP:
    - o   encrypts the data in transit.
    - o   can use either username/password based authentication or client certificates (preferred).
    - o   returns the status of the transfer in its exit status
    - o   usually does not require special set-up by the PLCB's Enterprise Infrastructure team and/or the business partner's equivalent organization, although Enterprise Infrastructure can help create and distribute client certificate files for authentication.
    - o   is a native Unix/Linux utility and is available through Cygwin for Windows or PuTTY (pscp) for Windows.
- COPY – The COPY command in Windows allows the transfer of files between a local and a remote host or between two remote hosts. Both hosts almost always need to be on the CWOPA domain. COPY:
    - o   does not encrypt the data in transit.
    - o   uses implicit Windows domain authentication.
    - o   returns the status of the transfer in its exit status.
    - o   does not require special set-up by the Enterprise Infrastructure team, unless the source or destination is an Linux server running SAMBA
    - o   is a native Windows utility.
    - o   can work with Linux via the SAMBA utility.
- FTP – File Transfer Program or FTP is a command line utility that transfers files between a local and a remote host. It is based on the File Transfer Program or FTP protocol. FTP:
    - o   does not encrypt the data in transit.
    - o   uses username/password authentication.
    - o   Does not return the status of the transfers in its exit status. The only way to retrieve the status of the transfers is to parse the logging information from FTP and check for various success or failure codes
    - o   requires special set-up by the PLCB's Enterprise Infrastructure team and/or the business partner's equivalent organization.
    - o   is a native, Unix/Linux and Windows utility.
- cURL – Copy URL or cURL is a command line utility that transfers files between a local and a remote host. It supports multiple protocols including FTP, FTP-over-SSL, SSH (SCP), SFTP, HTTP and others. cURL:
    - o   does or does not encrypt the data in transit depending on the protocol
    - o   uses username/password authentication or client certificate based authentication depending on the protocol and the options supported by the server.
    - o   returns the status of the transfers in its exit status.

- requires special set-up by the PLCB's Enterprise Infrastructure team and/or the business partner's equivalent organization depending on the protocol.
- is a native Linux facility and is available for Unix and Windows.
- does not support SCP or SFTP in all implementations.
- SFTP – Secure File Transfer Program or SFTP is a command line utility that transfers files between a local and a remote host. It is based on the SFTP protocol run over the Secure Shell (SSH) protocol. It does **not** use the same as protocol FTP or FTP over SSL. FTP over SSL is sometimes abbreviated as FTPS. SFTP:
  - uses similar commands to FTP.
  - does encrypt the data in transit.
  - uses username/password authentication or client certificates.
  - does not return the status of the transfers in its exit status. The only way to retrieve the status of the transfers is to parse the logging information from SFTP and check for various success or failure codes
  - usually does not require special set-up by the PLCB's Enterprise Infrastructure team and/or the business partner's equivalent organization although Enterprise Infrastructure can help create and distribute client certificate files for authentication.
  - is a native, Unix/Linux utility and is available through Cygwin for Windows or PuTTY (pscp) for Windows.

This list is not exhaustive. There are other native utilities for specialized purposes such as rsync (Unix/Linux) and robocopy (Windows) for synchronizing directories and variants of tools such as FTP-over-SSL that are not covered here as well as encryption tools such as pgp.

Regardless of the tool chosen, file transfers must:

- Utilize "verbose enough" logging to provide sufficient details of each transfer or action (cd, put, get, etc…) The details must prove that the transfer succeeded or failed, the status code and how many bytes were transferred. Such proof speeds up the problem resolution process when working with other organizations. Simply logging that the script *going* to transfer a file is not proof that it did.
- Check the status of each transfer or action (cd, put, get, etc…). Scripts or batch jobs must *never* assume that all of the transfers worked. Each transfer or action must be checked. The problem caused by incomplete processing is often more difficult to resolve than those caused by aborting the script or batch job.
- Minimize the number of logins on the remote systems to a reasonable degree. Logins are a resource intensive operation and performing them hundreds of times can slow down file transfers significantly.
- Minimize the use of wildcards for file transfers unless special precautions are taken to ensure that the expected number of files are transferred and to avoid timing problems such as transferring a file before it has finished being written. The flow of such a process might be:
  - Select the files and move or copy them to a "temporary" directory.
  - Execute the wildcard transfer from the temporary directory to the destination directory.

- o Check that the number of files in both directories match in size and count.
- o Move the files in the temporary directory to an archive directory.

An example may be gdz.int_move.sh found on ORCO.

For some general guidelines:

- The shared NFS directory is always the preferred solution for transfers between PLCB managed servers that have high-speed, highly reliable connections such as IBMS, ORCO, e-Commerce, and NWOB based servers. Unfortunately, that excludes the ORBO servers in the stores. It also excludes servers at external partners such as Treasury, NAABCA or wine and spirits vendors. It does not exclude the servers in the distribution centers because they have both high speed links and redundant, highly available links.
- Encrypted transfers are always preferred over unencrypted transfers. i.e. SCP and SFTP are the preferred transfer tools.
- SCP with client certificates should be used for transfers of a *reasonable* number of files[1] between PLCB managed servers even if the data does not require encryption.[2] Windows COPY is acceptable for Windows-to-Windows transfers. Wildcards should be avoided unless special precautions are taken to avoid timing problems and incomplete transfer. In most cases, each SCP transfer should process only one file at a time in order to simplify error checking and trapping.
- SCP or SFTP, with either username/password or client certification authentication, should be used for file transfers between PLCB managed servers and non-PLCB managed servers even when the data itself does not require encryption. cURL and FTP are replacements if the non-PLCB managed server does not support SCP or SFTP. SCP works best when the number of files transferred is reasonable. SFTP works best for very large numbers of files. Most of the time, each SCP transfer should process only one file at a time in order to simplify error checking and trapping.

Examples of SCP, COPY, SFTP, FTP and cURL are shown below.

Exceptions should be discussed with the Application Development Division Chief and the Enterprise Infrastructure Division Chief or their designees.

---

[1] Common sense must be used to determine the quantity for each transfer. It will depend on such factors as the number of files, the sizes, the directories, etc…

[2] SCP provides more flexibility and more options than RCP, including certificate based authentication. In addition, some Unix/Linux distributions block RCP by default.

1.4   The NFS share "/apps/shared"
    1.4.1   Background

A single shared resource to transfer files is needed for several reasons:

- Implement a modern design

  Point-to-point interface architecture has been superseded by a "bus" or "hub" based architecture for at least the last 10 years. Sometimes, this is referred to as an enterprise service bus architecture, although, confusingly, there are products that call themselves enterprise service buses.

- Disk space utilization

  Disk space is very expensive at the Data PowerHouse, especially the high-speed IBM DS8300 SAN used for production.

  Currently, transferring files between systems results in at least two copies of the files; one on the source; one on each of the destinations. Each set should be archived and purged, but isn't always. Centralization will eliminate redundant copies and make purging easier.

  Some files may be transferred to more than one system. This would provide the opportunity to "transfer" it only once.

- Usable directories

  Many of the interfaces archive files into a single directory.   For example, some interfaces such as POSupload generate one file every 15 minutes for each store.   The POSU backup directory contains only 7 days' worth of data which represents 151,000 files.

  AIX struggles with more than a few hundred thousand files. The directory command (ls) and all operations involving wildards cease to work when there are more than approximately 500,000 files in a single directory. In the past, there have been multiple directories with more than 1 million files, the highest count was over 3 million.

- Better backup

  Currently, files are retained on the disk and are backed up daily. When troubleshooting, it is not possible to see the "state" of a directory throughout the day. By concentrating the files in a central location, it would be possible to back up the files on more frequent basis, perhaps hourly, and this may provide additional information about the state of the files and transfers throughout the day.

  It is possible to do periodic backups with the current distributed directories spread across systems, but the number of backups becomes prohibitive to manage and to traverse when attempting diagnostics.

- Less complex batch modules or jobs

  NFS mount points (like Windows shares) can appear to be local "disks" on servers using them. This means that instead of a network copy command in a script (ex: SCP, FTP, SFTP or cURL), the program, script, package, etc... can directly output the file. If a copy or rename is required, it is the cp/copy or mv/rename command.

  Windows servers can mount NFS shares either:

  - directly via "mount [options] //nfs-server-unc-name/share-name [drive letter]" assuming that the Client Services for NFS is installed. NFS support is one of those optional packages that is available via the Add/Remove Software wizard in the Control Panel.
  - via an intermediate Linux server running SAMBA. This is currently used to allow functional team members to view log files from IBMS.

  In either case, making the files appear to be local, reduces the complexity of the batch job step.

- Ease of management

  Providing a standard "starting point" for the directory tree will make it easier to find files and to create default purging policies. Right now, Server Support has to hunt through all of the directories on a disk and create individual scripts.

Note that AIX/Unix/Linux, by themselves, do not provide the file coordination necessary to ensure that program creating the interface file is finished writing it before the program reading that file can open it.

One of the PLCB's POS interfaces solved the coordination issue for single file transfers by renaming the file after it is written to the file name expected by the reader. (For example, the file type is ".tmp" during its creation, then closed and renamed to ".dat" as expected by the reader.)

Another of the PLCB's interfaces, the Treasury interface, solved the coordination issue for multiple file transfers by writing a "kick" or "flag" file whose presence indicates that the writer has finished and that it is safe for the reader (Treasury) to begin processing the files.

High availability for NFS is solved if the server that exports NFS is one of the servres that supports either VMware HA (high availability) plus vMotion or AIX Live Partition Mobility.

1.4.2   Implementation

The NFS shares are currently hosted on the Appworx servers in each environment. In production, that server is lbappprddb01. Appworx is one of the 6 applications that must be up in order for IBMS to function. [3]

Since all servers have the /apps directory, the shared, NFS directory "/shared" is underneath /apps.

"/shared" is exported by NFS on Appworx and imported on, at minimum, the following servers:

- BPEL
- RIB
- EBS (database server only)
- RMS (database server only)
- SIM (database server only)
- ORCO application server
- ORCO database server
- RDW application server
- RDW database server
- The 3 distribution centers servers

Other PLCB servers, including Windows based servers, can be added on request so long as they have high-speed, highly reliable connections to the Appworx server. Unfortunately, that excludes the ORBO servers in the stores. It also excludes servers at external partners such as Treasury, NAABCA or wine and spirits vendors.

Because of the way that NFS works and that the directories are organized, the /apps/shared directory tree appears exactly the same and does not vary from server to server or even environment to environment. In addition, "/shared" never spans environments. i.e. The production "/shared" is not mounted on UAT and vice versa.

The /shared directory exists on its own volume set so that runaway applications do not impact other applications on the same server.

Below the /shared directory, at minimum, there are two directories, /interfaces and /reports. Others can be added upon request.

The following restrictions exist:

- The maximum number of files in a single directory must be limited to less than 100,000. Beyond that, the normal UNIX (AIX, Linux) directory commands begin to fail and managing the directory becomes very difficult.
- While all servers that mount the /shared can read and write to it, typically, only read access is provided to the functional teams in order

---

[3] The 6 applications are EBS (and the portals), RMS, and SIM and the applications that link them together, BPEL, Appworx, and RIB.

to fulfill auditing requirements. Specific directories may be provided as read-write if that is how errors in the interface are resolved.
- Subdirectories can be created underneath /interfaces and /reports only by Database Administration.

1.4.3   Recommendations

Under /interfaces, each interface, conversion, customization or extension should have its own unique directory, for example, /INT123. Reports should have a unique directory under /reports, for example, /REP123.

Underneath each interface should be multiple directories for the data files (/data), the archive (/archive), if the interface archives its files, error logs or reports (/errors), if interface generates any, log files (/logs), if the interface generates any. Other directories may also be added under the interface.

Softlinks can be created where and if needed in order to allow /shared to be used by out-of-the-box interfaces that require a specific directory name.

For example, if an application expects its input files to be in /apps/rp01/rms/install_dir/rms/rms/in that directory could, if desired, be soft linked to /apps/shared/INTRESA/data.

1.5   SCP examples

Simple transfer of a single file with error trapping using a shell script.

```
$ cat scp_example.sh
# Parameters:
#      1 - source file
#      2 - username
#      3 - certificate file location
#      4 - destination server
#      5 - destionation file
arg="scp -i $3 $1 $2@$4:$5"
echo Executing $arg
eval $arg
err=$?
if [ $err -ne 0 ] ; then
      print ERROR: scp failed, returned error status was $err
      exit 1
fi
# on Appworx, add the following
#if [ -f $file ]; then
#      $SQLOPER_HOME/exec/FILESIZE $file $err
#      err=$?
#fi
```

```
exit $err
$ ./scp_example.sh a.a sweinbro .ssh/id_rsa lbappprddb01 ~/b.b
Executing scp -i .ssh/id_rsa a.a sweinbro@lbappprddb01:/home/sweinbro/b.b
a.a                                              100%  155   0.2KB/s   00:00
$ ./scp_example.sh x.x sweinbro .ssh/id_rsa lbappprddb01 ~/b.b
Executing scp -i .ssh/id_rsa x.x sweinbro@lbappprddb01:/home/sweinbro/b.b
x.x: No such file or directory
ERROR: scp failed, returned error status was 1
$
```

1.6   [Windows] COPY examples
1.6.1   From the command prompt or a script

```
C:\Temp>copy a.a "\\lbsrv01\shared\coe\2. Infrastructure\a.a"
     1 file(s) copied.
```

```
C:\Temp>copy a.a "\\lbsrv01\shared\coe\2. Infrastructure\a.a"
Overwrite \\lbsrv01\shared\coe\2. Infrastructure\a.a? (Yes/No/All): yes
     1 file(s) copied.
```

```
C:\Temp>Rem Supress the "overwrite" confirmation prompt.
C:\Temp>Rem a good idea when the copy command is used in a batch job.
C:\Temp>copy/y a.a "\\lbsrv01\shared\coe\2. Infrastructure\a.a"
     1 file(s) copied.
```

```
C:\Temp>copy x.x "\\lbsrv01\shared\coe\2. Infrastructure\a.a"
The system cannot find the file specified.
```

```
C:\Temp>if %errorlevel% gtr 0 Echo Copy failed
Copy failed
```

1.6.2   From an Appworx module

Note: The PLCB is currently in the process of purchasing some Appworx licenses for Windows. Until they are purchased, the sample script below cannot be verified.

```
@echo off

Rem Copy a file

Rem Parameters

Rem 1 - UNC path for the source

Rem 2 - UNC path for the destination

set arg=copy/y %1 %2

echo %arg%

%arg%
```

```
if "%errorlevel%"=="0" goto OK

   set err=%errorlevel%

   echo The copy failed, error code was %err%

:OK
```

C:\Temp>**copy_example.bat a.a "\\lbsrv01\Shared\COE\2. Infrastructure\a.a"**

copy/y a.a "\\lbsrv01\Shared\COE\2. Infrastructure\a.a"

       1 file(s) copied.

C:\Temp>**copy_example.bat x.x "\\lbsrv01\Shared\COE\2. Infrastructure\a.a"**

copy/y x.x "\\lbsrv01\Shared\COE\2. Infrastructure\a.a"

The system cannot find the file specified.

The copy failed, error code was 1

1.7   FTP examples
1.7.1   Using a Korn shell script

*** doctest5.sh ***

```
#!/usr/bin/ksh

ftp_server="serverxxxx"

ftp_username="userxxxx"

ftp_password="passwordxxxx"

path="/maintlevel/docfinity"

file="doctest"

script="doctest5.sh"

tempftp="doctest.tempftp"

filebad="doctestbad"

pathbad="/maintlevel/docfinitybad"

FTP_FILE()
```

```
{

ftp -nv $ftp_server < $tempftp

}

echo "********** Start "`date +%C%y%m%d" "%T`" **********" > $script".ftplog"

echo "   user" $ftp_username $ftp_password > $tempftp

echo "   passive" >> $tempftp

echo "   prompt" >> $tempftp

echo "   cd" $path >> $tempftp

lpcnt=1

while [[ $lpcnt -lt 3 ]]; do

   echo "   put" $file >> $tempftp

   (( lpcnt += 1 ))

done

echo "   put" $filebad >> $tempftp

lpcnt=1

while [[ $lpcnt -lt 3 ]]; do

   echo "   put" $file >> $tempftp

   (( lpcnt += 1 ))

done

echo "   cd" $pathbad >> $tempftp

lpcnt=1

while [[ $lpcnt -lt 3 ]]; do

   echo "   put" $file >> $tempftp

   (( lpcnt += 1 ))

done

echo "   bye" >> $tempftp

FTP_FILE >> $script".ftplog"
```

```
# Check FTP log routine

ftpputgetcnt=`grep -i -E "^ *put|^ *get" $tempftp | wc -l`

ftpcdcnt=`grep -i "^ *cd" $tempftp | wc -l`

ftptranscnt=`grep -i "^ *226 Trans" $script".ftplog" | wc -l`

ftpcwdcnt=`grep -i "^ *250 CWD" $script".ftplog" | wc -l`

((cntdiff=ftpputgetcnt-ftptranscnt))

if [[ $ftpputgetcnt -ne $ftptranscnt ]]; then

   echo "ERROR -" $cntdiff "FTP transfer(s) failed - Expected" $ftpputgetcnt "-

Processed" $ftptranscnt

fi

((cntdiff=ftpputgetcnt-ftptranscnt))

if [[ $ftpcdcnt -ne $ftpcwdcnt ]]; then

   echo "ERROR -" $cntdiff "CD directory change(s) failed - Expected" $ftpcdcnt

"- Processed" $ftpcwdcnt

fi

echo "********** End   "`date +%C%y%m%d" "%T`" **********" >> $script".ftplog"

exit

*** doctest.tempftp ***

   user userxxxx passwordxxxx

   passive

   prompt

   cd /maintlevel/docfinity

   put doctest

   put doctest

   put doctestbad

   put doctest

   put doctest
```

cd /maintlevel/docfinitybad

put doctest

put doctest

bye

*** doctest5.sh.ftplog ***

********** Start 20110415 15:40:30 **********

Connected to serverxxxx.

220 serverxxxx FTP server (Version 4.1 Sat Sep 7 14:31:53 CDT 2002) ready.

331 Password required for userxxxx.

230-Last unsuccessful login: Fri Apr 15 09:12:06 EDT 2011 on ssh from lbmises02.

lcb.state.pa.us

230-Last login: Fri Apr 15 15:39:42 EDT 2011 on ftp from lbebsprddb01

230 User userxxxx logged in.

Passive mode on.

Interactive mode off.

250 CWD command successful.

227 Entering Passive Mode (172,17,164,24,196,43)

150 Opening data connection for doctest.

226 Transfer complete.

52 bytes sent in 0.001579 seconds (32.16 Kbytes/s)

local: doctest remote: doctest

227 Entering Passive Mode (172,17,164,24,196,44)

150 Opening data connection for doctest.

226 Transfer complete.

52 bytes sent in 0.00147 seconds (34.55 Kbytes/s)

local: doctest remote: doctest

227 Entering Passive Mode (172,17,164,24,196,45)

150 Opening data connection for doctest.

226 Transfer complete.

52 bytes sent in 0.001475 seconds (34.43 Kbytes/s)

local: doctest remote: doctest

227 Entering Passive Mode (172,17,164,24,196,46)

150 Opening data connection for doctest.

226 Transfer complete.

52 bytes sent in 0.001399 seconds (36.3 Kbytes/s)

local: doctest remote: doctest

550 /maintlevel/docfinitybad: A file or directory in the path name does not exist.

227 Entering Passive Mode (172,17,164,24,196,47)

150 Opening data connection for doctest.

226 Transfer complete.

52 bytes sent in 0.00157 seconds (32.34 Kbytes/s)

local: doctest remote: doctest

227 Entering Passive Mode (172,17,164,24,196,48)

150 Opening data connection for doctest.

226 Transfer complete.

52 bytes sent in 0.00139 seconds (36.53 Kbytes/s)

local: doctest remote: doctest

221 Goodbye.

********** End   20110415 15:40:31 **********

*** output from doctest5.sh ***

doctestbad: A file or directory in the path name does not exist.

ERROR - 1 FTP transfer(s) failed - Expected 7 - Processed 6

ERROR - 1 CD directory change(s) failed - Expected 2 - Processed 1

1.7.2   Using a Perl program that wraps FTP

Note: the Perl program was constructed from examples available on the Internet.

$ ./lcbftp.pl

Usage: lcbftp [options]

Copy a set of files between a server and an FTP site.

Before copying the files, they are checked to make sure that they exist.

```
Options:
--get, --put          direction of transfer (default is put)
-f, --ftphost=DNSNAME   ftphost ex: ftp.lcb.state.pa.us (required)
-u, --username=USERNAME username on the remote system (required)
-p, --password=PASSWORD password on the remote system (required)
-x, --xfrlist=FILE      filename containing list of files to be transfered,
                   one filename per line (required)
-l, --logfile=FILE      Log file for results/status messages (required)
-r, --remotedir=PATH    Remote directory for FTP CWD command(optional)
--passive, --nopassive  Passive or nopassive i.e. passive on or passive off.
                   Passive on is the default.
-b, --binary or
-a, --ascii             binary or ascii transfer.  Default binary.
-t, --port=PORTNUMBER   TCP port for FTP, default port 21, the standard port

-v, --verbose           Print extra logging information
$ #
$ # Put/send files
$ #
```
$ ./lcbftp.pl --put -f ftpsite.pa.lcl -u myuser -p mypass -l t.log -x list.dat
```
lcbftp-Info, [Wed May  4 13:40:18 2011]
lcbftp-Info, Checking input file a.a
lcbftp-Info, a.a, 2 bytes exists
lcbftp-Info, Checking input file b.b
lcbftp-Info, b.b, 2 bytes exists
lcbftp-Info, Checking input file c.c
lcbftp-Info, c.c, 2 bytes exists
lcbftp-Info, All 3 files in list.dat exist and are accessible
lcbftp-Info, Connecting to FTP server at Wed May  4 13:40:18 2011
lcbftp-Info, [Wed May  4 13:40:18 2011] - Starting transfers
lcbftp-Info, Logging in as myuser
lcbftp-Info,230, Logged on
lcbftp-Info, Setting mode to BINARY
```

lcbftp-Info,200, Type set to I

lcbftp-Info, [Wed May 4 13:40:18 2011] - put a.a, 2 bytes, Status:226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 13:40:18 2011] - put b.b, 2 bytes, Status:226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 13:40:18 2011] - put c.c, 2 bytes, Status:226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 13:40:18 2011] - All transfers completed successfully
$ #
$ # Get/Retrieve files
$ #
$ ./lcbftp.pl --get -f ftpsite.pa.lcl -u myuser -p mypass -l t.log -x list.dat
lcbftp-Info, [Wed May 4 13:45:27 2011]
lcbftp-Info, Connecting to FTP server at Wed May 4 13:45:27 2011
lcbftp-Info, [Wed May 4 13:45:27 2011] - Starting transfers
lcbftp-Info, Logging in as myuser
lcbftp-Info,230, Logged on

lcbftp-Info, Setting mode to BINARY
lcbftp-Info,200, Type set to I

lcbftp-Info, [Wed May 4 13:45:27 2011] - get a.a, 2 bytes, Status:226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 13:45:27 2011] - get b.b, 2 bytes, Status:226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 13:45:27 2011] - get c.c, 2 bytes, Status:226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 13:45:27 2011] - All transfers completed successfully
$ #
$ # Try to put some files that don't exist
$ #
$ ./lcbftp.pl --put -f ftpsite.pa.lcl -u myuser -p mypass -l t.log -x list.dat
lcbftp-Info, [Wed May 4 13:49:48 2011]
lcbftp-Info, Checking input file a.a
lcbftp-Info, a.a, 2 bytes exists
lcbftp-Info, Checking input file b.b
lcbftp-Info, b.b, 2 bytes exists
lcbftp-Info, Checking input file c.c
lcbftp-Info, c.c, 2 bytes exists
lcbftp-Warning, Source file d.d does not exist at ./lcbftp.pl line 107.

lcbftp-Fatal, One or more source files do not exist - Bad file descriptor at ./lcbftp.pl line 123.
$ #
$ # Try to get some files that don't exist
$ #
$ ./lcbftp.pl --get -f ftpsite.pa.lcl -u myuser -p mypass -l t.log -x list.dat
lcbftp-Info, [Wed May 4 14:20:13 2011]
lcbftp-Info, Connecting to FTP server at Wed May 4 14:20:13 2011
lcbftp-Info, [Wed May 4 14:20:13 2011] - Starting transfers
lcbftp-Info, Logging in as myuser
lcbftp-Info, 230, Logged on

lcbftp-Info, Setting mode to BINARY
lcbftp-Info, 200, Type set to I

lcbftp-Info, [Wed May 4 14:20:13 2011] - get a.a, 2 bytes, Status: 226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 14:20:13 2011] - get b.b, 2 bytes, Status: 226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 14:20:13 2011] - get c.c, 2 bytes, Status: 226, Connection accepted
Transfer OK

lcbftp-Info, [Wed May 4 14:20:13 2011] - get d.d, bytes, Status: 550, File not found

lcbftp-Fail, [Wed May 4 14:20:13 2011] - 1 files failed to transfer, 3 files transferred successfully
$

…and the code itself

```
#!/usr/bin/perl
use strict;
use Net::FTP;
use Getopt::Long;

(my $PROG = $0) =~ s#^.*/([^.]*)(\.pl)?$#$1#;

my $USAGE = qq{\
Usage:  $PROG [options]

Copy a set of files between a server and an FTP site.

Before copying the files, they are checked to make sure that they exist.

Options:
--get, --put           direction of transfer (default is put)
-f, --ftphost=DNSNAME   ftphost ex: ftp.lcb.state.pa.us (required)
-u, --username=USERNAME username on the remote system (required)
-p, --password=PASSWORD password on the remote system (required)
```

```
-x, --xfrlist=FILE      filename containing list of files to be transfered,
                  one filename per line (required)
-l, --logfile=FILE      Log file for results/status messages (required)
-r, --remotedir=PATH        Remote directory for FTP CWD command(optional)
--passive, --nopassive        Passive or nopassive i.e. passive on or passive off.
                  Passive on is the default.
-b, --binary or
-a, --ascii          binary or ascii transfer.  Default binary.
-t, --port=PORTNUMBER   TCP port for FTP, default port 21, the standard port

-v, --verbose        Print extra logging information
};

my $put_files = 1;
my $ftphost;
my $username;
my $password;
my $xfrlistfile;
my $logfile;
my $remotedir = "";
my $passive = 1;
my $binary = 1;
my $ftpport = 21;
my $verbose = 0;
my $retrycount = 3;
my $retryinterval = 60;

my $result = GetOptions (
                         'put' => \$put_files,              # transfer direction (get or
put).
                         'get' => sub { $put_files = 0 },    #  Default put
                         'f|ftphost=s' => \$ftphost,          # ftphost ex:
ftp.lcb.state.pa.us (required)
                         'u|username=s' => \$username,          # username on the
remote system (required)
                         'p|password=s' => \$password,          # password on the
remote system (required)
                         'x|xfrlist=s' => \$xfrlistfile, # list of files to be
transfered(required)
                         'l|logfile=s' => \$logfile,          # log file for results/status
messages (required)
                         'r|remotedir:s' => \$remotedir,    # remote directory
(optional)
                         'passive!' => \$passive,          # Passive or nopassive i.e.
passive on or passive off.
                                                           # Passive on is the
default.
                         'b|binary' => \$binary,              # binary or ascii
transfer.  Default binary.
                         'a|ascii' => sub { $binary = 0 },
                         't|port:i' => \$ftpport,            # tcp port, default port 21,
the standard port
                         'v|verbose' => \$verbose,
```

```perl
                                'c|retrycount:i' => \$retrycount,    # Count of retries.  Default
is 3;
                                'w|retryinterval:i' => \$retryinterval        # Sleep time
between retries in seconds.  Default 3
                                );


my $debug=0;                    # Debug flag for Net::FTP module.  Set to same value as
verbose
$debug = $verbose;

my $ftpcode;            # Status code from last FTP command
my $ftpmsg;                     # Status messages from FTP command

# Exit if they don't specify one of the required options or if the options are malformed.
die "$USAGE" if ($ftphost =~ /^$/ or $username =~ /^$/ or $logfile =~ /^$/ or $xfrlistfile
=~ /^$/);
die "$USAGE" if (!$result);

my $direction = "put";
$direction = "get" if (! $put_files);

my $now=localtime;
print "$PROG-Info, [$now]\n";

open(LOG, ">", $logfile) or die "$PROG-Fatal, Unable to open log file $logfile - $!";

open(XFRLIST, "<", $xfrlistfile) or die "$PROG-Fatal, Unable to open source list file
$xfrlistfile - $!";
my @srcfiles = <XFRLIST>;

close XFRLIST or die "$PROG-Fatal, Unable to close source list file $xfrlistfile - $!";

my $xfrlistOK = 1;
my $xfrlistcount = 0;
foreach my $f ( @srcfiles )
{
        chomp( $f );                    # kill the trailing new line
        if ($put_files) {
                if (-e $f) {
                        print "$PROG-Info, Checking input file $f\n";
                        my ($fsizeinbytes) = (stat($f))[7];          # get the size
                        if (not $fsizeinbytes ) {
                                warn "$PROG-Warning, Source file $f is empty";
                                $xfrlistOK = 0;
                        } else {
                                print "$PROG-Info, $f, $fsizeinbytes bytes exists\n";
                        }
                } else {
                        warn "$PROG-Warning, Source file $f does not exist";
                        $xfrlistOK = 0;
                };
                $xfrlistcount++;
```

```
        } else {
              $xfrlistcount++;
              if ($f =~ /^$/ ) {
                      warn "$PROG-Warning, Source file at line $xfrlistcount is blank";
                      $xfrlistOK = 0;
              }
        }
};

if (not $xfrlistOK ) {
        close LOG;
        close XFRLIST;
        die "$PROG-Fatal, One or more source files do not exist - $!" if ($put_files);
        die "$PROG-Fatal, One or more source filenames is blank - $!" if (!$put_files);
};

close XFRLIST;
print "$PROG-Info, All $xfrlistcount files in $xfrlistfile exist and are accessible\n" if
($put_files);
$now = localtime;
print "$PROG-Info, Connecting to FTP server at $now\n";

my $connected = 0;  # Flag for whether we are or are not connected.
my $connect_failures = 0;

$now = localtime;
print "$PROG-Info, [$now] - Starting transfers\n";
my $exit_status = 0;
my $files_transferred = 0;
my $files_failed = 0;

my $ftp;

foreach my $f(@srcfiles)
{
        chomp( $f );                    # kill the trailing new line
        if (not $connected) {
              if ($ftp = Net::FTP->new($ftphost, Port => $ftpport, Passive => $passive,
Debug => $verbose)) {
                      $connected = 1;
                      $connect_failures = 0;
                      if ($passive) {
                              print "$PROG-Info, Connecting to $ftphost over port $ftpport
with passive on;" . $ftp->code . ", " . $ftp->message . "\n" if $verbose;
                      } else {
                              print "$PROG-Info, Connecting to $ftphost over port $ftpport
with passive off;" . $ftp->code . ", " . $ftp->message . "\n" if $verbose;
                      };

                      print "$PROG-Info, Logging in as $username\n";
                      $ftp->login($username, $password) || die("$PROG-Fatal, Failed to log
in as $username - $!");
                      print "$PROG-Info, " . $ftp->code . ", " . $ftp->message . "\n";
```

Appendix T, Page 22 of 35

```
                    if (not $remotedir =~ /^$/) {
                            print "$PROG-Info, Changing remote direcotry to $remotedir\n"
if $verbose;
                            $ftp->cwd ($remotedir) || die("$PROG-Fatal, Failed to cwd to
$remotedir - $!");
                            print "$PROG-Info, " . $ftp->code . ", " . $ftp->message . "\n";
                            };

                    if ($binary) {
                            print "$PROG-Info, Setting mode to BINARY\n";
                            $ftp->binary();
                            print "$PROG-Info, " . $ftp->code . ", " . $ftp->message . "\n";
                    } else {
                            print "$PROG-Info, Setting mode to ASCII\n";
                            $ftp->ascii();
                            print "$PROG-Info, " . $ftp->code . ", " . $ftp->message . "\n";
                    };
                }
            };
        if (not $connected) {
                connect_failures++;
                if ($connect_failures > $retrycount) {
                        die("$PROG-Fatal, Failed to connect to $ftphost over port $ftpport -
$!");
                } else {
                        warn("$PROG-Warn, Failed to connect to $ftphost over port $ftpport,
will sleep 60 seconds and retry - $!");
                        $connected = 0;
                        sleep( $retryinterval );
                        redo;
                };
            };

#sleep (15);  # uncomment this line to sleep between transfers.  Useful for debugging.
                        # This timer gives you the chance to start & stop the FTP server to
simulate errors
        if ($put_files) {
                if ($ftp->put ($f)) {
                        $files_transferred++;
                } else {
                        $files_failed++;
                        $connected = 0;
                        $connect_failures++;
                        $exit_status = 1;
                        die("$PROG-Fatal, Lost connection or other error more than 3 times -
$!") if ($connect_failures > $retrycount);
                        $now = localtime;
                        warn( "$PROG-Warn, [$now] - Lost connection or other error during
transfer of $f, will retry - $!");
                        $ftp->quit();
                        sleep( $retryinterval );
                        redo;
```

```perl
                };
        } else {
                if ($ftp->get($f)) {
                        $files_transferred++;
                } else {
                        if ($ftp->code eq 550) {
                                $files_failed++;
                                $exit_status = 1;
                        } else {
                                $files_failed++;
                                $connected = 0;
                                $connect_failures++;
                                $exit_status = 1;
                                die("$PROG-Fatal, Lost connection or other error more than 3
times - $!") if ($connect_failures > $retrycount);
                                $now = localtime;
                                warn( "$PROG-Warn, [$now] - Lost connection or other error
during transfer of $f, will retry - $!");
                                $ftp->quit();
                                sleep( $retryinterval );
                                redo;
                        };
                };
        }
        my ($fsizeinbytes) = (stat($f))[7];
        $ftpmsg = "Transfer OK" if ($ftpmsg = "Opening data channel for file transfer.
Transfer OK" ); # Shorten success messages (may need changes for other OSes)
        $now = localtime;
        print LOG "[$now] - $direction $f, $fsizeinbytes bytes, Status: " . $ftp->code . ", "
. $ftp->message . "\n";
        print "$PROG-Info, [$now] - $direction $f, $fsizeinbytes bytes, Status: " . $ftp-
>code . ", " . $ftp->message . "\n";

}
$ftp->quit() || die("$PROG-Fatal, Failed to exit ftp - $!");

close LOG;
$now = localtime;
if (not $files_failed) {
        print "$PROG-Info, [$now] - All transfers completed successfully\n";
} else {
        print "$PROG-Fail, [$now] - $files_failed files failed to transfer, $files_transferred
files transferred successfully\n";
};
exit $exit_status;
```

1.8   cURL examples
1.8.1   Transfer a file to a server

$ curl -v --upload-file a.a -u myser:mypass ftp://ftpsite.pa.lcl/a.a
* About to connect() to 172.19.233.91 port 21 (#0)
*   Trying ftpsite.pa.lcl... connected
* Connected to ftpsite.pa.lcl (ftpsite.pa.lcl) port 21 (#0)
< 220-FileZilla Server version 0.9.34 beta
< 220-written by Tim Kosse (Tim.Kosse@gmx.de)
< 220 Please visit http://sourceforge.net/projects/filezilla/
> USER myuser
< 331 Password required for test
> PASS mypass
< 230 Logged on
> PWD
< 257 "/" is current directory.
* Entry path is '/'
> EPSV
* Connect data stream passively
< 229 Entering Extended Passive Mode (|||3406|)
*   Trying ftpsite.pa.lcl... connected
* Connecting to ftpsite.pa.lcl (ftpsite.pa.lcl) port 3406
> TYPE I
< 200 Type set to I
> STOR a.a
< 150 Connection accepted
} [data not shown]
  % Total   % Received % Xferd Average Speed Time   Time   Time Current
                             Dload Upload Total Spent   Left Speed
  0   2   0   0   0   2   0   86 --:--:-- --:--:-- --:--:--   86* Remembering we are in dir ""
< 226 Transfer OK
  0   2   0   0   0   2   0   77 --:--:-- --:--:-- --:--:--   0* Connection #0 to host 172.19.233.91 left intact

> QUIT
< 221 Goodbye
* Closing connection #0
$

1.4.1   Retrieve a file from a server

$ curl --output a.a -u test:test ftp://172.19.233.91/a.a
  % Total   % Received % Xferd Average Speed Time   Time   Time Current
                             Dload Upload Total Spent   Left Speed
  0   2   0   2   0   0   91   0 --:--:-- --:--:-- --:--:--   0
$ #
$ # …and with verbose
$ #
$ curl -v --output a.a -u myuser:mypass ftp://ftpsite.pa.lcl/a.a
* About to connect() to ftpsite.pa.lcl port 21 (#0)
*   Trying ftpsite.pa.lcl... connected

* Connected to ftpsite.pa.lcl (ftpsite.pa.lcl) port 21 (#0)
< 220-FileZilla Server version 0.9.34 beta
< 220-written by Tim Kosse (Tim.Kosse@gmx.de)
< 220 Please visit http://sourceforge.net/projects/filezilla/
> USER myuser
< 331 Password required for test
> PASS mypass
< 230 Logged on
> PWD
< 257 "/" is current directory.
* Entry path is '/'
> EPSV
* Connect data stream passively
< 229 Entering Extended Passive Mode (|||3421|)
*   Trying ftpsite.pa.lcl... connected
* Connecting to ftpsite.pa.lcl (ftpsite.pa.lcl) port 3421
> TYPE I
< 200 Type set to I
> SIZE a.a
< 213 2
> RETR a.a
< 150 Connection accepted
* Maxdownload = -1
* Getting file with size: 2
{ [data not shown]
  % Total   % Received % Xferd Average Speed   Time   Time   Time Current
                              Dload Upload   Total   Spent   Left Speed
  0   2   0   2   0   0   85   0 --:--:-- --:--:-- --:--:--   85* Remembering we are in
dir ""
< 226 Transfer OK
  0   2   0   2   0   0   84   0 --:--:-- --:--:-- --:--:--   0* Connection #0 to host
ftpsite.pa.lcl left intact

> QUIT
< 221 Goodbye
* Closing connection #0
$

Using a script suitable for Appworx

$ **cat curl_example.sh**
# Parameters:
#   source file
#   username
#   password
#   destination server
#   destionation file
arg="curl --upload-file $1 -u $2:$3 ftp://$4/$5"
echo $arg
eval $arg

```
err=$?
if [ $err -ne 0 ] ; then
      echo ERROR: curl failed, returned error status was $err
      exit 1
fi
# on Appworx, uncomment the following
#if [ -f $file ]; then
#      $SQLOPER_HOME/exec/FILESIZE $file $err
#      err=$?
#fi
exit $err
```

$ ./curl_example.sh a.a test test 172.19.233.91 a.a
```
curl --upload-file a.a -u test:test ftp://172.19.233.91/a.a
 % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
  0     2    0     0    0     2      0     82 --:--:-- --:--:-- --:--:--     0
```
$ ./curl_example.sh nosuchfile test test 172.19.233.91 a.a
```
curl --upload-file nosuchfile -u test:test ftp://172.19.233.91/a.a
curl: Can't open 'nosuchfile'!
curl: try 'curl --help' or 'curl --manual' for more information
ERROR: curl failed, returned error status was 26
$
```

1.9   SFTP examples (not using SCP)
1.9.1   Using a shell script

1.9.2   Using a Perl program that wraps SFTP

Notes:
- the Perl program was constructed from examples available on the Internet.
- the Perl module Net::SFTP::Foreign and others are required. These may not be installed by default on your system but can be with a request to Enterprise Infrastructure.

$ ./lcbsftp.pl

Usage: lcbsftp [options]

Copy a set of files between a server and an SFTP "site".

Before copying the files, they are checked to make sure that they exist.

Options:
```
--get, --put          direction of transfer (default is put)
-s, --sftphost=DNSNAME  sftphost ex: sftp.lcb.state.pa.us (required)
-u, --username=USERNAME username on the remote system (required)
-p, --password=PASSWORD password on the remote system (required)
-x, --xfrlist=FILE      filename containing list of files to be transfered,
                 one filename per line (required)
-r, --remotedir=PATH    Remote directory for CWD command(optional)
-l, --logfile=FILE      Log file for results/status messages (required)
-t, --port=PORTNUMBER   TCP port for SFTP, default port 22, the standard port

-v, --verbose           Print extra logging information
```
$ #
$ # Put/send files
$ #
$ ./lcbsftp.pl --put -s sftpsite.pa.lcl -u myuser -p 'mypass' -x list.dat-l l.log
lcbsftp-Info, [Thu May 12 14:35:57 2011]
lcbsftp-Info, Checking input file a.a
lcbsftp-Info, a.a, 2 bytes exists
lcbsftp-Info, Checking input file b.b
lcbsftp-Info, b.b, 2 bytes exists
lcbsftp-Info, Checking input file c.c
lcbsftp-Info, c.c, 2 bytes exists
lcbsftp-Info, All 3 files in l.l exist and are accessible
lcbsftp-Info, Connecting to SFTP server at Thu May 12 14:35:57 2011
lcbsftp-Info, [Thu May 12 14:35:57 2011] - Starting transfers
lcbsftp-Info, Connecting to sftpsite.pa.lcl over port 22 as myuser
lcbsftp-Info, [Thu May 12 14:35:58 2011] - put a.a, 2 bytes, Status: 0, Transfer OK
lcbsftp-Info, [Thu May 12 14:35:58 2011] - put b.b, 2 bytes, Status: 0, Transfer OK

```
lcbsftp-Info, [Thu May 12 14:35:58 2011] - put c.c, 2 bytes, Status: 0, Transfer OK
lcbsftp-Info, [Thu May 12 14:35:58 2011] - All transfers completed successfully
$ #
$ # Get/Retrieve files
$ #
$ ./lcbsftp.pl --get -s sftpsite.pa.lcl  -u myuser -p 'mypass'  -x list.dat-l l.log
lcbsftp-Info, [Thu May 12 14:33:54 2011]
lcbsftp-Info, Connecting to SFTP server at Thu May 12 14:33:54 2011
lcbsftp-Info, [Thu May 12 14:33:54 2011] - Starting transfers
lcbsftp-Info, Connecting to sftpsite.pa.lcl over port 22 as myuser
lcbsftp-Info, [Thu May 12 14:33:54 2011] - get a.a, 2 bytes, Status: 0, Transfer OK
lcbsftp-Info, [Thu May 12 14:33:54 2011] - get b.b, 2 bytes, Status: 0, Transfer OK
lcbsftp-Info, [Thu May 12 14:33:54 2011] - get c.c, 2 bytes, Status: 0, Transfer OK
lcbsftp-Info, [Thu May 12 14:33:54 2011] - All transfers completed successfully
$ #
$ # Try to put some files that don't exist
$ #
$ ./lcbsftp.pl --put -s sftpsite.pa.lcl  -u myuser -p 'mypass'  -x list.dat-l l.log
lcbsftp-Info, [Thu May 12 14:37:10 2011]
lcbsftp-Info, Checking input file a.a
lcbsftp-Info, a.a, 2 bytes exists
lcbsftp-Info, Checking input file b.b
lcbsftp-Info, b.b, 2 bytes exists
lcbsftp-Info, Checking input file c.c
lcbsftp-Info, c.c, 2 bytes exists
lcbsftp-Warning, Source file d.d does not exist at ./lcbsftp.pl line 101.
lcbsftp-Fatal, One or more source files do not exist - Bad file descriptor at ./lcbsftp.pl line 117.
$ #
$ # Try to get some files that don't exist
$ #
$ ./lcbsftp.pl --get -s sftpsite.pa.lcl  -u myuser -p 'mypass'  -x list.dat-l l.log
lcbsftp-Info, [Thu May 12 14:21:14 2011]
lcbsftp-Info, Connecting to SFTP server at Thu May 12 14:21:14 2011
lcbsftp-Info, [Thu May 12 14:21:14 2011] - Starting transfers
lcbsftp-Info, Connecting to sftpsite.pa.lcl over port 22 as myuser
lcbsftp-Info, [Thu May 12 14:21:15 2011] - get a.a, 2 bytes, Status: 0, Transfer OK
lcbsftp-Info, [Thu May 12 14:21:15 2011] - get b.b, 2 bytes, Status: 0, Transfer OK
lcbsftp-Info, [Thu May 12 14:21:15 2011] - get c.c, 2 bytes, Status: 0, Transfer OK
lcbsftp-Warn, [Thu May 12 14:21:15 2011] - Failed to transfer d.d, 2 - No such file at ./lcbsftp.pl line 206.
lcbsftp-Info, [Thu May 12 14:21:15 2011] - get d.d,  bytes, Status: 2, No such file
lcbsftp-Fatal, Failed to exit ftp - No such file or directory at ./lcbsftp.pl line 233.
$
```

…and the code itself

```
#!/usr/bin/perl
use strict;
#use feature "switch";
#use lib '~';           # Add my home directory to the include path to pick up
Net::SFTP::Foreign
                       # Not needed when package is installed by root
```

```perl
use Net::SFTP::Foreign; # SFTP package that uses the native SFTP program
use Net::SFTP::Foreign::Constants qw(:status);
use Getopt::Long;
use IO::Pty;
use Expect;

(my $PROG = $0) =~ s#^.*/([^.]*)(\.pl)?$#$1#;

my $USAGE = qq{\
Usage:  $PROG [options]

Copy a set of files between a server and an SFTP "site".

Before copying the files, they are checked to make sure that they exist.

Options:
--get, --put          direction of transfer (default is put)
-s, --sftphost=DNSNAME  sftphost ex: sftp.lcb.state.pa.us (required)
-u, --username=USERNAME username on the remote system (required)
-p, --password=PASSWORD password on the remote system (required)
-x, --xfrlist=FILE      filename containing list of files to be transfered,
                  one filename per line (required)
-r, --remotedir=PATH        Remote directory for CWD command(optional)
-l, --logfile=FILE      Log file for results/status messages (required)
-t, --port=PORTNUMBER   TCP port for SFTP, default port 22, the standard port

-v, --verbose          Print extra logging information
};

my $put_files = 1;
my $sftphost;
my $username;
my $password;
my $xfrlistfile;
my $remotedir = "";
my $logfile;
my $sftpport = 22;
my $verbose = 0;
my $retrycount = 3;
my $retryinterval = 60;

my $result = GetOptions (
                    'put' => \$put_files,                      # transfer direction
(get or put).
                    'get' => sub { $put_files = 0 },    #  Default put
                    's|sftphost=s' => \$sftphost,             # sftphost ex:
sftp.lcb.state.pa.us (required)
                    'u|username=s' => \$username,             # username on the
remote system (required)
                    'p|password=s' => \$password,             # password on the
remote system (required)
                    'x|xfrlist=s' => \$xfrlistfile,          # list of files to be
transfered(required)
```

```perl
                              'r|remotedir:s' => \$remotedir,            # remote directory
(optional)
                              'l|logfile=s' => \$logfile,                # log file for
results/status messages (required)
                              't|port:i' => \$sftpport,                  # tcp port, default
port 22, the standard port
                              'v|verbose' => \$verbose,
                              'c|retrycount:i' => \$retrycount,    # Count of retries.  Default
is 3;
                              'w|retryinterval:i' => \$retryinterval       # Sleep time
between retries in seconds.  Default 3
                              );

my $debug=0;                # Debug flag for Net::FTP module.  Set to same value as
verbose
$debug = $verbose;

my $sftpcode;               # Status code from last FTP command
my $sftpmsg;          # Status messages from FTP command

# Exit if they don't specify one of the required options or if the options are malformed.
die "$USAGE" if ($sftphost =~ /^$/ or $username =~ /^$/ or $logfile =~ /^$/ or
$xfrlistfile =~ /^$/);
die "$USAGE" if (!$result);

my $direction = "put";
$direction = "get" if (! $put_files);

my $now=localtime;
print "$PROG-Info, [$now]\n";

open(LOG, ">", $logfile) or die "$PROG-Fatal, Unable to open log file $logfile - $!";

open(XFRLIST, "<", $xfrlistfile) or die "$PROG-Fatal, Unable to open source list file
$xfrlistfile - $!";
my @srcfiles = <XFRLIST>;

close XFRLIST or die "$PROG-Fatal, Unable to close source list file $xfrlistfile - $!";

my $xfrlistOK = 1;
my $xfrlistcount = 0;
foreach my $f ( @srcfiles )
{
        chomp( $f );                # kill the trailing new line
        if ($put_files) {
            if (-e $f) {
                    print "$PROG-Info, Checking input file $f\n";
                    my ($fsizeinbytes) = (stat($f))[7];          # get the size
                    if (not $fsizeinbytes ) {
                            warn "$PROG-Warning, Source file $f is empty";
                            $xfrlistOK = 0;
                    } else {
                            print "$PROG-Info, $f, $fsizeinbytes bytes exists\n";
```

```perl
                }
        } else {
                warn "$PROG-Warning, Source file $f does not exist";
                $xfrlistOK = 0;
        };
        $xfrlistcount++;
    } else {
        $xfrlistcount++;
        if ($f =~ /^$/ ) {
                warn "$PROG-Warning, Source file at line $xfrlistcount is blank";
                $xfrlistOK = 0;
        }
    }
};

if (not $xfrlistOK ) {
        close LOG;
        close XFRLIST;
        die "$PROG-Fatal, One or more source files do not exist - $!" if ($put_files);
        die "$PROG-Fatal, One or more source filenames is blank - $!" if (!$put_files);
};

close XFRLIST;
print "$PROG-Info, All $xfrlistcount files in $xfrlistfile exist and are accessible\n" if
($put_files);
$now = localtime;
print "$PROG-Info, Connecting to SFTP server at $now\n";

my $connected = 0;  # Flag for whether we are or are not connected.
my $connect_failures = 0;

$now = localtime;
print "$PROG-Info, [$now] - Starting transfers\n";
my $exit_status = 0;
my $files_transferred = 0;
my $files_failed = 0;

my $sftp;
my %sftpargs;
if ($verbose) {
        %sftpargs = (host=>$sftphost,
                        user=>$username,
                        password=>$password,
                        port=>$sftpport,
                        more => '-v');
} else {
        %sftpargs = (host=>$sftphost,
                        user=>$username,
                        password=>$password,
                        port=>$sftpport);
};

foreach my $f(@srcfiles)
```

```perl
{
        chomp( $f );                    # kill the trailing new line
        if (not $connected) {
                print "$PROG-Info, Connecting to $sftphost over port $sftpport as
$username\n";
                if ($sftp = Net::SFTP::Foreign->new($sftphost,%sftpargs)) {
                        $connected = 1;
                        $connect_failures = 0;
                        $sftpcode = $sftp->status + 0; # Force it to number
                        $sftpmsg = $sftp->status;
                        print "$PROG-Info, " . $sftpcode . ", " . $sftpmsg . "\n" if ($sftp-
>error);
                }
        };
        if (not $connected) {
                $connect_failures++;
                if ($connect_failures > $retrycount) {
                        die("$PROG-Fatal, Failed to connect to $sftphost over port $sftpport -
$!");
                } else {
                        warn("$PROG-Warn, Failed to connect to $sftphost over port $sftpport,
will sleep 60 seconds and retry - $!");
                        $connected = 0;
                        sleep( $retryinterval );
                        redo;
                };
        } else {
                if (not $remotedir =~ /^$/) {
                        print "$PROG-Info, Changing remote direcotry to $remotedir\n" if
$verbose;
                        $sftp->setcwd ($remotedir) || die("$PROG-Fatal, Failed to cwd to
$remotedir - $!");
                        $sftpcode = $sftp->status + 0; # Force it to number
                        $sftpmsg = $sftp->status;
                        print "$PROG-Info, " . $sftpcode . ", " . $sftpmsg . "\n";
                };
        };

#sleep (15);  # uncomment this line to sleep between transfers.  Useful for debugging.
                        # This timer gives you the chance to start & stop the FTP server to
simulate errors
        if ($put_files) {
                if ($sftp->put ($f, $f)) {
                        $files_transferred++;
                } else {
                        $files_failed++;
                        $connected = 0;
                        $connect_failures++;
                        $exit_status = 1;
                        die("$PROG-Fatal, Lost connection or other error more than 3 times -
$!") if ($connect_failures > $retrycount);
                        $now = localtime;
```

```perl
                        warn( "$PROG-Warn, [$now] - Lost connection or other error during
transfer of $f, will retry - $!");
                        undef $sftp;
                        sleep( $retryinterval );
                        redo;
                };
        } else {
                if ($sftp->get($f, $f)) {
                        $files_transferred++;
                } else {
                        $sftpcode = $sftp->status + 0; # Force it to number
                        $sftpmsg = $sftp->status;
                        warn( "$PROG-Warn, [$now] - Failed to transfer $f, $sftpcode -
$sftpmsg");
                        $files_failed++;
                        if ($sftp->status == SSH2_FX_NO_SUCH_FILE) {
                                $files_failed++;
                                $exit_status = 1;
                        } else {
                                $connected = 0;
                                $connect_failures++;
                                $exit_status = 1;
                                die("$PROG-Fatal, Lost connection or other error more than 3
times - $!") if ($connect_failures > $retrycount);
                                $now = localtime;
                                warn( "$PROG-Warn, [$now] - Lost connection or other error
during transfer of $f, will retry - $!");
                                undef $sftp;
                                sleep( $retryinterval );
                                redo;
                        };
                };
        }
        my ($fsizeinbytes) = (stat($f))[7];
        $sftpcode = $sftp->status + 0; # Force it to number
        $sftpmsg = $sftp->status;
        $sftpmsg = "Transfer OK" unless ($sftpcode); # Clean up the message on success.
Otherwise, just prints zero
        $now = localtime;
        print LOG "[$now] - $direction $f, $fsizeinbytes bytes, Status: " . $sftpcode . ", " .
$sftpmsg . "\n";
        print "$PROG-Info, [$now] - $direction $f, $fsizeinbytes bytes, Status: " .
$sftpcode . ", " . $sftpmsg . "\n";

}
close LOG;
$now = localtime;
if (not $files_failed) {
        print "$PROG-Info, [$now] - All transfers completed successfully\n";
} else {
        print "$PROG-Fail, [$now] - $files_failed files failed to transfer, $files_transferred
files transferred successfully\n";
};
```

```
exit $exit_status;
```

APPENDIX U

SQL STANDARDS AND GUIDELINES

Information Technology Standard **Office of Information Technology Services**	

Subject: SQL Standards and Guidelines	*Number:* 5.0
Date: July 10, 2012	*By Direction Of:* Mary Benner, Chief Information Officer

Importance of Coding Standards

To develop reliable, maintainable applications and reduce development cost as well as time, you must follow coding standards.

In short, advantages of coding standards are:

- Improve the readability of the code.
- Easy to understand and maintain by others.
- Maintainable applications.
- Remove complexity.

Common Development Standards

- Avoid hard coding values that may need to be changed. Instead, use mechanisms that allow for changes at run-time. This may include configuration files, command line arguments, or database tables for values.
- Code must be readable to be maintained
- Platform and environment –specific code should be avoided except where absolutely necessary
- Structured code - Aim to improve the clarity, quality and development time by making use of subroutines, block structures and "for and while" loops, and limiting the "goto" statement which can lead to "spaghetti code" (for those languages that allow "goto" statements)
- Build generic or components packages for functionality that is used across the system
- Always use a global debug flag to enable informational logging, as and when required. Default informational logging in itself is an extremely costly activity that slows the entire processing down.
- Always use "wrappers" and "global debug flag" to enhance code before customizing COTS products. They must be clearly defined.
- All code should always be tuned for the best possible performance, on both server and client side. Appropriate indexes and caching techniques must be utilized during coding and special attention given to writing code that performs efficiently.
- Basic tuning and testing for performance should be done when coding and unit testing, therefore mitigating potential issues prior to full performance testing.
- Any output should allow for sorting and filtering.

- Whenever changes are made to code, comments must be added to the code to clarify the changes made.
- Unless specified and requested by the user/requestor, all displays or printouts of item information should be done in code order (ascending). Any deviation of this standard by the user must be documented. This would be for any new development or anytime existing code is opened to fix or change it.
- Any file/data that is deemed confidential must be transferred in a secure manner. OA ITB SEC031 (Encryption Standards for Data In Motion) states the methods that are permitted and the minimum encryption level. PLCB policy requires credit card information, social security numbers and HR information are deemed confidential and must be encrypted. OA ITB SEC019 also states where confidential information can be transmitted to. OA ITB standards are available at the following location.
  - ITB SEC031 – Encryption Standards for Data In Transit
    http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec031.html
  - ITB SEC019 – Policies and Procedures for Protecting Commonwealth Electronic Data
    http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec019.html

Specific Development Standards

- Additional coding standards are further detailed for the respective language/tool/framework in specific documents as noted below:
  - 1.0 .Net Coding Standards
  - 2.0 Java Coding Standards and Guidelines
  - 3.0 BI Publisher Standards and Guidelines
  - 4.0 File Transfer Standards and Guidelines
  - 5.0 SQL Standards and Guidelines
  - 6.0 Batch Interface Coding Standards
  - 7.0 Reporting Standards

- Error handling – All errors must be handled and planned for. Optimal error handling ensures that the program continues and does not crash in case an error is encountered. Errors must be logged appropriately. In case of fatal errors, the program stops processing, reports the error, and exits gracefully.

Example for PL/SQL:

Begin

    Select emp_id, employee_name into p_emp_id, p_employee_name from employees where department_id=p_dept_id;

End;

This block of code, without the corresponding "exception" block, will not handle "no rows found" or "too many rows found" errors. For a select statement, both these clauses are expected and must be handled, as an appropriate error handling mechanism. The "when others" clause can be used to catch the unexpected error, clean up after the unexpected error, and exit or propagate the error outside the program.

SQL Standards

PL/SQL supports four different SQL DML (Data Manipulation Language) statements: INSERT, UPDATE, DELETE, and SELECT. Each can have several clauses, making SQL very complex. Use uppercase for all SQL reserved words. Left align the reserved words to create a vertical border between them and the SQL code body.

SELECT	INSERT	UPDATE	DELETE
FROM	INTO	SET	FROM
WHERE	VALUES	WHERE	WHERE
AND			
OR	INSERT		
GROUP BY	INTO		
HAVING	SELECT		
AND	FROM		
OR	WHERE		
ORDER BY			

- In a where clause (or having clause), constants or bind variables should always be on the right hand side of the operator.

- Never use unqualified inserts. Always specify the list of columns.

- Do not use compound sub-queries when the same end may be achieved by an equivalent join query.

- Whenever possible, use existence tests instead of sub-queries, IN, or NOT IN.

- Multiple objects associated with a key word, such as a list of columns, should each be on a separate line.

- The SELECT key word for sub-queries should be indented from the WHERE key word above it. The normal formatting rules apply to sub-queries.

- Always use a space on both sides of an operator. For example, use col1 = col2, not col1=col2.

- Make the table alias meaningful, not just a, b, c.

Formatting examples:

SELECT co.name,

co.ceo,

```sql
        c_addr.city,

        c_addr.state

INTO    v_name,

        v_ceo,

        v_city,

        v_state

FROM    companies co,

        company_addresses c_addr

WHERE  co.id = c_addr.id

AND    co.start_date = trunc(sysdate) - 200

AND    c_addr.type = 'HOME'

AND    exists

        (select 1

         from company_definitions def,

               company co

         where def.outline = co.outline)

ORDER  BY co.name,

         co.ceo;

INSERT

INTO  some_table

      (column1,

       column2,

       column3,

       column4)

VALUES (123,

         'abc',

         sysdate,

         user);

UPDATE my_table
```

```
SET    some_column = 'Hello world'

WHERE  another_column = 'TEST';
```

Programming standards for PL/SQL

- The PL/SQL packages or code written must be modular and structured. Avoid the use of GO TO etc…

- Reserved words and key Oracle words to be Capitalized

  SELECT FROM WHERE

- Source code indentation is essential.

- Database trigger size is limited to 60 lines of code. If the logic of the trigger requires more than 60 lines of code, it is better to create a PL/SQL package and call it from the trigger. The PL/SQL package is stored in the database and is already in a compiled state.

- Avoid triggers that duplicate any functionality already built into Oracle.

- Within a trigger, DDL statements are not allowed.

- No transaction control statements are allowed in a trigger (ROLLBACK, SAVEPOINT, COMMIT).

- Extensive comments need to be incorporated into the code.

- Initialize the variables prior to use within the source code.

Cursor Definitions

- Cursor will refer to the object name(s) to which it is defined; be initcap, and prefixed with 'C'

- Use aliases will uniquely identify the fields:

  CURSOR CurSoHdrLns IS

  SELECT   a.order_number   order_number,

        b.inventory_item_id   inventory_item_id

```
            b.warehouse_id   warehouse_id

    FROM        so_lines            a

                so_headers          b

    WHERE   a.header_id = b.header_id;
```

- Ensure that the driving table in all SELECT statements is placed last in the FROM clause.

- Ensure that for every OPEN CURSOR statement there is a corresponding CLOSE CURSOR statement.

- Wherever possible use FOR Record in Cursor LOOP rather than OPEN CURSOR statement.

- To debug the PL/SQL package, use the DBMS_OUTPUT routine. SET SERVEROUTPUT ON SIZE 1000000 may be needed to generate the output. Note that the output is generated after the package completes or terminates with an error. For a given session, the DBMS_OUTPUT buffer is not cleared. Do not use the routine to generate flat files or reports.

- Use the PL/SQL design to re-commence a terminated job; do not re-process the processed records unless there is an explicit requirement.

- Instead of incorporating the programming logic in the Trigger or an Alert, it is better to write the logic as a package procedure. The advantage is that the package is compiled, parsed and stored in the database and therefore it requires primarily for fetching and executing.

Exception Handling

PL/SQL exception handling is designed to control three types of errors: system errors issued from the database, like 'duplicate index' and 'out of memory;' errors caused by a user action; and warnings issued to the user from the application. Each program block in PL/SQL, whether named or unnamed, can have its own exception section. Programmers should create nested blocks only to localize exception processing. Remember, once an exception is raised, either by the system or by the program, the execution stream passes to the exception section, and cannot be returned to the block's code body.

Do not use exception handlers for normal program exits. Using the exception handler for an exit, without raising a true exception is unstructured coding, similar to using a GOTO. Errors are declared as named or unnamed system errors, and named and unnamed programmer

defined errors. If an error is not trapped in the local code block, it cascades up to the next higher block until it is trapped, or passes to the user as an unhandled exception and halts execution. The following table describes the types of errors and their scope.

Named system exceptions-These exceptions are globally available because they are not declared or confined to a particular block of code. You can raise and handle a named system exception in any block.

Named programmer-defined exceptions-These exceptions can only be raised and handled within the block they are declared, or in any nested child block.

Unnamed system exceptions-These errors can be handled in any PL/SQL block via the WHEN OTHERS clause.

Unnamed programmer defined exceptions-This exception is only defined in the call to RAISE_APPLICATION_ERROR, and is then passed back to the calling program.

All errors must be trapped by the application. No exception will be passed to the user unhandled. The use of the WHEN OTHERS clause is allowed where appropriate, but should not be abused; it does not allow for a very elegant error handling behavior or for formatted messages presented to the user. Programmers are encouraged to think about possible error conditions and trap them individually. Be aware of implicit save-points in PL/SQL.

Note: All possible exceptions should be trapped before executing WHEN OTHERS Exception at the end of program unit. DO NOT leave NULL statement in this clause and always use SQLERRM and return to the calling program.

Whenever PL/SQL executes a new block of code, it first issues a save point. When an exception is raised, it causes Oracle to roll back the transaction to the save point. Any changes to the database are rolled back. Also, any changes to OUT and IN OUT parameters are similarly rolled back.

It is considered good, structured PL/SQL programming to use named exceptions to trap problems specific to the application. Your program may need to trap conditions such as "negative balance for account" or "reservation date cannot be in the past." While significantly different from system errors, these are still exceptions to normal processing, and should therefore be handled in the same manner. One of the most useful aspects of the PL/SQL exception handling model is that it does not make any structural distinction between inter errors and application-specific errors.

"to debug the PL/SQL … use SET SERVEROUTPUT ON SIZE UNLIMITED   in SQL*PLUS.
DBMS_OUTPUT.ENABLE(NULL)   in PL/SQL

Application-specific errors are named in the declaration section of the PL/SQL block. Its scope is limited to the block in which it is declared. See the following example:

PROCEDURE xmc_014_annual_sales (company_id IN company.company_id%TYPE)

IS

   v_sales_balance   NUMBER(14,2);

   invalid_company_id   EXCEPTION;

   no_sales_for_company   EXCEPTION;

   negative_sales   EXCEPTION;

BEGIN

   … code body …

  IF v_sales_balance = 0 THEN

     raise no_sales_for_company;

  ELSIF v_sales_balance < 0 THEN

     raise negative_sales;

  ELSE

     … normal processing statements …

  END IF;

EXCEPTION

  WHEN invalid_compay_id THEN

     … exception processing statements …

  WHEN no_sales_for_company OR negative_sales THEN

    … exception processing statements …

  WHEN NO_DATA_FOUND THEN

    … exception processing statements …

```
   WHEN OTHERS THEN

      … exception processing statements with relevant error messages
END;
```

Miscellaneous SQL / PL/SQL Guidelines

- Avoid using the ROWID pseudo-column for table updates. The resulting code is difficult to read, and does not comply with the ANSI SQL standards. References to ROWID can also cause portability problems and problems when upgrading to a new database release.

- Use variable, function, and procedure names that help self-document the code. If the code does not read correctly as an English sentence, the name should be modified.

- In a compound IF statement (IF a OR b THEN, IF a AND b THEN), the PL/SQL interpreter fully evaluates BOTH expressions when determining the truth-value. If part of the expression is simple, and part complex, or if one or the other statement is likely to be false, break the condition into nested IF..THEN constructs to avoid evaluating the more expensive statement. This helps improve code performance

- Take advantage of the %FOUND, %NOTFOUND, %ROWCOUNT, and %ISOPEN attributes when dealing with cursors. The %ROWCOUNT is great for operations like showing the top 10 values from a query.

- Do not use the COUNT(*) SQL group function to check for the existence of a single table row. It is a very expensive operation, since a table scan is almost always guaranteed. Also, a query of the record is still required even after the COUNT (*) has determined that a record exists. Instead, use the FETCH on a cursor, with the %NOTFOUND attribute to perform the same function. If the %NOTFOUND is TRUE after the first fetch, then no records were returned. If a unique row is required, FETCH again. If on the second fetch, the %NOTFOUND attribute is TRUE, then the row is unique.

- When creating functions and procedures, their parameters normally cannot be declared with a size constraint. However, if the %TYPE and %ROWTYPE declaration is used to anchor the parameter to another variable or record, the size will be constrained to the anchor variable. The size is resolved at compile time.

- Avoid the use of IN OUT parameters. Do not have OUT parameters defined for functions. Always assign values to all OUT and IN OUT parameters. Remember that any values assigned in a procedure body get rolled back when an exception is raised.

- Comment out or remove DBMS_OUTPUT statements after debugging the code and before deploying code to Production. Uncommented DBMS_OUTPUT statements will have overhead on system resources (Esp. I/O operations) during the execution of PLSQL program. Alternatively, you can also use a parameter to suppress display/debug messages which can be turned on/off using a command line parameter (p_debug_flag varchar2(1) "Y" or "N")

- Avoid generating report outputs from a PLSQL program. Generating report outputs from PLSQL program is only possible through by calling FND_FILE package. This package in turn calls UTL_FILE writing outputs concurrent program log/output file. FND_FILE package has been given to record major exceptions in the program and report in the output/log files. Using this package for showing transactions in

output/log file will consume system resources (Esp. I/O operations). Minimize its usage. Consider temporary table or global temp table to capture the data.

- "Unless specified and requested by the user/requestor, all displays or printouts of item information should be done in code order (ascending). " is more appropriate as a reporting standard, not a SQL or PL/SQL standard

- Who columns must be populated for auditing purposes when inserting/updating a table using PLSQL program. Use below table for guidance:

Column Name	Type	Value Derivation
CREATED_BY	Not Null	FND_GLOBAL.USER_ID
CREATION_DATE	Not Null	SYSDATE
LAST_UPDATED_BY	Not Null	FND_GLOBAL.USER_ID
LAST_UPDATE_DATE	Not Null	SYSDATE
LAST_UPDATE_LOGIN		FND_GLOBAL.LOGIN_ID
REQUEST_ID		FND_GLOBAL.REQUEST_ID
PROGRAM_APPLICATION_ID		FND_CONCURRENT_PROGRAM
PROGRAM_ID		FND_CONCURRENT_PROGRAM
PROGRAM_UPDATE_DATE		PROGRAM_UPDATE_DATE

APPENDIX V

BATCH INTERFACE CODING STANDARDS

Information Technology Standard	
Office of Information Technology Services	

Subject: Batch Interface Coding Standards	*Number:* 6.0
Date: July 9, 2012	*By Direction Of:* Mary Benner, Chief Information Officer

Importance of Coding Standards

To develop reliable, maintainable applications and reduce development cost as well as time, you must follow coding standards.

In short, advantages of coding standards are:

- Improve the readability of the code.
- Easy to understand and maintain by others.
- Maintainable applications.
- Remove complexity.

Common Development Standards

- Avoid hard coding values that may need to be changed. Instead, use mechanisms that allow for changes at run-time. This may include configuration files, command line arguments, or database tables for values.
- Code must be readable to be maintained
- Platform and environment –specific code should be avoided except where absolutely necessary
- Structured code - Aim to improve the clarity, quality and development time by making use of subroutines, block structures and "for and while" loops, and limiting the "goto" statement which can lead to "spaghetti code" (for those languages that allow "goto" statements)
- Build generic or components packages for functionality that is used across the system
- Always use a global debug flag to enable informational logging, as and when required. Default informational logging in itself is an extremely costly activity that slows the entire processing down.
- Always use "wrappers" to enhance code before customizing COTS products.
- All code should always be tuned for the best possible performance, on both server and client side. Appropriate indexes and caching techniques must be utilized during coding and special attention given to writing code that performs efficiently.
- Basic tuning and testing for performance should be done when coding and unit testing, therefore mitigating potential issues prior to full performance testing.
- Any output should allow for sorting and filtering.

- Whenever changes are made to code, comments must be added to the code to clarify the changes made.
- Unless specified and requested by the user/requestor, all displays or printouts of item information should be done in code order (ascending). Any deviation of this standard by the user must be documented. This would be for any new development or anytime existing code is opened to fix or change it.
- Any file/data that is deemed confidential must be transferred in a secure manner. OA ITB SEC031 (Encryption Standards for Data In Motion) states the methods that are permitted and the minimum encryption level. PLCB policy requires credit card information, social security numbers and HR information are deemed confidential and must be encrypted. OA ITB SEC019 also states where confidential information can be transmitted to. OA ITB standards are available at the following location.
    - ITB SEC031 – Encryption Standards for Data In Transit
      http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec031.html
    - ITB SEC019 – Policies and Procedures for Protecting Commonwealth Electronic Data
      http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec019.html

Specific Development Standards

- Additional coding standards are further detailed for the respective language/tool/framework in specific documents as noted below:
    - 1.0 .Net Coding Standards
    - 2.0 Java Coding Standards and Guidelines
    - 3.0 BI Publisher Standards and Guidelines
    - 4.0 File Transfer Standards and Guidelines
    - 5.0 SQL Standards and Guidelines
    - 6.0 Batch Interface Coding Standards
    - 7.0 Reporting Standards
- Error handling – All errors must be handled and planned for. Optimal error handling ensures that the program continues and does not crash in case an error is encountered. Errors must be logged appropriately. In case of fatal errors, the program stops processing, reports the error, and exits gracefully.

  Example for PL/SQL:

  Begin
          Select emp_id, employee_name into p_emp_id, p_employee_name from employees where department_id=p_dept_id;
  End;

  This block of code, without the corresponding "exception" block, will not handle "no rows found" or "too many rows found" errors. For a select statement, both these clauses are expected and must be handled, as an appropriate error handling mechanism. The "when

others" clause can be used to catch the unexpected error, clean up after the unexpected error, and exit or propagate the error outside the program.

Scope of this document

The scope of this document is to provide guidelines and standards for developing file oriented interfaces (sometimes known as "batch interfaces") between applications.

Overview

Standards are needed to ensure that data requests are processed
- Accurately
- Efficiently
- Reliably

The PLCB recognizes that sometimes exceptions to the standards will be needed because of requirements outside of the PLCB's control.

Extract, Transform, Load (ETL) is a process of importing and exporting to/from data from a database and/or file. ETL extracts data from an outside source, transforms the data to fit operational needs, and loads the data to the end target, which is; in most cases is a database.

Many different tools and technologies are available to extract, transform and load data. Those technologies are outside the scope of this document.

Accuracy

Accuracy includes, but is not limited to:
- Verifying that all of the data is transferred
- Transferring only valid data
- Handling invalid data

Verification is the process of ensuring that all of the data sent, was received and loaded into the destination application. There are multiple ways to this, all of which involve control totals:
- Record, item or similar counts
- Hash totals of key fields
- Total dollars transferred or even credits vs. debits

For any of these to work, a control total is calculated when the data is extracted and then the control total is re-calculated when the data is loaded. If the totals match, all of the data was loaded. Control totals do not cover every possible problem, but they do cover the most common problems.

Another form of control total is a reconciliation of the source and destination applications that occurs immediately after the interface runs.

Validation is the process of ensuring that the data is valid. Valid data is data that is syntactically correct or passes referential integrity. It is not necessary data that is correct. The distinction is important. An interface can validate that a cost center exists. It cannot validate that an item should have been charged to that cost center as opposed to some other valid cost center.

Examples of validations include:
- Verifying that the date exists on the Gregorian calendar
- Verifying that dates are in sequence (start date comes before the end date)
- Validating that data exists in its respective "master table". Ex: the cost center exists in the cost center table or the item exists in the item table.

Handling invalid data is the process of ensuring that data that cannot be processed is not lost and/or is easily recoverable. An interface that encounters invalid data must either log the problem and/or save the data for later processing. Examples include:
- Creating suspense file or tables to "hold" the data temporarily
- Generating error logs or reports detailing the problems encountered
- Crafting joins or using other methods to ensure that invalid data does not cause transactions to be "lost". For example, if RIMS reports inventory for an item whose item number does not exist in the RMS item table; the interface must ensure that the transaction does not "disappear" just because the SELECT statement's join would fail. Allowances or consideration must be made to either handle or detect this condition. The possibly invalid inventory cannot disappear.

Efficiency

Even though file oriented interfaces tend to be run as a batch job, they still need to carefully manage their use of system resources such as disk I/O and CPU time; and to complete in a reasonable timeframe.

Interfaces should be designed to manage time and disk space.

Managing time well includes such things as:
- Minimizing the number of steps (queries) or passes needed to retrieve the data.
- Providing sufficient selection criteria (on the where clause(s)) to quickly reduce the amount of data under consideration. This requires considering both technical and business requirements and is often unsuccessful without both.
- Extract only the data necessary from the tables necessary unless by extracting extra data, the number of passes through the database can be reduced. (In this case, intermediate files or tables may be needed.)
- Minimize record or table locks where possible

Managing disk space wisely includes such things as:
- Purging old data. Archiving without purging just moves the problem around. It does not solve it.
- Designing a directory strategy that uses deeper rather than wider directories. Directories with extremely large numbers of files perform very badly with GUI tools like Windows Explorer or WinSCP. A practical guideline would be 1,000 files in a single directory.

Reliability

File oriented interfaces must be reliable. Interfaces that frequently fail tend to cause large quantities of manpower to be expended to find and fix problems after the fact.

Reliable interfaces are visible to the centralized job scheduler. Appworx is the PLCB's centralized, cross system, job scheduler. Using a single scheduler can help the PLCB minimize scheduling conflicts and makes schedule changes more straightforward.   Appworx supports many built-in commands such as those for running SQL statements or stored procedures. In addition, almost any command or executable that can be run at a command line can be scheduled via Appworx.

Reliable interfaces signal errors. The steps of the interface must also set an exit status that can be read by Appworx, the operating system shell, etc… If a step fails, it should not allow the job to continue on as if no error has occurred. That often compounds the problem and makes clean-up even more difficult.

Reliable interfaces handle "no data". An example would be an interface that pulls data from stores. The interface must make allowances the fact that there may be no data from a store on holidays.   The job schedule should not have to change just to prevent problems with "no data". The opposite is also true. For some interfaces, 'no data" is a fatal error and should be handled as such.

APPENDIX W

REPORTING STANDARDS AND GUIDELINES

Information Technology Standard	
Office of Information Technology Services	
Subject: Report Standards and Guidelines	**Number:** 7.0
Date: July 10, 2012	**By Direction Of:** Mary Benner, Chief Information Officer

Purpose of This Document

The purpose of this document is to clearly state the standards and processes to be used throughout the PLCB business and technical communities for all reports and/or report request.

Creators of This Document

This document was created by the PLCB Reporting Workgroup.

Definitions

To better understand the common terms used in this document, we offer the following definitions of commonly used terms:

Report Processes

- **Managed reporting** is needed to distribute prebuilt reports across an organization on a daily, weekly or monthly basis, often providing flexible prompting so users can run variations of reports themselves without the need to recreate the reports.

- **Ad-hoc reporting** is a critical aspect of enabling end-user self-service, giving business users instant access and interactivity with information to create their own ad-hoc reports. This type of reporting must be simple to use, with a drag and- drop interface, and information must be presented in the context they understand.

- **Analytical reporting** allows business users to slice and dice information so they can easily understand the "why" behind critical issues, trends, and opportunities, with the ability to drill down further for detailed information.

Report Outputs

- **Dashboards** help measure business performance and quickly communicate complex information to business users in compelling visual formats (chart or graph), so they have a clear picture of how the business is doing.

- **Production reports** provide high-quality detailed information such as invoices or statements, and these reports are highly formatted.

- **Operational or transactional reports** typically have detailed information from transactional systems, usually in the form of a data table, so ensuring secure and controlled data access is key.

Process	Output(s)	Common Users
Managed Reporting	Dashboards, Production reports, Operational reports	Management, Operations
Ad-hoc Reporting	Production reports, Operational reports	Operations, IT
Analytical Reporting	Dashboards, Production reports, Operational reports	Management, Operations

Note: The definition wording comes from an IBM white paper

STANDARDS

Report Naming & Dictionary

Naming and Documenting Your Report

Naming Conventions are useful for several reasons, they allow technicians and users to know at a glance if a report has been through the proper business process and seen by the required people. From the time of the publication of this standards document forward all reports which have gone through the required business process for report publication will begin with the letters "REP".   (NOTE: Reports created prior to our standardization process and that do not begin with the letters "REP" will not be modified at this time to reflect the new standards.)

Documenting reports properly is important for several reasons as well. The primary reason is reports that have gone through the documentation process will be known to the technical community. Without proper documentation reports may be broken by upgrades, server moves or other common technical occurrences.

Report Dictionary

The Report Dictionary can be found here:
http://lbwebdev02a.lcb.state.pa.us/plcb_Intranet/Agency/Reports_Dictionary/Default.asp

The Report Dictionary is a tool which allows users and technicians alike to learn details about existing reports. The Report Dictionary is a central, standard, searchable, updateable, database which lists all production reports. Production reports include FSG (Financial Statement Generator in EBS), Hyperion, legacy Crystal Reports, published BI and Dashboard reports, and all operational reports produced with data from the ERP databases.. The Dictionary will allow for:

- ease of identification of reports,

- ease of maintenance by COE,

- ease of sharing reports

- and will help eliminate duplication of like reports.

All of these benefits will decrease employee time and frustration.
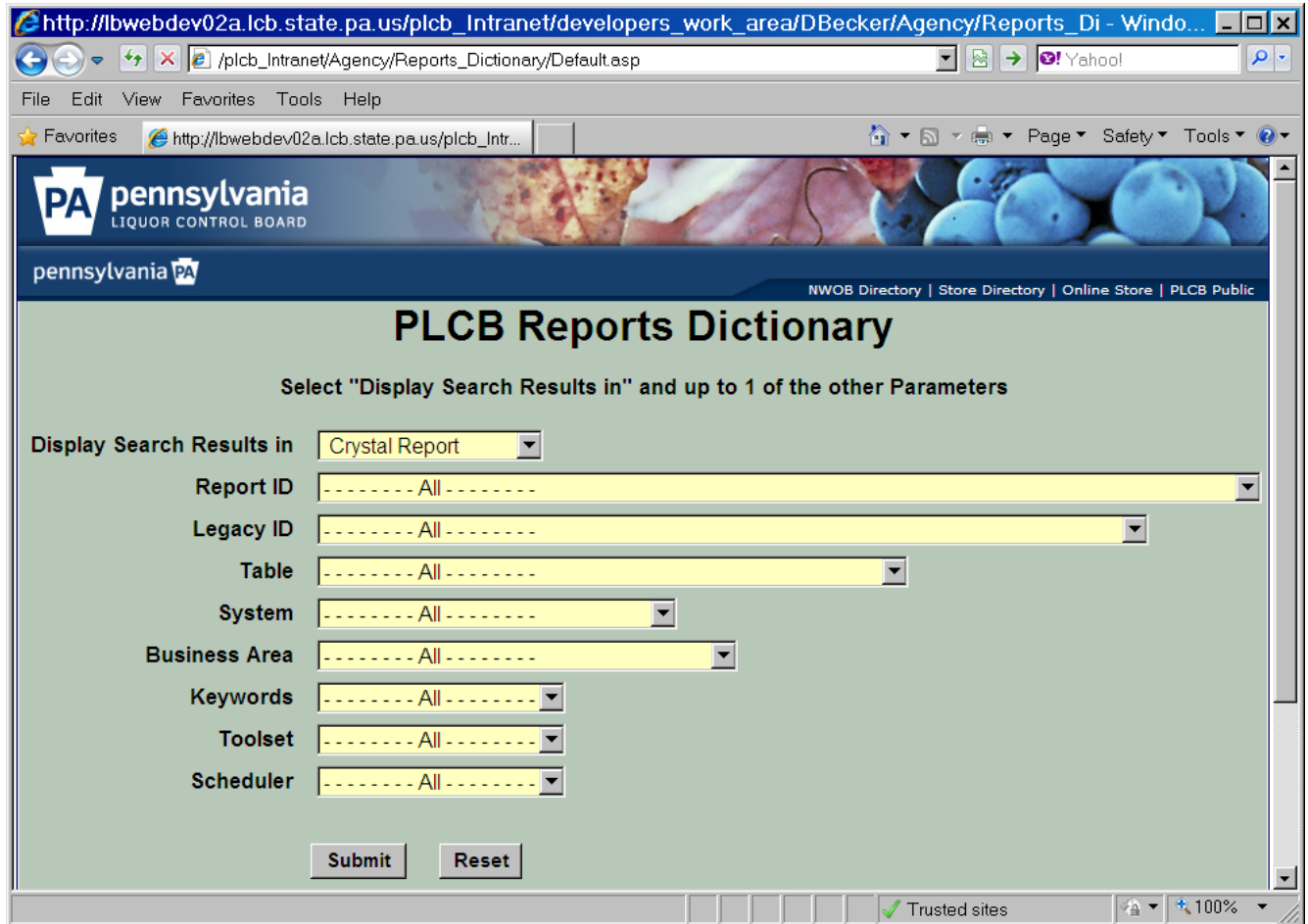
The front-end webpage (shown above) gives the user the ability to search the Report Dictionary by the following fields:

1. Display Search Results in dropdown – listing Crystal Report or Excel, this is how you want to see the list of reports you have searched for. Note that the Crystal Report can be exported to a PDF.

2. Report ID dropdown - ID and Report Title

3. Legacy ID dropdown - ID and Report Title (only used if the report is a recreation of a mainframe report)

4. Table dropdown - lists tables used in reports. This will give you any reports that use the table you choose from the dropdown.

5. System dropdown- lists the possible systems the reports could come from, with the acronym of the system broken down. Example, "RMS (Retail Management System)"

6. Business Area dropdown – lists all the Business Areas which will be taken from information already in Dictionary

7. Key Word dropdown – lists words entered by users to help identify the content / of the report. The dropdown will consist of category-type words, such as "Inventory – Warehouse, Inventory – Store, Sales – Licensee, Sales – Retail,

Sales – Ecommerce, etc." The list will be agreed upon by both the business and technical communities.

8. Toolset dropdown - lists reports by the toolset used to deliver the report

9. Schedulers dropdown – lists possible scheduling tools the reports could be using

Simply click "Submit" after you have chosen how you are going filter your search.

Inside the Report Dictionary, after you have searched for your report, you will find the following fields:

- *Report ID - LCB formal number, Oracle, or Business Area ID
- *Legacy ID - Old report ID's (pre-ERP)
- *Title - Descriptive Title (found in the top center of each production report)
- *Description - Tells what the report provides and/or includes
- Status – Active or Inactive.
- System - The source system (EBS, RDW, RMS, SIM)
- Development Technology - What tools were used to develop report? Ex: SQL Developer, Crystal, OBIEE, Hyperion etc.
- Delivery Technology – What tool is used to deliver the report? (BI Dashboard, BI Publisher, Crystal Reports, Hyperion, Oracle Reports)
- Frequency (if scheduled) - How often and when (month/ week/day of week, time is the report run
- Source Physical Tables - The names of the tables reported against. System and Table Name. Ex. RDW:SLS_ITEM_LD_DM
- Physical Table Status - Table status description. Ex. COTS Not in Production, Production COTS Data Loaded, Production COTS Not Loaded, COTS Altered, PLCB Custom, Data Partially Loaded.
- Sample - This will take you to a image or pdf of what the report looks like.
- * Business Area - Business Area
- *Business Owner/ Contact - Primary Business User
- *Business Analyst Owner -Point of Contact for Changes in CoE
- *Author - Programmer
- *Keyword – Word entered by the Business or Functional Owner that encapsulates what the report is about and will help in the search capabilities
- *Comments – Any other comments or notes about the reports
- *Retention – How long will reports be saved electronically where it is retained on servers?
- *Final Destination – Where the report resides. Dropdown includes: FTP Server, Share Drive, Email Only, Hardcopy, On-line Reports, and Dashboard.
- *Report Type – Form, Letter, Labels, Report
- *Report Security– yes or no

*Note: These fields are included in the "skeleton data" which will be filled out by the BA

In addition to the search tool, the Reports Dictionary is editable for a small group of users. This will keep the Dictionary clean, relevant and easy to use. The Maintenance group will be able to add, delete and update report data kept in the Dictionary.
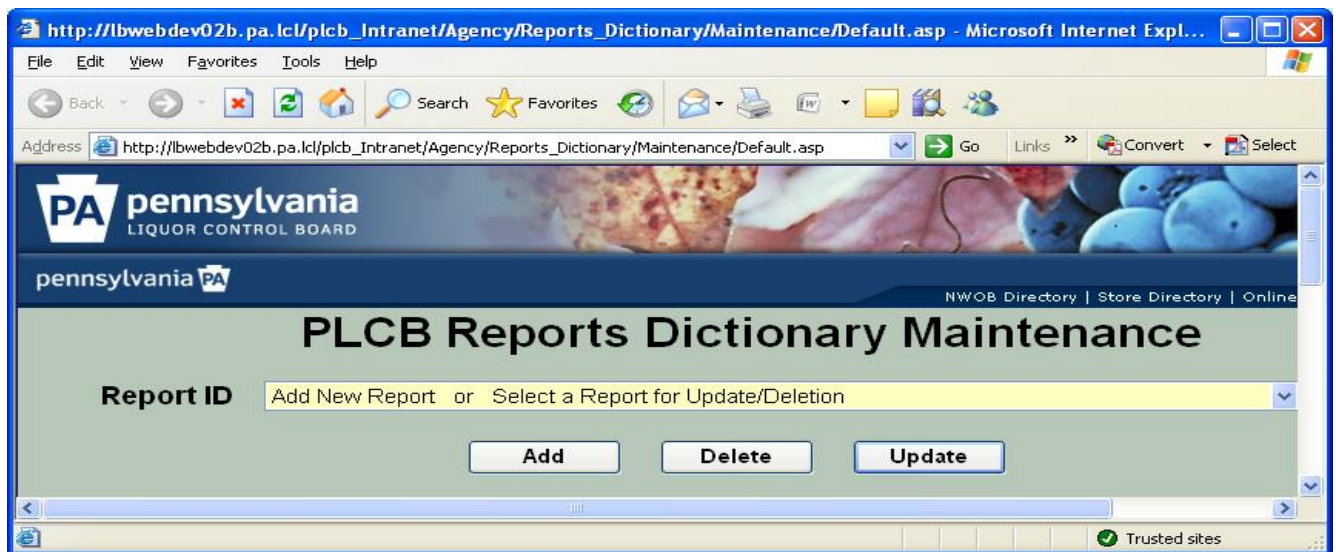
Report Storage& Retrieval

Efforts have been made to create a one-stop-shop for all your reporting retrieval needs. See "How to Retrieve a Report" below.

Online Reports Tool Basic Information

Who should use the Online Reports Tool:
- Anyone who needs to track their operations using reports
- Anyone who uses pre-run or ad hoc reports
- Anyone who receives a Right-to-Know request which can be covered by a report which is contained in this storage/retrieval tool. Note, if the report requested has been purged (see purging cycle below) we are **not** required to "find an old copy" of the report. Speak to your Records Retention Coordinator for retention standards for specific data.

What can be found in the Online Reports Tool:
- Links to Ad Hoc reports
- Reports which have always been in the Online Reports tool
- Resurrected Store Reports
- Scheduled reports which have been created by COE
- The purging cycle of pre-run operational reports (does not apply to ad hoc):
  - Daily reports kept 60 days
  - Weekly reports kept 6 months
  - Monthly reports kept 13 months
  - Yearly reports kept 3 years

REPORTING TOOLS

Purpose

Presently the agency has two reporting tools available; they are Oracle's BI Publisher, and Crystal Reports. The use of any other reporting tool will require a waiver to use.

This document is designed to show the differences between the products. To better help the end user, business analyst or developer better determine which is the proper tool to use depending on the requirements of the business object.

When possible efforts to create reports that pull data from RDW vs. production if the data is in RDW.

Overview

BI Publisher, and Crystal Reports are capable of producing reports, both simple and complex, to meet the agency's business needs. Beyond that statement, there are large differences in the ease of use, range, flexibility and capabilities of each product.

Data Sources

Crystal Reports comes with data drivers for: Oracle, MS SQL Server, Sybase, IBM's DB2, Ingres, Microsoft's Access, MySQL, Interbase, text files, Excel spreadsheets, XML files, any data source supporting ODBC connections, and many other sources.

Most relevant to ERP reporting is that it can use the Oracle native connection driver and supports individual account connections to Oracle as well as accessing Oracle Packages, Procedures and functions.

BI Publisher is configured, out of the box, to use Oracle DBMS as a data source. Newer versions of the product can access SQL Server 2005, which we are currently using. Beyond this, the product can access any database which will support a JDBC connection. All other sources can be accessed only if intermediate programs are developed to render data in XML format and the resulting XML data file is placed into a specific directory address by BI Publisher. It does not appear that BI Publisher can be constrained to a single user account, nor does it use database packages, procedures or functions unless those packages, procedures and functions are exposed as Document/Literal Web Services providing XML data. In almost every case, other than Oracle DB, extra units of programming must be developed to collect useable data.

Data Flow
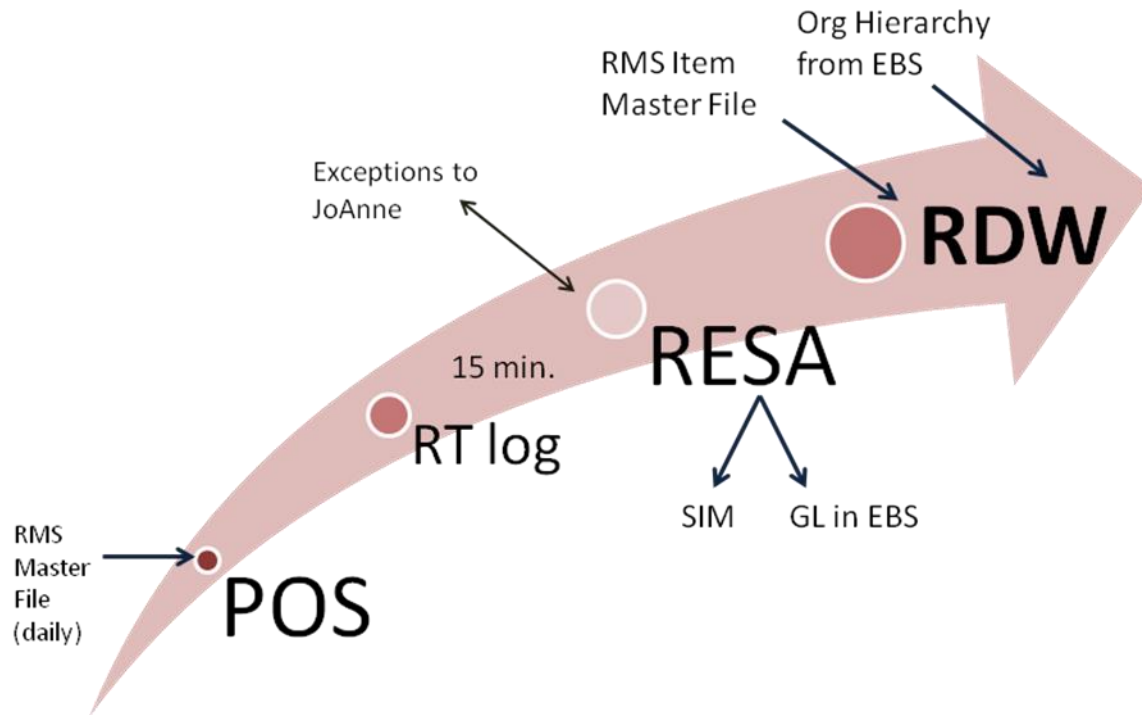
Report Formats

- Crystal Reports can produce reports in any of the following formats: Excel, PDF, XML, HTML, RTF, and more.

- BI Publisher can produce reports in any of the following formats: Excel, PDF, HTML, Word and RTF.

Security

Crystal Reports supports individual connection accounts. Plus the use of packages, procedures and functions defined within the DBMS.

1) As applied in the PLCB, all database access SQL is encoded into a package / procedure. Individual access accounts are created and granted the authority to execute the specific package(s) needed for the report. The account has no other permissions or authorization.

2) Reports are either scheduled to run in batch mode or established to run, upon demand, from the agency's intranet home page(s). These pages are accessible from all PLCB locations but the permission to run the report can be restricted to individuals.

BI Publisher provides predefined connections to an Oracle instance. In theory, many connections can be defined which might restrict a developer's accesses but in practice a more general access is created. This fact negates and prevents the tool from being used as an end user reporting tool.

1) In normal operation any authorized developer has access to any data file which exists in the instance. Written packages and Procedures are not immediately available as data sources.

2) Reports are either scheduled to run in batch mode or defined to run on demand from the BI Publisher server. The BI Publisher server is not accessible to remote PLCB sites such as stores.

3) After development is completed, the report is migrated to the production BI server where access to the report is controlled though user roles.

Ease of Development

Crystal Reports is a more complex development tool. The basics of creating simple reports can be learned from the tutorial packages which come with the tool. More advanced and complex reports are best handled after formal training. It must be noted that the PLCB has a substantial base of trained and capable Crystal Reports developers.

It can support multiple, concurrent connections to multiple data sources – for example RMS, RDW and SQL Server data sources. The tables cannot be directly joined across the servers but the data from one server can construct the query to the next server. Crystal report does support programming logic in the combination of data sources.

BI Publisher is an easily learned product. It uses Word documents as templates (rich text format .RTF) then "merges" data into its body. Data may be pulled from multiple sources by either a) creating a DBLINK across Oracle instance – this allows table joins across the servers but has large impact upon both or b) defining multiple data sources in BI Publisher, creating multiple SQL strings which can be passed to the different sources and publishing the results as separate reports on a page. As noted under data sources, external data sourced can require additional, external programming to generate XML data files.

Unique Features

Crystal Reports

1) Provides the means for some programming logic – IF / ELSE constructs which can control the reports choice of data records to report.

2) Reports can be run from WEB Servers – either internet or intranet – so that it can be used for public and in house reporting.

3) Scheduling of batch reports is done using standard, pre-existing, Windows scheduler.

BI Publisher

1) Has a built in "Bursting" feature. The feature will parse out a large report, according to defined keys, and dispatch the resulting sub-reports. The reports can be dispatched by email.

2) Individual fields within the RTF can be given IF / ELSE logic to control their display characteristics – including making them invisible.

3) Provides an extension to WORD which assist in creating the .RTF template for the report. This add-in simplifies the placement of data on the report as well as the creation of tables and repeating groups in the report output.

4) Scheduling of batch reports is done using a scheduler internal to the BI Publisher software.

Tools and Output Summary

All of the reporting tools have their own unique characteristics and do certain tasks well. For instance, if you have a requirement to store a copy of a monthly report for the last five years, then Crystal would be the correct choice. If you need a weekly report burst, then distributed via email, then Publisher is the tool to use. If summary level reporting with drill down capability is what you need, then the Dashboard is the logical choice.

Listed below is a consolidated list of the products and their high level capabilities.

| | **Output Formats** | | | | | **Capabilities** | | | | | | | |
	.pdf	.htm	.csv	.xls	other	burst	size limit*	scheduler	drill down	multiple source	email	ad-hoc	ease of use
BI Publisher	Y	Y	Y	Y	.doc	Y	N	Y	N	Y	Y	N	2
Crystal Reports	Y	Y	N	Y	.rpt, .rtf	N	N	Y	Y**	Y***	N	N	3

* = While technically there is no size limit, foreground reports that try to pull in too much data will time out

** = As links to other reports

*** = Limit of two. It has to be coded as a main report with a sub-report.

Crystal Reports best handles raw data. Typical reports, which require no special handling or complicated layouts is what Crystal is best at. It can handle large amounts of data, run on a schedule and the output can be stored for an indefinite amount of time. This is most akin to the mainframe reports.

BI Publisher is best at form output. Publisher uses templates created in Word to provide the layout. For instance, you can create a Word document that looks like an Invoice, with all the associated graphics, such as logos, tables, boxes, shading, etc. Publisher will convert all data to XML, it then populates the fields on the template. The finished product is very seamlessly integrated and can be output into all popular formats. But since it has the associated overhead of converting all data to XML, it's best for small to medium quantities of output.

Most people will have a favorite tool of choice, but each individual request should be evaluated objectively by the developer. We should try to use each tool to optimum effect balancing user needs and resource capacity.

Below is a Reporting Tool Decision Flow to help end users, business analysts and developers alike in determining the proper tool to use for a reporting request. But the final decision depends on multiple factors. Each request is unique and should be treated that way. There may be special factors that are not covered in this document. So make the best decision you can based on the information available to you.
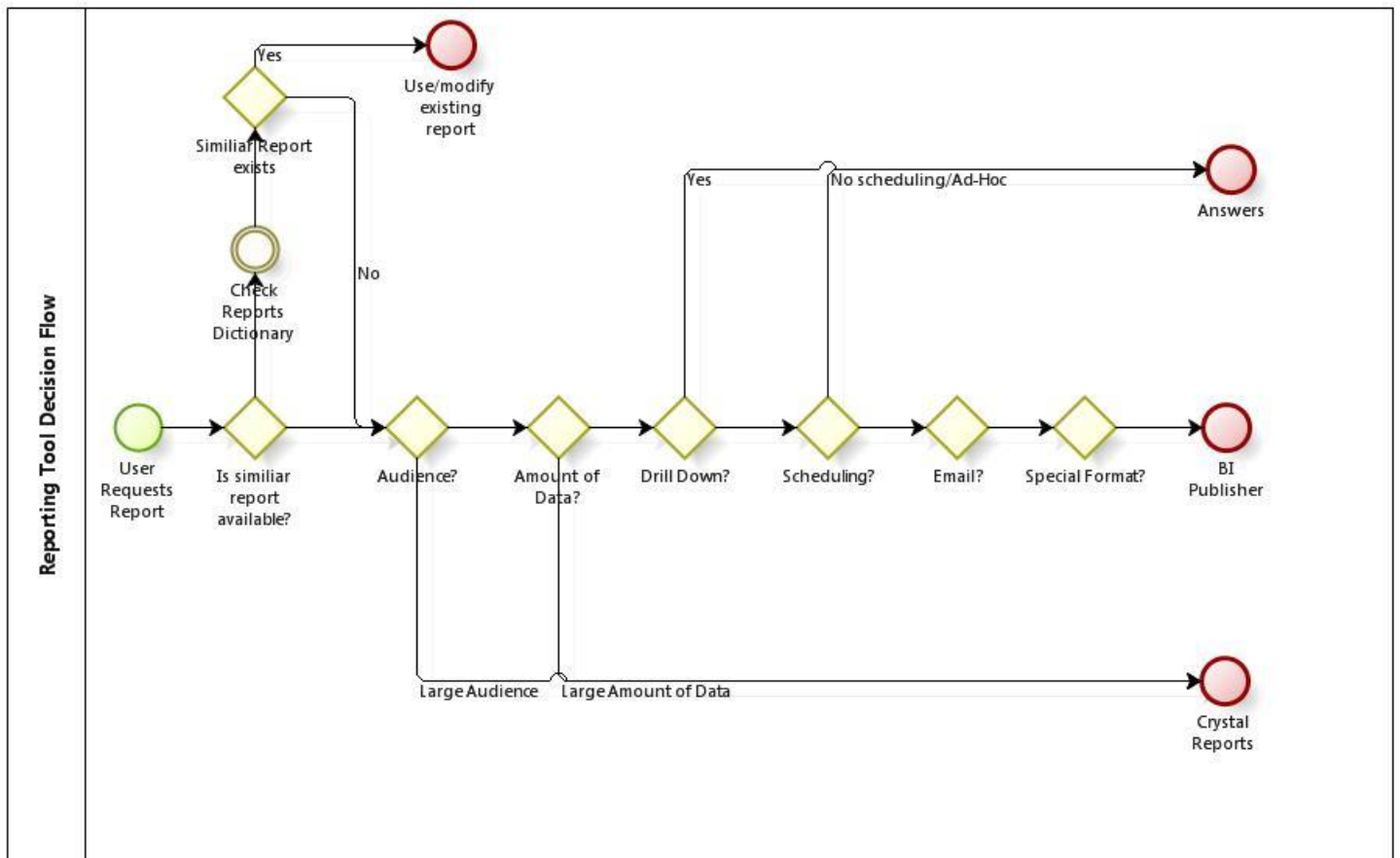
Tool Selection: What Tool to Use When

Crystal Reports

Crystal is the primary reporting tool for use by CoE for simple on demand reports and/or scheduled reports that query against a large volume of data. It should be given preference for any reports requiring long-term storage or up-to-the minute data, but that do not require busting/email distribution or highly formatted content. Development use of Crystal should be limited to CoE for reporting against primary production systems.

BI Publisher

BI Publisher is the tool of choice for form output reporting and/or reports that need to be emailed or deployed to multiple users on a scheduled basis. It should not be considered as the primary CoE reporting tool at the present time due to the computing capacity overhead required of its use. BI Publisher development should be limited to trained CoE personnel, though trained business users may assist with template development for highly formatted reports.

APPENDIX X

FILE ENCRYPTION STANDARDS AND GUIDELINES

Information Technology Standard Office of Information Technology Services	
Subject: Encryption of files at rest - Standards and Guidelines	**Number:** 8.0
Date: March 25, 2013	**By Direction Of:** Mary Benner, Chief Information Officer

Any file that contains data deemed sensitive or confidential must be encrypted while at rest. OA ITB ITB-SEC020, Encryption Standards for Data at Rest, Issued: 8/17/07, Revised: 01/21/11, states the methods that are permitted and the minimum encryption level. PLCB policy states that credit card information, social security numbers, bank account information and non-public personal information are deemed confidential and must be encrypted.

- OA ITB ITB-SEC020, Encryption Standards for Data at Rest
  http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec020.html
- Where encryption keys are protected by or derived from passwords, agencies are to use passwords in accordance with ITB-SEC007 Minimum Standards for User IDs and Passwords
  http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec007.html
- ITB SEC019 – Policies and Procedures for Protecting Commonwealth Electronic Data
  http://www.portal.state.pa.us/portal/server.pt?open=512&objID=416&PageID=200500&mode=2&contentid=http://pubcontent.state.pa.us/publishedcontent/publish/cop_general_government_operations/oa/oa_portal/omd/p_and_p/itbs/domains/security/itbs/itb_sec019.html

Scope of this document

The scope of this document is limited to IBMS, POS or related projects capable of utilizing the "/apps" resource (ex: /apps/shared) from the Office of Information Technology Services or providing solutions for or under the management of the Office of Information Technology Services.

References

The PLCB's File Transfer Standards and Guidelines
http://mylcb.lcb.pa.gov/sites/OITS/Standards/Released/4.0%20File%20Transfer%20Standards%20and%20Guidelines.docx

Overview

There are many interfaces between the modules of the PLCB's Oracle applications and many of those interfaces involve the exchange of files. The PLCB also exchanges files with outside organizations.

To facilitate file transfers, the PLCB established a set of shared directories that exist across all IBMS servers within each environment. Those directories are sometimes call "/apps/shared".

With this policy, the PLCB is establishing a location for files that need to be encrypted, "/apps/encrypted". Like "/apps/shared", "/apps/encrypted" exists across IBMS servers within each environment.

"/apps/encrypted":
o Is mounted on servers as needed. At minimum, it is mounted on the Appworx server (its point of origin) and the EBS database server (home of EBS' Concurrent Manager batch job scheduler) in each environment.
o Uses the Advanced Encryption Standard (AES) for symmetric encryption as per ITB SEC 020 with a 1,024 bit key.
o Uses the native Linux encrypted file system. No 3rd party software is needed.
o Is encrypted when unmounted or backed up.
o Allows files within it to be searchable via normal search commands such as grep when mounted.
o Requires no special programming to use, although path names may need to be changed.

The PLCB recognizes that sometimes exceptions to the standards will be needed because of requirements outside of the PLCB's control. Examples would include specialized security requirements from banks, limitations of the source or target operating systems, etc…

Implementation

The underlying encrypted directory and exported NFS share is hosted on the Appworx servers in each environment. In production, that server is lbappprddb01.

Appworx is one of the 7 applications that must be up and running at all times for IBMS to function. [1]

Since all servers have the /apps directory, the shared, NFS directory "/encrypted" is underneath /apps.

"/encrypted" is exported by NFS on Appworx and imported on, at minimum, the following servers:
- EBS (database server only)

Other PLCB servers, including Windows based servers, can be added on request so long as they have high-speed, highly reliable connections to the Appworx server. Unfortunately, that excludes the ORBO servers in the stores. It also excludes servers at external partners such as Treasury, NAABCA or wine and spirits vendors.

Because of the way that NFS works and that the directories are organized, the /apps/encrypted directory tree appears exactly the same and does not vary from server to server or even environment to environment. In addition, "/encrypted" never spans environments. i.e. The production "/encrypted" is different from the UAT 95 "/encrypted", etc..,

The /encrypted directory exists in its own container file so that runaway applications do not impact other applications on the same server. This also means that its sized is fixed and cannot be easily extended without rebuilding the entire filesystem.

Below the /encrypted directory there exists at least one directory, /interfaces. Others can be added upon request.

The following restrictions exist:
- The maximum number of files in a single directory must be limited to less than 100,000. Beyond that, the normal UNIX (AIX, Linux) directory commands begin to fail and managing the directory becomes very difficult.
- Retention criteria must be supplied for all files to manage exposure and limit disk space. Purging is done via a data file driven, operating system script run via an IBMS Appworx job.
- Subdirectories can be created underneath /interfaces only by Database Administration.

Recommendations

Under /interfaces, each interface, conversion, customization or extension should have its own unique directory, for example, /INT123. The structure should be the same as under /apps/shared.

---

[1] The 7 applications are EBS (and the portals), RMS, and SIM and the applications that link them together, BPEL, Appworx, and RIB and single sign-on.

Underneath each interface should be multiple directories for the data files (/data), the archive (/archive), if the interface archives its files, error logs or reports (/errors), if interface generates any, log files (/logs), if the interface generates any. Other directories may also be added under the interface.

Softlinks can be created where and if needed in order to allow /encrypted to be used by out-of-the-box interfaces that require a specific directory name.

For example, if an application expects its input files to be in /apps/ep01/banks that directory could, if desired, be soft linked to /apps/encrypted/INTBank/data.

APPENDIX Y

APPLICATION TECH STACK LOGGING STANDARDS AND GUIDELINES

Information Technology Standard	
Office of Information Technology Services	

Subject:	**Number:**
Application Tech Stack Logging - Standards and Guidelines	9.0
Date:	**By Direction Of:**
March 25, 2013	Mary Benner, Chief Information Officer

Importance of Application Technology Stack Logging

Enabling applications such as web servers, Java 2 Enterprise Edition (J2EE) servers and databases usually create log files. Those log files are designed to aid in troubleshooting problems that occur after-the-fact and contain information about failures, application health information and sometimes debugging information, depending upon the logging level.

More critically, these log files are not:
• Systems of record.
• Database transaction logs (a.k.a. "undo/redo" log, after-image journal files, archive logs).
• Application security logs.

Importance of Rollover and Retention

Depending on the activity of the application and verbosity level of logging, the log files themselves can become quite voluminous making them different to use for troubleshooting.

In addition, as time passes the diagnostic information in these log files becomes less and less relevant when troubleshooting problems. For example, if the failure of an application is not discovered until months after it occurred, the application log may be of little value in correcting the business data while the logs produced by the application itself may be critical to recovering the data. More critically, the fact that a problem is not discovered for months is a significant problem in itself.

Log Rollover and Retention Guidelines

Whenever possible, log files should roll-over (i.e. be closed and a new one opened with a new name) once each day. Daily log files are intuitive because one day equals one log and easy to search because all of the day's activity is together in one file. Retention for daily logs should be anywhere from two to four weeks, depending on the log file and its utility and its size.

Some log files accumulate too much data to roll-over on daily basis. These log files should be set to roll-over by size and purged whenever a fixed quantity of copies is reached. For example, the ORPOS log on the ORBO servers is set to roll over at 10 MB and keep 50 copies (i.e. 500 MB's worth or 2 ½ days' worth).

Whenever possible, log files should be stored on the central log storage directory. This directory, /apps/logs, is an NFS share that is exported to all of the servers within an IBMS environment. Each environment has its own copy of /apps/logs.

/apps/logs is a separate mountpoint (i.e. disk) and so in the unlikely event that it filled up, it would not causes the applications or databases to run out of disk space. /apps/logs is separate from all other mountpoints on all other servers, including but not limited to:

- /apps/shared
- Database mount points (ex: /oradata and /arch)
- Report directories including /apps/shared
- The /tmp directories used by some applications on each server
- The operating system

/apps/logs is organized as a directory tree with the following levels:

1. /apps/logs; then
2. Servername (ex: /apps/logs/lbsimdevapp25/); then
3. Application name (ex: /apps/logs/lbsimdevapp25/sim/ or /apps/logs/lbsimdevapp25/wavelink); then
4. One or more optional levels representing components, sub-applications, virtual servers, etc… (ex: /apps/logs/lbsimdevapp25/sim/sim-server); then
5. One or more optional levels representing the type of log (ex: /apps/logs/lbsimdevapp25/sim/sim-server/diagnostic-images)

In some cases, it will be possible to point the application directly to /apps/logs. In other cases, it may be necessary to use a soft link to re-point a directory to /apps/logs. For example, Weblogic requires the use of a soft link as in the following example:

```
appsd25@lbsimdevapp25: /home/appsd25 $ ls -l /apps/sd25/MW/user_projects/domains/SIMAPPDomain/servers/sim-server
total 24
drwxr-xr-x    4 appsd25   dba              256 Nov 08 12:31 cache
drwxrwxrwx    4 appsd25   dba              256 Jul 26 2012  cache.orig
drwxrwxrwx    5 appsd25   dba              256 Jul 25 2012  data
lrwxrwxrwx    1 appsd25   dba               44 Mar 07 14:52 logs -> /apps/logs/lbsimdevapp25/sim/sim-server/logs
drwxrwxrwx    3 appsd25   dba            12288 Feb 23 13:54 logs.old
drwxrwxrwx    2 appsd25   dba              256 Nov 14 17:18 security
drwxrwxrwx    5 appsd25   dba              256 Dec 06 07:49 stage
drwxr-xr-x    5 appsd25   dba              256 Mar 19 15:37 tmp
drwxrwxrwx    5 appsd25   dba              256 Oct 01 01:08 tmp.orig
appsd25@lbsimdevapp25: /home/appsd25 $
```

Using "native" roll-over mechanisms

Many applications technology components use a logging facility, whether their own, or a logging framework such as log4j.

When a component provides its own logging framework, it is the preferred solution. An example is the Weblogic console. A sample configuration screenshot is below.

When a component does not provide its own logging framework, logrotate is the next best solution. Logrotate is a standard Unix/Linux operating system facility designed to rotate and purge log files.   A sample configuration is below. This sample rolls the Apache access log every day, adds the date to the end of the filename, and keeps only 14 copies (2 weeks' worth).

```
/apps/log/lbsleposadmin01/apache2/access_log {
    dateext
    daily
    rotate 14
    notifempty
    missingok
    create 644 root root
    prerotate
     /etc/init.d/apache2 check-reload
    endscript
    postrotate
     /etc/init.d/apache2 reload
    endscript
}
```

When the application has no logging framework and logrotate will not work for a particular application, a shell script may be needed. If so, it should be scheduled through Appworx.

Wavelink was an example of such an application until its startup was modified to allow it to be managed by logrotate. The Wavelink application tracked the end of its log file via a byte count and wrote data starting at that point. It did not "append" to its log file. The solution was to change the start of Wavelink to output to the UNIX tee facility instead of directly to the log file. The tee command is designed to append to a file. For example:

```
/usr/java6_64/bin/java -classpath <rest of command line omitted> | tee -a ./logs/wavelink.log
```

With that change, the Wavelink log was able to be rotated by logrotate.

Log Level

Most logging APIs and native controls provide a method for setting log levels. When native controls or logging APIs have logging levels available, developers and operators should use appropriate logging levels to log system events. For example informational messages should be logged at an INFO or DEBUG level, while system errors or partial failures should be logged at a WARNING or ERROR level.

When in production under normal operating conditions WARN and ERROR level messages should be enabled. This will reduce disk utilization and increase performance. An application should have the ability to modify its logging level to lower DEBUG, INFO, or TRACE levels for debugging and troubleshooting. In production these items should not be enabled unless they are being utilized to find or address a problem.

APPENDIX Z

SERVER NAMING STANDARDS AND GUIDELINES

Information Technology Standard	
Office of Information Technology Services	
Subject:	**Number:**
Server Naming - Standards and Guidelines	10.0
Date:	**By Direction Of:**
May 15, 2013	Mary Benner, Chief Information Officer

Importance of Server Naming Standards

To support efficient operations and reduce the opportunity of errors, server names need to be understandable and provide clues as to the applications that they support and their interrelationship of the servers.

Furthermore, the names of servers must fall within the standards and requirements of the Office of Administration/Office of Information Technology and the rules of the domain name service (DNS).

Introduction

At the PLCB, servers that are not in stores are typically named as follows:
lb<Application><Environment><Type><ServerSet><Server#>.<dnssuffix> where:

- "lb" is a constant required by the Office of Administration/Office of Information Technology Services for PLCB servers.
- <Application> is a short letter code for the application. Examples include:
    - EBS – eBusiness Suite
    - HYP or ESS – Hyperion
    - RMS – Retail Merchandizing system (RMS, ReIM, ReSA, RPM, ARI, Allocations)
    - SIM – Store Inventory Management
    - RDW – Retail Data Warehouse
    - INT – Retail Integration Bus (for instances of RIB where they do not reside on a server with an application)
    - PLN – Retail Demand Forecasting
    - BPEL – BPEL (service oriented architecture middleware)
    - APP – Appworx cross-platform job schedule
    - SP – Sharepoint
    - DYN – Microsoft Dynamics (CRM)
    - CRYRPT – Crystal Reports
    - ORCO – Oracle Retail Central Office
    - BO – Oracle Retail Back Office
- <Environment> is a short letter code for the environment.   An environment is a group of applications and servers related by function and relationship to production. There can

be one or more of each environment except production. There is only production environment. The environment names are:
- DEV – Development
- DEV – Integration Test
- UAT – UAT
- TRN – Training environment
- PRD – Production

- <Type> describes the role of the server and it typically one of
  - WEB – for a standalone web server or the web server in a 3 tier application.
  - APP – for an application server or an application server that also contains its web server in a 3 tier application. This is typical of Oracle applications.
  - DB – for a database server. Some database servers also have the web, application and database on them and so are named as database servers. Examples include:
    - BPEL
    - APPWORX
    - Retail Demand Forecasting

- <ServerSet> is a number that defines on which set of servers it exists and corresponds to one of a set of environments. There could be two sets of environments, each with its own set of servers, but single set of servers would never correspond to more than one environment. For example, if there were two development environments, each one could have its own set of servers, for example, a "2" and "3" set.   However, the "2" set of servers could belong to one and only one environment. This number makes it easy to link a group of related applications to the servers on which they reside.
  Currently, the sets of servers and their environments are:
  - 2 – Development
  - 3 – Development
  - 4 – Integration Test
  - 6 – Training
  - 8 – UAT
  - 9 – UAT suitable for load testing
  - 0 – Production

- <Server#> is a number that indicates the number of the server within the set of servers. For example, if there are two eBusiness application servers on the same server set, the first one might be 1, the second will be 2 and the third, 3.

- <dnssuffix> is the DNS suffix for the host. At the PLCB those include:
  - .pa.lcl – typically used for servers that are only accessible from inside the PLCB and may be accessible from inside the Commonwealth.   Examples include Sharepoint and EBS.
  - .lcb.lcl – typically used for servers or other devices that are only accessible from inside the PLCB and, for security reasons, should only be visible from inside the PLCB. Examples include registers and routers.
  - .lcb.pa.gov – typically used for Internet accessible servers but can also be used for servers that are from inside the PLCB and from inside the Commonwealth.   The PLCB has the ability to change the Intranet names quickly.
  - .lcb.state.pa.us – typically used for Internet accessible servers. The Office of Administration/Office of Information Technology is moving away from .state.pa.us and so this suffix should not be used for any new servers or applications.

At the PLCB, servers that are in stores are typically named as follows:
lb<Application><Environment><Type><ServerSet>-<store#>.lcb.lcl

All of the fields are the same as above, except that

- the ServerSet is followed by a hyphen. The hyphen serves to delimit the store number.
- the 4 digit store numbers replaces the Server#. Store numbers are always 4 digits long (justified right, leading zero).
- The dnssuffix is always lcb.lcl. Store servers are currently in the PCI network segment within the stores and so should not be visible outside the PLCB.

Scope of this document

The scope of this document is limited to projects controlled by or utilizing resources from the Office of Information Technology Services or providing solutions for or under the management of the Office of Information Technology Services.

This solution does not include outsourced infrastructure services where the Office of Information Technology Services has no control or input into the names of servers.

References

RFC 1034 and 1035 which define DNS.

www.ietf.org/rfc/rfc1034.txt

www.ietf.org/rfc/rfc1035.txt

Implementation

Server names are assigned by the Server Support section under the Enterprise Infrastructure Division with the Office of Information Technology Services.

The PLCB recognizes that sometimes exceptions to the standards will be needed because of requirements outside of the PLCB's control.

APPENDIX AA

UNIX / LINUX PRINTING STANDARDS AND GUIDELINES

Information Technology Standard Office of Information Technology Services	
Subject: Unix/Linux Printing - Standards and Guidelines	**Number:** 10.0
Date: March 25, 2013	**By Direction Of:** Mary Benner, Chief Information Officer

Importance of Coding Standards

To develop reliable, maintainable applications and reduce development cost as well as time, you must follow coding standards.

In short, advantages of coding standards are:
- Improve the readability of the code.
- Easy to understand and maintain by others.
- Maintainable applications.
- Remove complexity.

Introduction

As of 2013, the PLCB has more 650 printers installed at more than 600 locations.   All of those printers are available for printing by the IBMS applications.   The ability to efficiently drive those printers, provide a central point for management and provide high availability is crucial to the agency's retail operations.

This document describes the architecture, standards and guidelines for using the PLCB's printing architecture.

The PLCB uses CUPS to drive its printers. According to Wikipedia "CUPS (formerly an acronym for Common Unix Printing System, but now with no official expansion) is a modular printing system for Unix-like computer operating systems which allows a computer to act as a print server. A computer running CUPS is a host that can accept print jobs from client computers, process them, and send them to the appropriate printer.

CUPS consists of a print spooler and scheduler, a filter system that converts the print data to a format that the printer will understand, and a backend system that sends this data to the print device. CUPS uses the Internet Printing Protocol (IPP) as the basis for managing print jobs and queues. It also provides the traditional command line interfaces for the System V and Berkeley print systems, and provides support for the Berkeley print system's Line Printer Daemon protocol and limited support for the server message block (SMB) protocol. "

The IPP protocol is "a standard network protocol for remote printing as well as for managing print jobs, media size, resolution, and so forth… IPP is implemented using the Hypertext Transfer Protocol (HTTP) and inherits all of the HTTP streaming and security features."

CUPS is part of the AIX, RedHat Linux and SuSE Linux operating systems.   It is installed by default on the Linux operating systems and it is a standard component available for installation on the AIX installation media. CUPS accepts and prints both PostScript files and PDF (which it can print directly or convert to PostScript).

The IPP protocol is available on almost all printers and is the standard protocol used by almost all modern network connected printers.

IPP is also used by the IBMS report writer, BI Publisher, to spool print files to printers. BI Publisher prints by connecting to a CUPS server using a URL such as "ipp://dnsname_for_cups:631/printername".

Scope of this document

The scope of this document is limited to projects printing from the IBMS or ORCO environment utilizing resources from the Office of Information Technology Services or providing solutions for or under the management of the Office of Information Technology Services.

This solution does not include printing from Windows-based application such as Crystal Reports.

References

Unix/Linux CUPS administration http://www.cups.org/

Implementation

The PLCB's implementation of CUPS contains one primary CUPS server per environment and one backup CUPS server for each environment.

The production environment typically contains all of the printers available at the PLCB, however, non-production environments only contain those printers specifically requested by OITS users for testing or by the Bureau of Talent Management and Organizational Development for the training academies. In addition, in non-production environments, printers for stores are typically redirected to a printer at either the central office or at a training academy. That is done so that stores do not accidently receive licensee orders, inventory reports or other reports that are being tested.

The URL for CUPS is implemented as "ipp://dnsname_for_cups:631/printername" where:

- dnsname_for_cups is the hostname for the CUPS server. At the PLCB, that name is LBCUPSnn.PA.LCL where nn is the IBMS environment number such as 05 for production.
  - LBCUPSnn.PA.LCL is a virtual IP address (VIP) on a load balancer for the actual server on which CUPS resides.

- The VIP points to an active/passive server farm where the primary server is the Appworx server for an IBMS environment and the secondary (failover) server is the SSO server for an IBMS environment.
  - There is an operating system environment variable and Appworx variable, CUPS_HOST, in each IBMS environment which points to LBCUPSnn.PA.LCL for that environment.
  - The management interface for each environment's CUPS installation is at the standard CUPS url, http://LBCUPSnn.PA.LCL/
- Printername is the name of the printer. For stores, that name is LBWSsssPn where:
  - "ssss" is the 4 digit store number with leading zeroes.
  - "n" is the printer number at the store. "1" is the primary printer used for licensee orders.

  For example, the URL for the primary printer in the production store 1234 would be ipp://LBCUPS05.PA.LCL:631/LBWS1234P1

BI Publisher also uses a "short name" for each printer which is just the final printer name. In the previous example, it would be LBWS1234P1

BI Publisher has the ability to automatically import all of the printers defined on a CUPS server by "registering" the CUPS server via BI Publisher's administration application. So long as the printer names remain the same, migrating to a new CUPS server is a simple as deregistering the old CUPS server and registering the new CUPS server.

BPEL workflow tasks that produce BI Publisher reports (ex: licensee invoices), store the name of the CUPS server in a property which is changed via the BPEL Enterprise Manager.

The PLCB recognizes that sometimes exceptions to the standards will be needed because of requirements outside of the PLCB's control. Examples would include specialized printers such as the receipt printers on the registers, barcode printers at warehouses, check printers, limitations of the operating system, printer or report writer.

APPENDIX BB

PLCB BATCH JOB AND SCRIPT CODING STANDARDS

Issued by:	Liquor Control Board Center of Excellence Standards Committee
Date Issued:	
Date Revised:	10-03-2012
Domain:	Application
Discipline:	Application Development
Technology:	Development Practices – Coding for Migration
Document Title:	**PLCB Batch Job & Script Coding for Migration**
Referenced by:	

1.   Introduction

1.1   Purpose

The purpose of this document is to provide coding and design standards for making batch jobs, operating system scripts, other scripts, stored procedures and other components transportable between environments without requiring code or parameter changes.

1.2   Scope

The scope of this document is limited to project utilizing resources from the Business Solutions Center of Excellence.

1.3   References

AppWorx V7.0 User's Guide

ProTech's Korn Shell Programing, Books 1 & 2

1.4   Overview

Coding and design standards for batch jobs, scripts and stored procedures are essential to improving the quality of applications and the speed with which they are developed.

The PLCB recognizes that certain standards are needed in order to facilitate moving batch jobs, scripts and stored procedures between environments. Currently, these objects must be manually changed whenever they are moved from one environment to another such as when production is "cloned" to UAT or an object is promoted from a development environment to a test environment or to production.

The changes to objects tend to be related to the differences between environments. Such differences include:
• Instance IDs
• Server names
• URLs

In the past, these items were hardcoded into Appworx jobs, Concurrent Manager requests, scripts, stored procedures, etc… Even when passed as a parameter to these objects, the facility passing the parameter needed to be changed when the object was moved.

These changed increase the possibility of error and lengthen migrations and cloning.

Through some standards and prebuilt variables, objects can be developed so that they move seamlessly between environments.

One key element is a list of "variables" whose names remain the same across all environments, but whose values change to reflect the environment in which the object will run.
Those variables are:

Appworx Variable, Shell/Concurrent Manager Variable, Key name	Description
ERP_ENV	The three letter acronym for the Oracle financials and retail portion of this environment. Among other things, this variable can be used to construct server names. One of "dev", "uat", "prd".
ERP_SVR_SET	The numeric designator for this set of servers . Currently, 0 is production, 2, 3, and 4 are development or test environments, 8 and 9 are UAT environments
ORCO_ENV	The three letter acronym for the Oracle Retail Central Office environment. Among other things, this variable can be used to construct server names. One of "dev", "uat", "prd" or "sup". Because there are 4 ORCO environment and 6 ERP, the two do not always match. If there is no ORCO environment linked to this ERP environment, this variable should be empty.
ORCO_SVR_SET	The numeric designator for this set of servers. Currently, 0 is production, 2 is development, 9 is UAT and 7 is production support. If there is no ORCO environment linked to this ERP environment, this variable should be empty.
EBS_SID	The instance name for EBS in this environment. ex: ep01
RMS_SID	The instance name for RMS in this environment. ex: rp01
SIM_SID	The instance name for SIM in this environment. ex: sp01

Appworx Variable, Shell/Concurrent Manager Variable, Key name	Description
BPEL_SID	The instance name for BPEL in this environment. ex: bp01
APWRX_SID	The instance name for AppWorx in this environment. ex: ap01
RPAS_SID	The instance name for RPAS in this environment. ex: pp01
HYPRN_SID	The instance name for Hyperion in this environment. ex: ???p01. If Hyperion does not exist in this environment, then the string must be empty.
RDW_SID	The instance name for Hyperion in this environment. ex: ???p01. If the RDW does not exist in this environment, then the string must be empty.
ORCO_SID	The instance name for ORCO in this environment. ex: cp01. If ORCO is not connected to this environment, then the string must be empty.
EBS_DB	The hostname for the database server for EBS for this environment. ex: lbebsprddb01.pa.lcl
RMS_DB	The hostname for the database server for RMS for this environment. ex: lbebsprddb01.pa.lcl
SIM_DB	The hostname for the database server for SIM for this environment. ex: lbebsprddb01.pa.lcl
BPEL_DB	The hostname for the database server for BPEL for this environment. ex: lbebsprddb01.pa.lcl
APWRX_DB	The hostname for the database server for Appworx for this environment. ex: lbebsprddb01.pa.lcl
RPAS_DB	The hostname for the database server for RPAS for this environment. ex: lbebsprddb01.pa.lcl
HYPRN_DB	The hostname for the database server for Hyperion for this environment. ex: lbessprddb01.pa.lcl If Hyperion does not exist in this environment, then the string must be empty.
RDW_DB	The hostname for the database server for RDW for this environment. ex: lbrdwprddb01.pa.lcl If RDW does not exist in this environment, then the string must be empty.
ORCO_DB	The hostname for the database server for ORCO for this environment. ex: lborcoprddb01.lcb.lcl If ORCO does not exist in this environment, then the string must be empty.
EBS_HOST	The hostname portion of the internal URL for EBS for this environment. ex: ebs.pa.lcl
SIM_HOST	The hostname portion of the internal URL for SIM for this environment. ex: lbsimapp.pa.lcl
PROD_ENV	Equal to the string "TRUE" (all uppercase) if the environment is production, "FALSE" otherwise. Used to test if this is a production environment or not.

The variables are maintained as Appworx variables, operating system shell variables (also usable by Concurrent Manager) and in a database table called XXLCB_ENVIRONMENT.

The following pages show examples of how to use these variables in Appworx jobs, Concurrent Manager Requests, scripts and stored procedures.

Additional variables can be created by contacting the Application Development Division Chief.

2. Appworx Example

Define the variable RMS_SID inside Appworx. This variable is predefined in Appworx and is not defined by each module. The contents will be different in each environment.
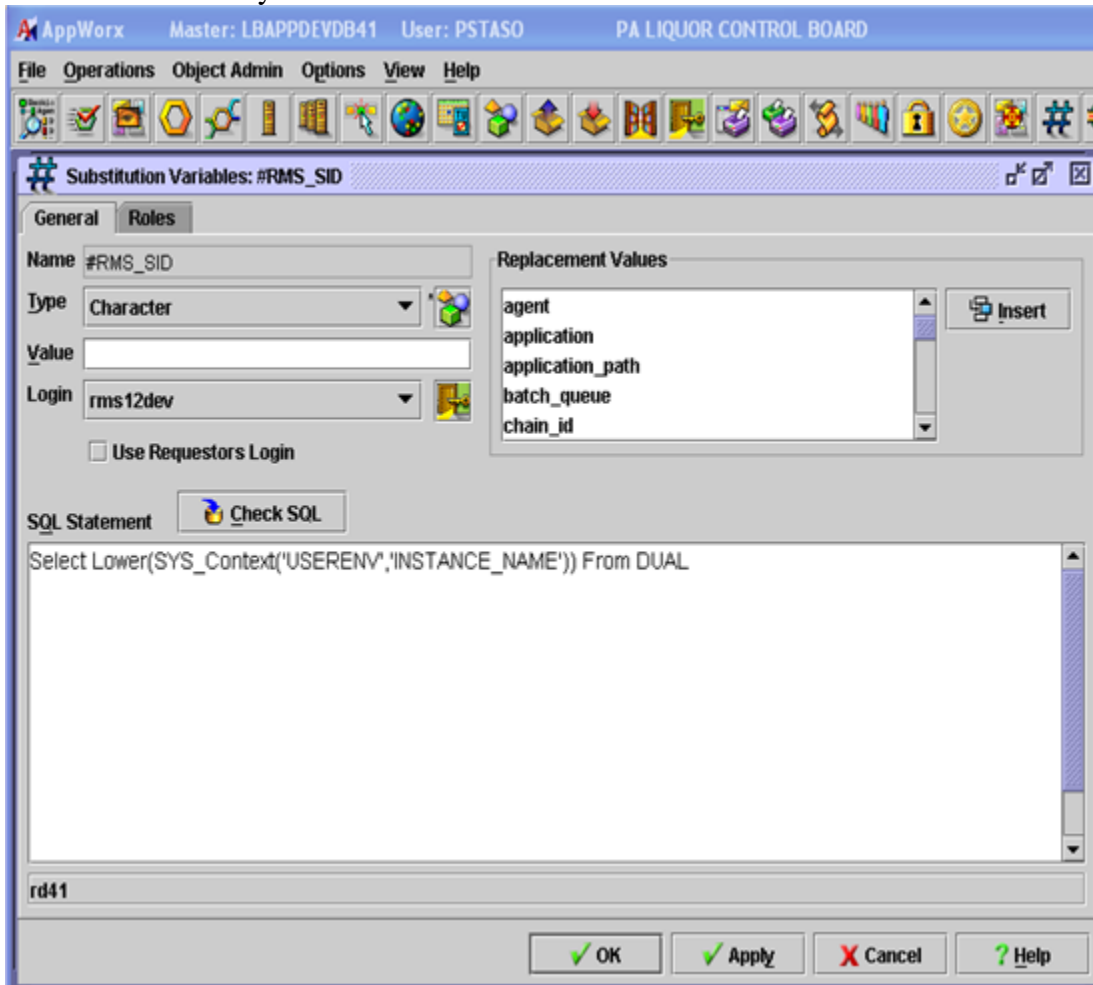
Define the module's input prompts (parameters). In this example, note that parameters 3 and 5 use the variable RMS_SID. The contents of RMS_SID, for example, "rd41" (see previous screenshot), will be transparently passed to the target of the module.

In this example, parameter #3 would look like the following "/apps/rd41/oracle/FILE/…"
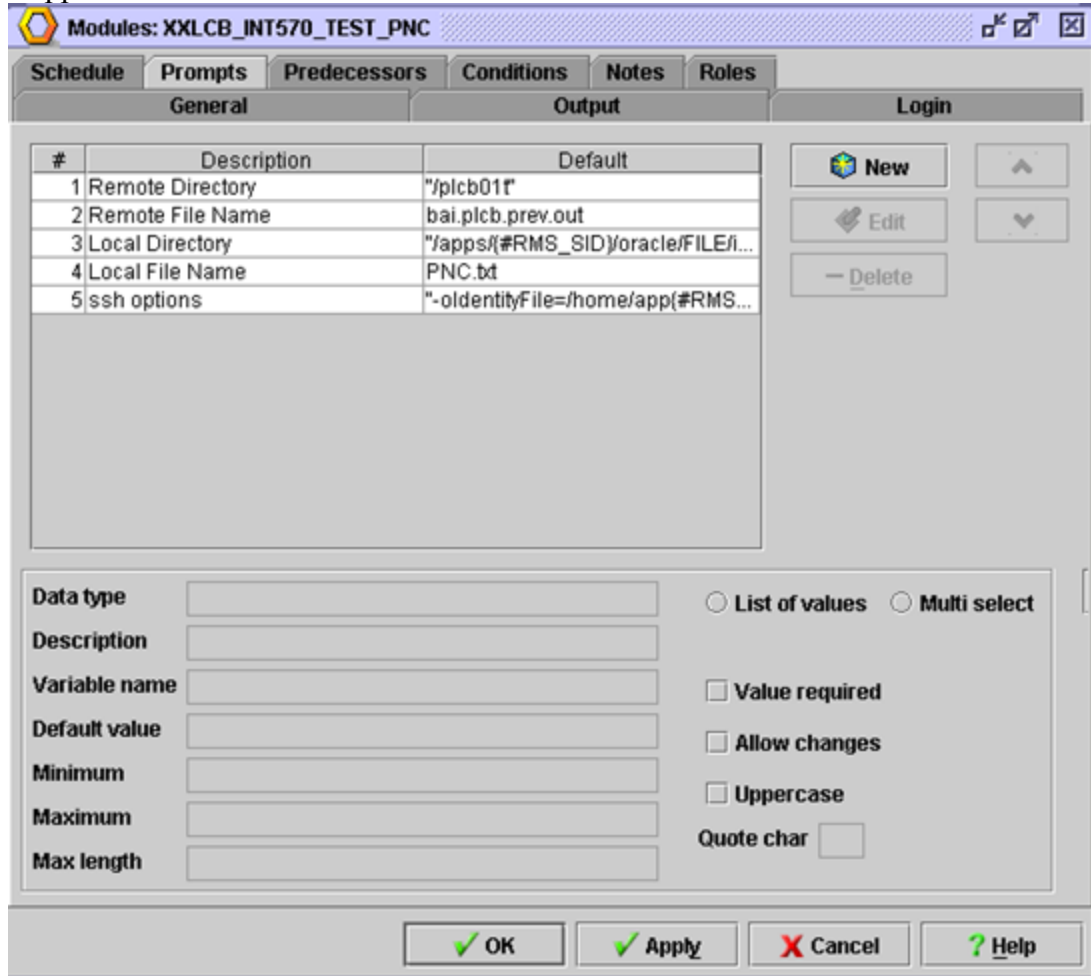
3. Concurrent Manager Example

The example below shows the entries in a Concurrent Manager screen that substitutes the environment specific path /apps/ep01/somedirectories/outbound/INT123 with the environment independent path /apps/$EBS_SID/somedirectories/outbound/INT123.

Note that this example only works for Concurrent manager requests that invoke shell scripts since it is the shell that completes the substitution.
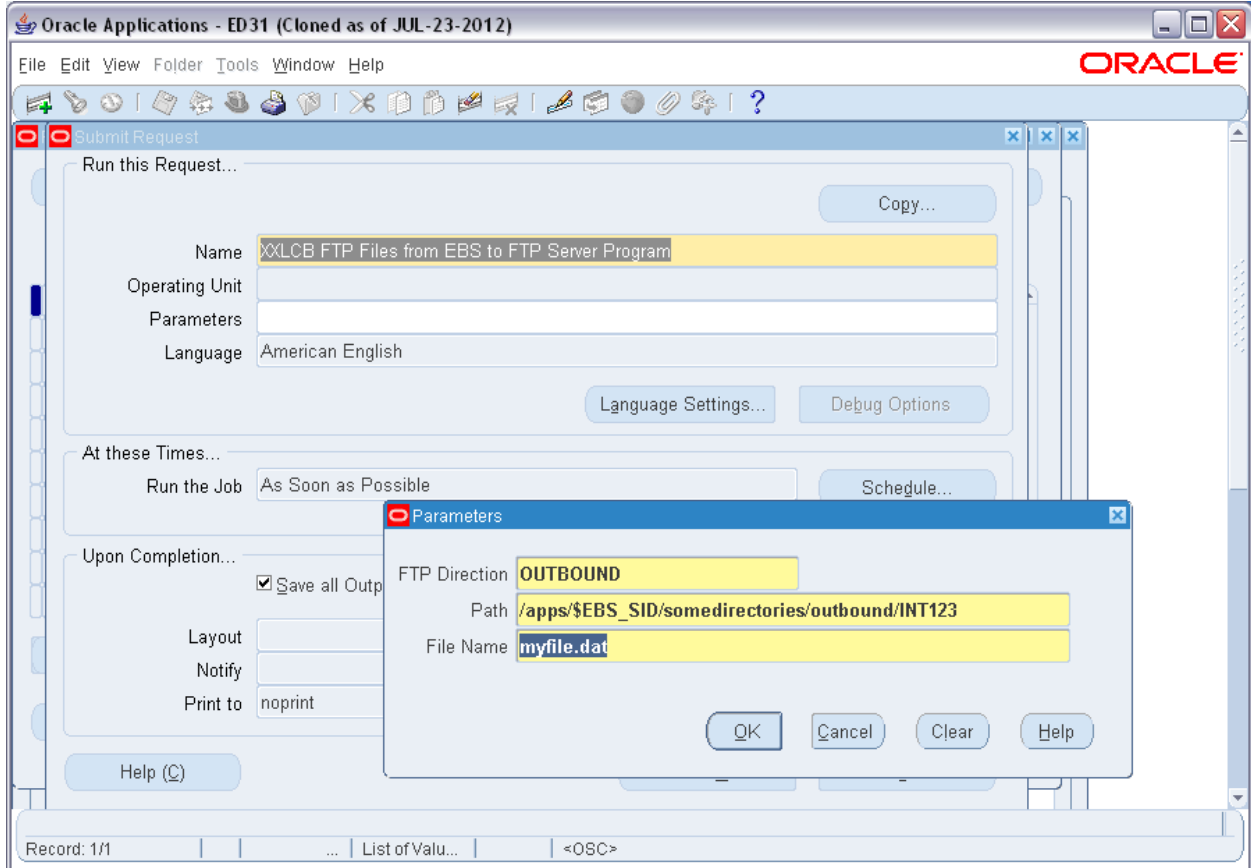
4. Korn Shell Script Examples

```
$ cat example.ksh
#!/usr/bin/ksh
#
# Example of using an instance in a script to check
# to see if a local file exists
#
echo List the contents of /apps/$APWRX_SID/appworx
ls -l /apps/$APWRX_SID/appworx/test.txt
#
# If the file test.txt exist, then do something
# else do something else
#
if [ -e /apps/$APWRX_SID/appworx/test.txt ]
then
        echo The file exists
else
        echo The file does not exist
fi
$ ./example.ksh
List the contents of /apps/ap01/appworx
-rw-r--r--    1 ap01     dba          12942 Sep 14 2009
/apps/ap01/appworx/test.txt
The file exists
$

$ cat example2.ksh
#!/usr/bin/ksh
#
# Example of using an instance and server
# in a script to copy a file from another system.
#
# Copy /apps/bp01/sqlnet.log from lbbpelprddb01
# to the current directory using an RSA key
# for login instead of a password
#
# Construct the source and destination
SRC=$BPEL_DB:/apps/$BPEL_SID/sqlnet.log
DST=foo.bar
#
# The location of the private key file for this user
RSAKEY=~/.ssh/id_rsa
#
echo "Execute command:"
echo scp -i $RSAKEY $SRC $DST
# Copy the file
scp -i $RSAKEY $SRC $DST
#
ls -l $DST
$ ./example2.ksh
Execute command:
scp -i /home/sweinbro/.ssh/id_rsa lbbpelprddb01.pa.lcl:/apps/bp01/sqlnet.log
foo.bar
sqlnet.log                              100% 1008     1.0KB/s   00:00
-rw-r--r--    1 sweinbro staff          1008 Mar 15 13:16 foo.bar
```

```
$


$ cat example3.ksh
#!/usr/bin/ksh
#
# Example of checking to see if this is or is not
# a production server and then setting some variables
# based on that.
#
case $PROD_ENV in
    TRUE)
        print "This is production"
        MANDTBANK="ftp.mantdbank.com"
        ;;
    FALSE)
        print "This is non-production"
        MANDTBANK="ftptest.mantdbank.com"
        ;;
    *)
        print "Unexpected error, PROD_ENV is neither TRUE nor FALSE"
        exit 1;;
    esac
#
# Print the variable and export it
#
print MANDTBANK=$MANDTBANK
export MANDTBANK
$
$ ./example3.ksh
This is production
MANDTBANK=ftp.mantdbank.com
$
```

APPENDIX EE

SCC USE ACROSS PLCB ITEMS

Items are setup in RMS with two levels, and associated to SCC codes used to manage DC inventory.

Store SOH is held at the each

Level 1
PLCB Code
(ORIN)

Level 2
UPC Item
(EAN/UCC13)

Level 1
SCC
(EAN/UCC14)

DC inventory is received and shipped based on SCC.*
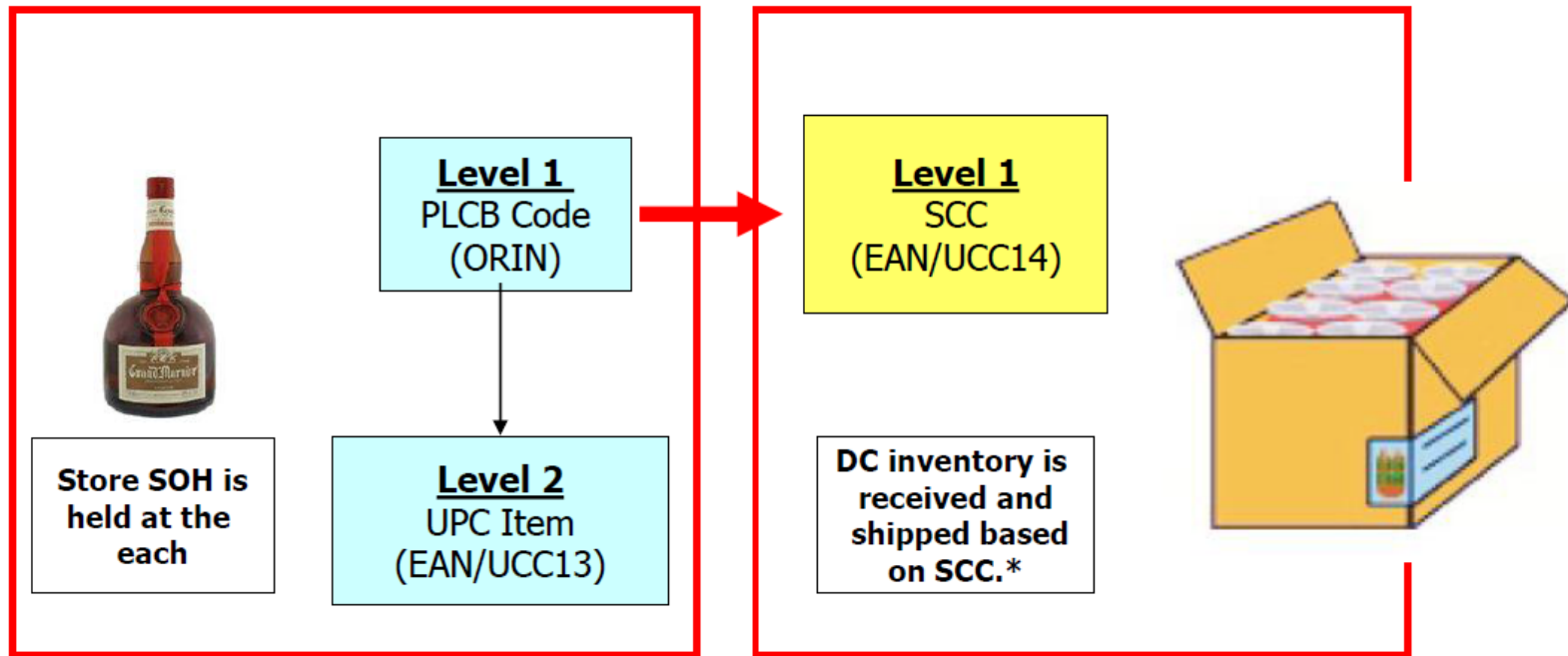
Note: Sales through POS are at the UPC item level, Oracle sales audit application, ReSA, rolls all UPC level sales up to the PLCB code level.

*DC inventory is held at the bottle level associated to the SCC code received against

SCC codes are used for inventory movements across PLCB's supply chain.
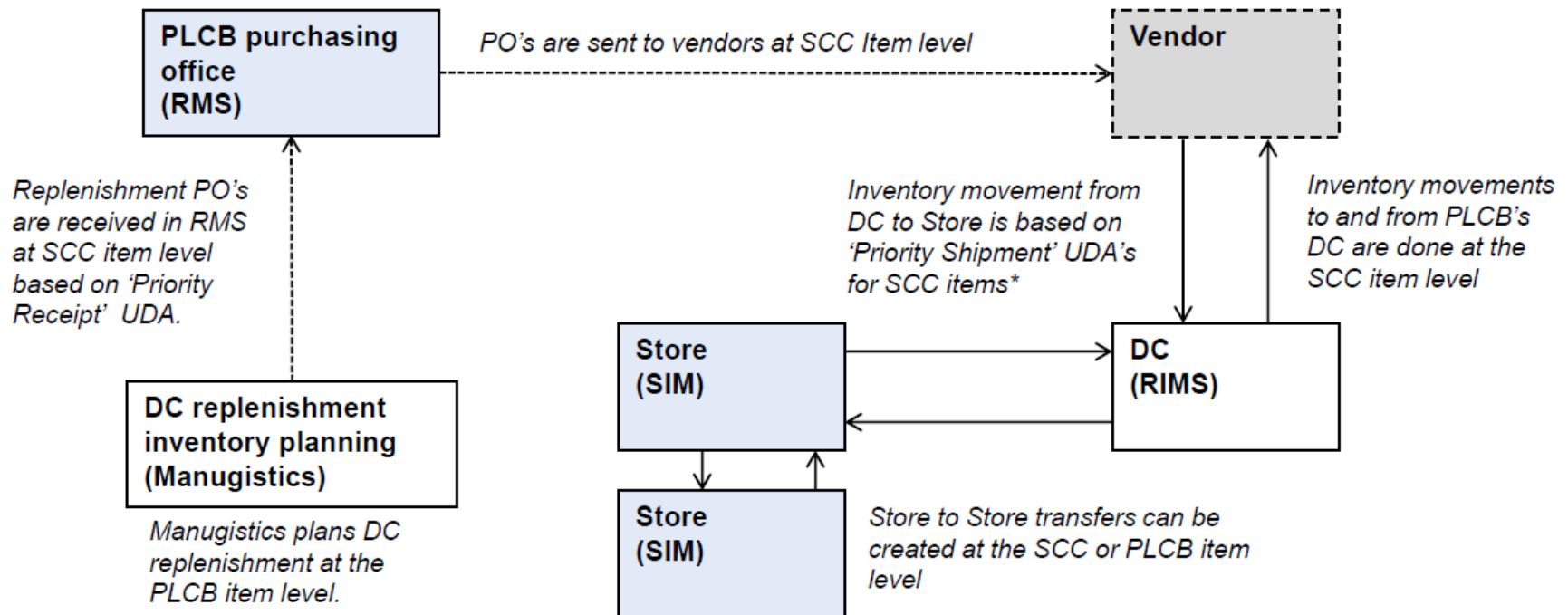
Inventory movements across PLCB's supply chain are at the SCC level

- SCC items in RMS have a 'Priority Shipment' value assigned (UDA 63) for WH to store replenishment, logic built into RMS to process need against 'Priority Shipment' values to create pick request in RIMS WMS
- Replenishment orders generated within Manugistics are at the SCC item level based on 'Priority Receipt' value (UDA 64) for the associated PLCB item

Store level replenishment forecasting is done at the PLCB item level; inventory is fulfilled from the DC based on 'Priority Shipment' UDA's for associated SCC code items

Inventory can be tracked within RMS at the PLCB item and SCC item across the Organizational Hierarchy.
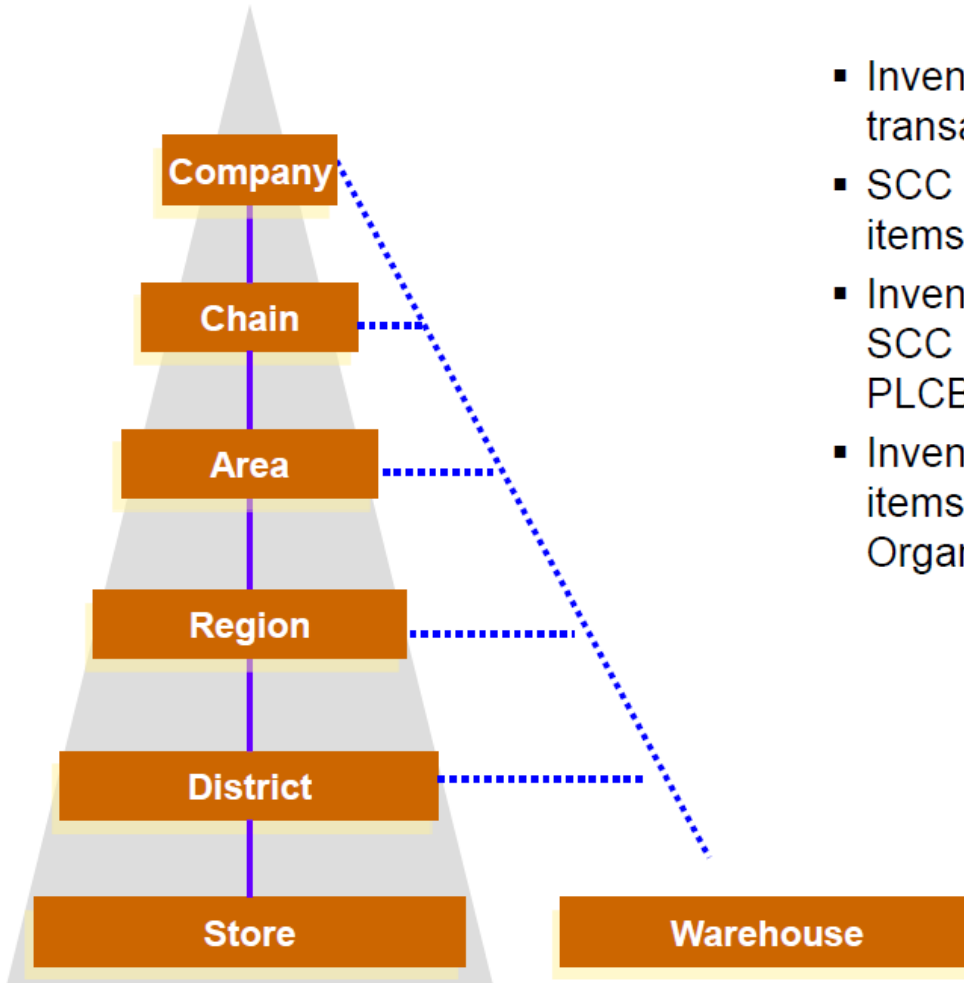
- Inventory within RMS is tracked at the transaction item level (level 1)
- SCC items are setup as level 1 'simple pack items' of PLCB items*
- Inventory levels can be viewed for different SCC code items and rolled up to associated PLCB items
- Inventory for SCC code items and PLCB items can be aggregated to any level of the Organization Hierarchy

Note: SCC items do not represent 'packs' of items, only used as a cross-reference table to hold SCC's for associated PLCB items

Example Listed Item Level Structure with Simple Pack: Bushmill's Irish Whiskey – 1.75L
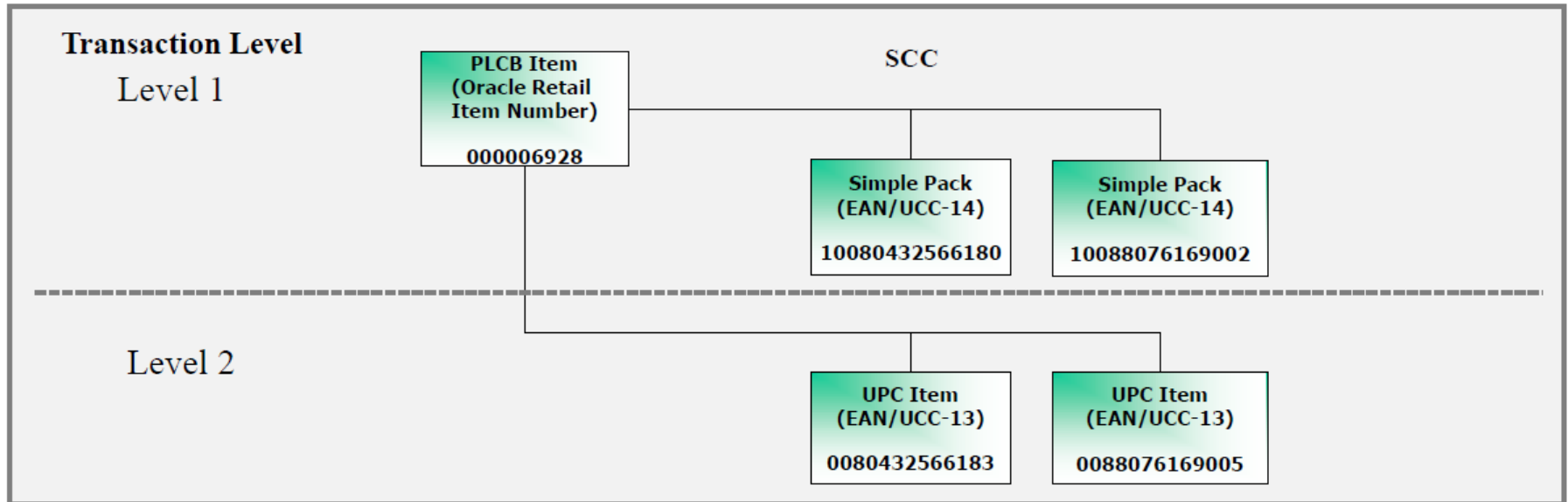
- PLCB Item is the master record for a single item that may have one or more UPC items
- SCC (Shipping Container Codes) are established using 'Simple Packs' within RMS
  - 'Simple Pack' are used as a cross reference within RMS
    - **they do not represent actual packs of items, and are only used to hold SCC value in RMS**
  - Used to manage DC shipping/receiving based on priority set via item UDA's
    - DC does not hold PLCB item code, only SCC inventory held in bottles
  - Purchase orders and warehouse to store transfers are done at the SCC level
- UPC item used to transact sales through store POS

Example Listed Item: Promo pack
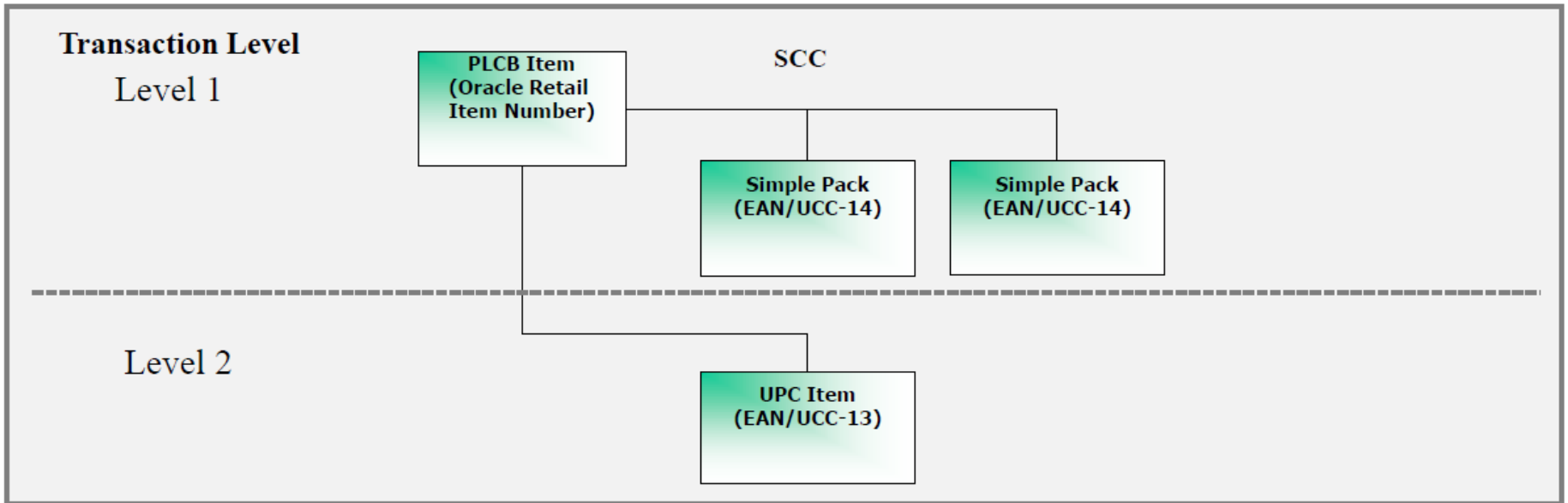
- PLCB Item is the master record for a single item that may have one or more UPC items
- Each UPC item should have one SCC item associated to it, unless there is a 'promo pack'/'value-add' item that will have an additional SCC

Example of listed wine: new SCC supplied by vendor, UPC re-used
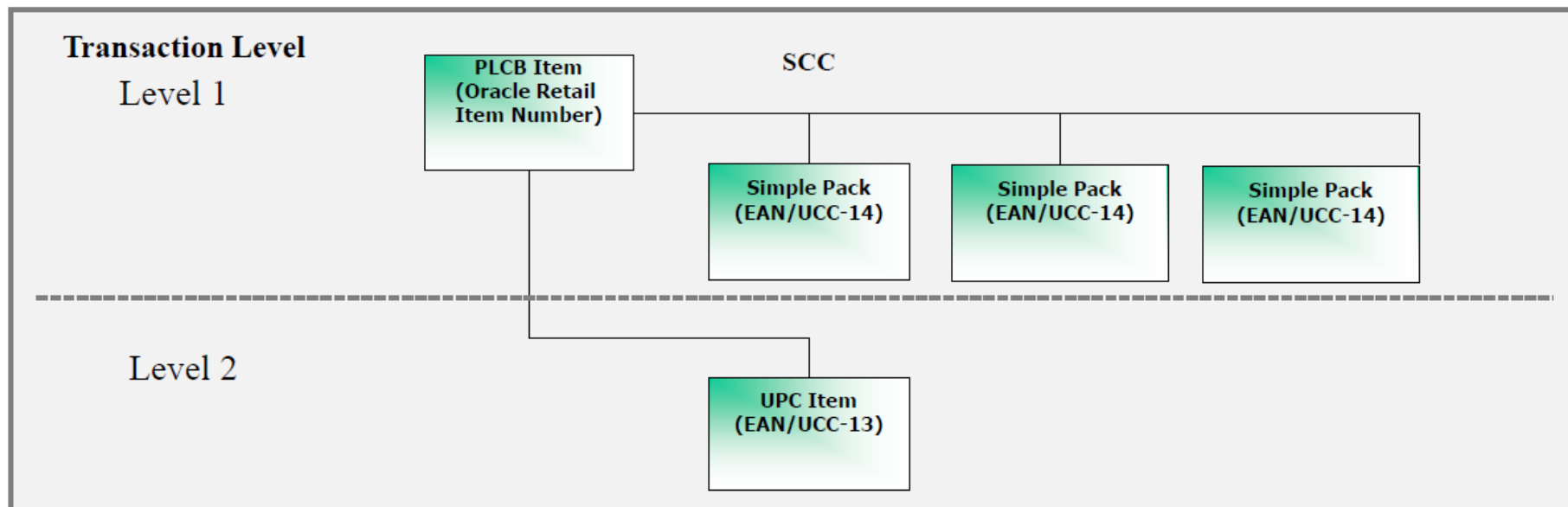
- Wineries provide additional SCC for different vintage product…. i.e. 2009 SCC, a new SCC for 2012 – even though product has same cost, retail and PLCB item code

Luxury
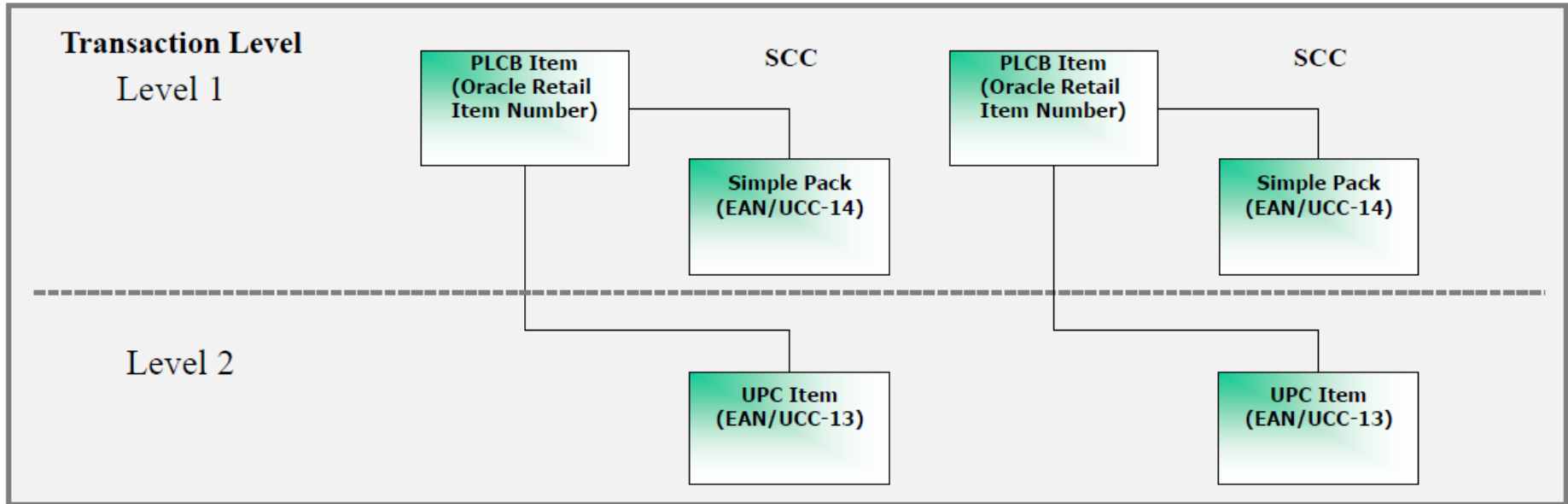
- Separate PLCB items are created for 'Luxury' items with a 'promo pack' attached
- Luxury creates their own SCC (unclear how well this is communicated to vendor, if they already have an SCC on their product…)

Chairman's Selection – Kenwood Chardonnay Sonoma
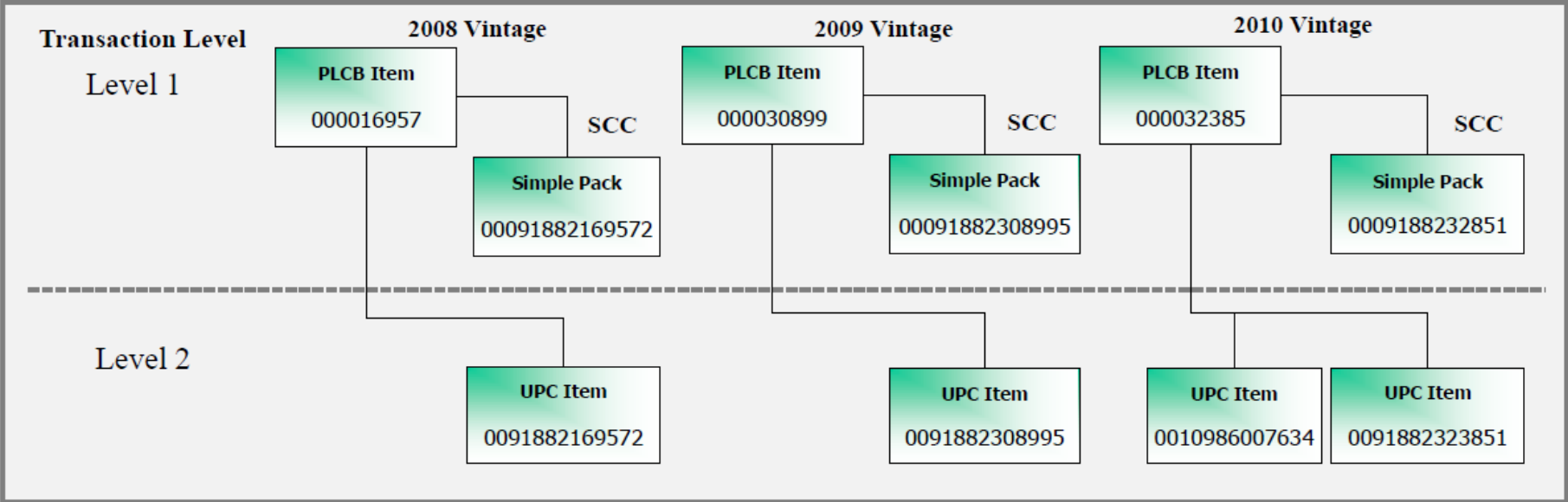
- Wines of a different vintage have a different PLCB Code issued

Luxury wine – Santerra Cellars 2009
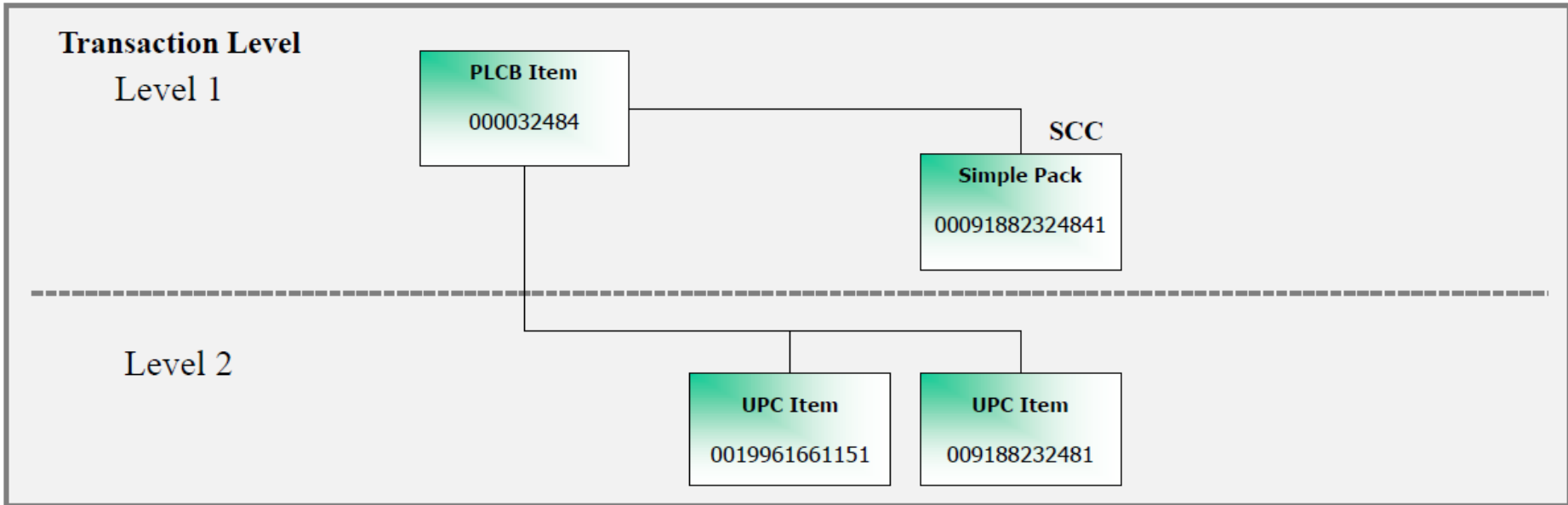
- This product has a distinct UPC, no other vintages are listed

APPENDIX FF

RICEW OBJECT LIST

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS030	Customization	Security Customization	20 forms to be customized to meet LCB security requirements		General Accounting				Wave II	Deloitte	Oracle forms	1		Formally EXT030
CUS061	Customization	Customize standard repladj program.			Forecasting and Replenishment				Wave III	Deloitte	ProC	1		Formally EXT061
CUS062	Customization	Multithreading of ReSA batch jobs			Sales and Cash Management				Wave III	Deloitte	UNIX	1		Formally EXT062

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS064	Customiz ation	Replenish ment Activate Date	The rplatupd.pc base program does not clear the last_review_ date in repl_item_lo c when the review cycle of an item/loc is modified or changed. This causes the ociroq.c (recommend ed order quantity calculation program) to ignore the new review cycle since it is still looks at the the last_review_ date if it is not null. Modified rplatupd.pc and		Forecasting and Replenish ment				Wave II	Deloitte	ProC	1		Formally EXT064
CUS073	Customiz ation	FIFGLDN2 Custom Fix	Customized seeded program FIFGLDN2.		General Accounting				Wave III	Deloitte	ProC	1		Formally EXT073

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS074	Customization	STKVAR.pc Custom Fix	Customized seeded program STKVAR.pc		Inventory Control				Wave III	Deloitte	ProC	1		Formally EXT074
CUS078	Customization	ReSAFileParser	Customize ReSAFileParser to improve performance	SIM	Store Operations Management		SIM		Wave III	Deloitte	UNIX	1		Formally EXT078
CUS081	Customization	RMS_ROQ_Extraction		RMS	Forecasting and Replenishment		RMS	RMS	Bailment	Deloitte	ProC	1		
CUS092	Customization	Receive Qunatity Blank on Received Transfers	Received Quantity' Is Displayed As Blank after A Transfer Is Received	SIM	Store Operations Management			SIM	Wave III	Deloitte	Java	1		
CUS101	Customization	Up-charge Calculation	This is a customization ("ioattrb")of standard oracle package as suggested by Oracle in evaluation patch 9987947	RMS	General Accounting		RMS		Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS103	Customization	saexprms.pc	This is a customization of the base ReSA program saexprms.pc to inlcude a time stamp on every transaction so that stock counts from SIM will be posted and adjusted correctly based on the timestamp as well. This is an approved change as part of the amendendment to CO19.	RMS (ReSA)	Store Operations Management		RMS (ReSA)	RMS	Wave IV	Deloitte	ProC	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS104	Customization	ResaFileParser_mul.sh	This is a customization of the base file parser shell script to include logic to insert data into XXLCB_RESAFILEPARSER_TRACKER table before processing resafileparser program. This is an approved change as part of the amendendment to CO19.	RMS (ReSA)	Store Operations Management		RMS (ReSA)	RMS	Wave IV	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS105	Customization	XXLCB AR Print Statements	AR Print Statements form was customized so that the Supplier was not a required field and so that the Supplier Number appears on the report. Ref PSI#	EBS	Accounts Receivables		EBS	EBS		Deloitte	Oracle forms	1		FNDLOAD
CUS106	Customization	PREPOST Modification	Small change to support the REQEXT changes	RMS	Forecasting and Replenishment		RMS	n/a		Deloitte	ProC	1		
CUS107	Customization	SALDY	Change Date on Daily Data table to reflect EOW Gregorian Date	EBS	General Accounting		EBS	EBS		PLCB	ProC	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS109	Customiz ation	ReIM Invoice Entry Customiza tion	Customize Custom Ref 3 field for invoice date for invoice maintenance header and doc maintenance header	ReIM	Accounts Payable		ReIM	ReIM		Deloitte	JSP	1		
CUS111	Customiz ation	RPM_Bulk _CC_Actio n_SQL	This is to fix package (RPM_Bulk_ CC_Action_ SQL)bug in populate deal information in RMS	RPM	Pricing and Promotions Management			RMS		Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS112	Customiz ation	"Customiz ation to Oracle Standard RPM Package:	This custom object is for an evaluation fix from Oracle. When new store created and copying items from another existing store Oracle standard batch job (RPM New Item LocBatch) aborted in PROD with below error : Error Message: Error ORA-12899: value too large for column "RMS12DEV"."RPM_ST AGE_ITEM_ LOC"."ERR OR_MSG" (actual: 288,	RMS	Store Operations Management		RMS	n/a		Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS113	Customization	TSFPRG	Oracle supplied patch to TSFPRG program (out of the box) to improve performance.	RMS	Order Management	Scott Deakins (Deloitte)	RMS	RMS		Deloitte	ProC	1		
CUS114	Customization	POSUPLD	Backported an Oracle patch and reprocessing changes to prevent partial record processing in RMS.	RMS	Sales and Cash Management	Joseph Lee	RMS	n/a		Deloitte	ProC	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS115	Customization	patch to ORDPRG	This Custom Object is for an evaluation fix from Oracle. The standard ORDPRG Program which removes Old Orders from the system, was running for a long time as it was getting stuck in delete statements of alloc_chrg, alloc_detail tables. To resolve this performance issue , Oracle Patches Patch#6788 337 Patch#5594	RMS	Order Management	Chetan Jadhav (Deloitte)	RMS	RMS		Deloitte	ProC	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS116	Customiz ation	SIM Transactio n Date Fix	SIM had BC dates on some transactions rather than AD dates. Patch was applied to fix	SIM	Forecasting and Replenishme nt	Scott Deakins (Deloitte)	SIM	SIM		Deloitte	Java	1		
CUS117	Customiz ation	STK_ORD _RCV_PA TCH	We are backporting one of the Oracle bugs from a later version of RMS to PLCB's RMS 12.0.6. This will prevent over receipt scenarios at store from updating the tsf_reserved	RMS	Store Operations Management	Pradeep Patil	RMS	RMS		Deloitte	PL/SQL	0		
CUS119	Customiz ation	POSUPLD batch to fix deals processing	Customizati on needed based on Oracle SR 3-6412325711 . This will be decommisio ned once 13.1.6 patch is retrofitted to 13.2.4	RMS	Pricing and Promotions Management	Connor Sage	RMS	RMS		Deloitte	ProC	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS120	Customization	RDW RETL Extract Customizations	Customizations are required for RDW to get data from RMS properly	RMS	Business Intelligence	Connor Sage	RMS	RDW		Deloitte	UNIX	1		
CUS121	Customization	RMS Patch 8678338	We would like to have an object number for a RMS patch that we are forward porting from RMS v12 to RMS v13.2.4	RMS			RMS	RMS		Deloitte	PL/SQL	1		
CUS122	Customization	Sales Audit MISSING_TRAN_BIG_GAP error	Customization needed based on Oracle BUG 15853446. This will be decommisioned once 13.2.6 patch is applied	RMS	ReSA / Sales Audit	Carlo Rivera	RMS	RMS		Deloitte	Oracle forms, ProC, C	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS124	Customiz ation	Price Event Execution batch	Customizati on needed to change the threading logic if 2 or more price event types (example a Price Change and a Promo Start) are being	RPM	Pricing and Promotions Management	Carlo Rivera	RPM	RPM	Productio n Support	Deloitte	PL/SQL	1		1/10/2014
CUS125	Customiz ation	RMSSUB_ RTV	This customizatio n will ensure that RTVs created in SIM create RTV in RMS using the RTV_ORDE R_NO_SEQ	RMS	Store Operations Management	Pradeep Patil	RMS	RMS	Productio n Support	Deloitte				2/5/2014. Workaround for an Oracle bug. Once we receive the Oracle fix this will be decommissi oned
CUS500	Customiz ation	Modificatio n to SIM email notification for store transfer for over/under receipt	Need to add the dispatching store to the email that goes to the district manager. Modify the Oracle source code.	SIM	Store Operations Management	Mary Brown	SIM	apps/sd01/r ms/oracle/10 133/j2ee/sim-sd01/sim-home/library		PLCB	Java	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
CUS501	Customization	Replacement to the OTB Stock Count ReCount report	A custom report REP509 was created to replace the OTB report Stock Count ReCount. Customization was accomplished by creating a wholly new report and then changing the database entry which tell the SIM software which report to execute when the "Print" button is clicked. update rk_store_config set config_value	SIM	Store Operations Management		SIM	Stores	Wave IV	PLCB	SQL	1		This a basic SQL update statement, which would be run once to update a configutation. Note the SQL table is incorrect it should update the report_format and report_format_default tables.

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT010	Extension	GL Cross Walk form	Form created to maintain COA from 5 systems into Oracle	EBS	General Accounting	Bhupesh Bajaj			Wave I	Deloitte	Oracle forms, SQL	1		
EXT013	Extension	Out of Stock for RDF	Out of Stock for RDF	RMS	Forecasting and Replenishme nt	Carlo Rivera			Wave II	Deloitte	PL/SQL	1		
EXT016	Extension	Claims Process	Claims Process, This extension will get the transactions from the TRAN_DAT A tables that are due for claims processing. It will save it to a temporary table for analysis and billing. Also, includes user interface for grouping information and flagging records for printing	EBS	Claims Management	Mandeep Ahluwalia			Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT018	Extension	Permit Generator and Scheduler	Specifically used for allocations. Replaces the legacy permit system	RMS	Warehousing and Distribution Management	Rob Johns	RMS	RMS	Wave II	Deloitte	Oracle forms, SQL	1		
EXT019	Extension	CRP Block Hold on Invoices	Program to place custom hold on invoices for Supplier on CRP block	EBS	Accounts Payable	Candice Tse			Wave II	Deloitte	PL/SQL	1		
EXT031	Extension	Invoice Forms Personalization	Update fields in the invoice line and distribution level based on PO information	EBS	Accounts Payable				Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT033	Extension	Auto reconcilliation for cash	Oracle's out of box custom program reconciles the bank statements with the AP/AR transactions based on the payment document/receipt # and amount. Since all store transactions need to be reconciled with the store # which is not part of seeded program, customization is required. There could be other requirements based on the different	EBS	Sales and Cash Management				Wave III	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT034	Extension	EBS Bank Balance Update Program	The cash and check totals will be populated in the bank tables. All transaction totals flowing into EBS A/R module from ReSA/POS will be excluded from interface to bank tables. The EBS A/R transactions will cause the bank balances to go up hence the same needs to be excluded in order to avoid double	EBS	Sales and Cash Management		EBS		Wave III	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT036	Extension	Allocation Details to Transfer Order for RIMS	Since for Luxury items, transfer orders will be sent as allocation, a separate interface will be needed to pull and group data from Allocation	RMS	Warehousing and Distribution Management				Wave II	Deloitte	PL/SQL	1		
EXT037	Extension	Claims Management	Claims Management extensions in scope to automate the 920 form processing	RMS	Claims Management				Wave II	Deloitte	Oracle forms, SQL	1		
EXT038	Extension	SLA Customer Sources Function		EBS	General Accounting				Wave II	Deloitte	PL/SQL	1		
EXT039	Extension	New Fiscal Year Code Combinations		EBS	General Accounting				Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT041	Extension	Item and Pricing Toolkit	Pricing calculator formBoard Report: Regular items (dept 100 and 200) listed out for cost, retail price, item desception, supplier, for board approvalItem Workbench EXT2 to Vendor Portal - approvals: Approved items, changes, costs, prices back to vendor portal once approvedItem workbench EXT2 Regular/SLO to RMS	RPM	Product Data Management					Deloitte	Oracle forms, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT043	Extension	Inventory Build-Up	Form, Table, Background process to process 220 mil records, appworx scheduling	RMS	Inventory Control				Wave III	Deloitte	Oracle forms, PL/SQL	1		
EXT044	Extension	Forward Looking Store Demand	Pull EXT043 data based on case/pack qty	RMS	Forecasting and Replenishme nt				Wave III	Deloitte	PL/SQL	1		
EXT045	Extension	Warehous e Level Aggregate Forecast	Pull EXT044 data joining with RMS	RMS	Forecasting and Replenishme nt				Wave III	Deloitte	PL/SQL	1		
EXT046	Extension	Replenish ment Parameter Workbenc h	Front-end form for a user to set (in mass) key parameters for the RMS Replenishm ent and RDF Forecasting modules.	RMS	Forecasting and Replenishme nt					Deloitte	Oracle forms, PL/SQL	1		
EXT047	Extension	Replenish ment Analysis Workbenc h	Front-end form to identify exception transfer and purchase order quantities before being approved	RMS	Forecasting and Replenishme nt					Deloitte	Oracle forms, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT048	Extension	Bin Labeling	Printing the bin labels based on data in staging tableBin Label Main Extension: This is the main extension which would drive the entire Bin Label Printing process. There will be a feed of data to Extension1 from Interface1, Interface2, Interface3 and Extension2. Extension1 would use the data from all the various sources and should	RMS	Store Operations Management					Deloitte	PL/SQL, BI	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT056	Extension	Import System (Full Custom)	This extension will allow PLCB to enter and store Container, Bill of Lading, Allocation, and Carrier information in RMS. This extension, in combination with the Permit and PO information currently in RMS, will provide PLCB with the necessary information to produce the following four reports:1. IMP004 - Allocations Import	RMS	Warehousing and Distribution Management					Deloitte	Oracle forms, SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT058	Extension	Pick lists on SIM scanner to replenish shelves	Replenishm ent is system generated and not initiated by store personnel. PLCB would like a way to walk through the aisle and scan items that need to be replenished and create a	SIM	Store Operations Management	Balaji Narayanan				Deloitte	Java, SQL, BI	1		
EXT059	Extension	Auto divert of mdse to sales floor at receipt	Currently when PLCB receives inventory from WH, their system BEEPS if current SOH is less than 2. It lets them know to move stock to the shop floor. They would like this same functionality	MS	Store Operations Management					Deloitte	Java	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT063	Extension	Inventory Daily Update Program (RDW)		RDW	Forecasting and Replenishment				Wave III	Deloitte	SQL	1		
EXT066	Extension	SIM UPC Scan	Allow scanning of additional barcodes not included in SIM	SIM	Store Operations Management	Kevin Chou			Wave III	Deloitte	Java	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT067	Extension	Relieve Transfer Reserve Quantities	New RICEW Object Needed To Relieve Transfer Reserved Quantities: If one or more items on a transfer are requested but not shipped (and therefore not received), after receipt of the transfer, when the batch job that closes transfers (DOCCLOSE) runs, it sees that not all items on the transfer are shipped/received, so it does not close that transfer.	RMS	Warehousing and Distribution Management				Wave III	Deloitte	PL/SQL	1		
EXT068	Extension	SIM_ASNIn_Subscriber		SIM	Store Operations Management				Wave III	Deloitte	BPEL, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT069	Extension	SIM_RMS _Receipt_ Publisher		SIM	Store Operations Management				Wave III	Deloitte	PL/SQL	1		
EXT072	Extension	RTW Flow from SIM to RMS		SIM	Store Operations Management				Wave III	Deloitte	PL/SQL	1		
EXT075	Extension	DSD Multiple Receipts		RMS	Merchandise Procurement				Wave III	Deloitte	SQL	1		
EXT080	Extension	Bin Label Request Form	This is special request form such as request label for the new store (sister store).	RPM	Product Data Management				Wave IV	Deloitte	Oracle forms, PL/SQL	1		
EXT082	Extension	Bin Labeling Price / Promotion changes	This a a trigger to populate staging table for item in future price change and promotion	RPM	Product Data Management				Wave IV	Deloitte	SQL	1		
EXT084	Extension	Standalone Calculator	Standalone Calculator will be addressed through the spreadsheet outside the system	RPM	Product Data Management				Wave IV	Deloitte	Excel	1		
EXT085	Extension	Replenishment Batch Maintenance	Replenishment Batch Maintenance	RMS	Forecasting and Replenishment				Wave IV	Deloitte	Oracle forms, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT089	Extension	Item Introduction - Archive	This extension is to archive items as items will be deleted after 10 days	Order Portal	Order Management		RMS	EBS	Wave IV	Deloitte	PL/SQL	1		
EXT091	Extension	Coupon tracking	This extension will display redeemed coupons on Order Portal including extraction of coupons data from ReSA, then loading into custom tables in EBS and archiving data older than 3	Order Portal	Sales and Cash Management		ReSA	EBS	Wave IV	Deloitte	Java, PL/SQL, BI	1		Concurrent program executable
EXT092	Extension	Vendor Allowance Portal	Vendor Allowance Portal Maintenance and Search screen	EBS	Pricing and Promotions Management				Wave IV	Deloitte	OAF, PL/SQL	1		EXT092 & EXT093 are together
EXT093	Extension	Vendor Allowance Review Screen	Vendor Allowance Review screen	EBS	Pricing and Promotions Management				Wave IV	Deloitte	OAF, PL/SQL	1		EXT092 & EXT093 are together

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT095	Extension	Bin Labeling for New Item and Item Description Changes	This is a trigger to populate to the staging table when new item created and item description changes	RPM	Product Data Management		RMS	Store Shelf	Wave IV	Deloitte	PL/SQL	1		
EXT096	Extension	Sales and Cost of Sales Allocation	Allocates Sales and Cost of Sales GL balances from the department level to the class level and then stages all of the GL balances into proper format for	RDW	Financial Planning		RDW	RDW	Wave IV	Deloitte	SQL	1		
EXT099	Extension	SCC Synchronize Extension	This extension will synchronize some changes to the PLCB code to the SCC level. E.g Cost changes and vendor	RMS	Product Data Management		RMS	RMS	Wave IV	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT100	Extension	Default Upcharges	This procedure ("xxlcb_create_upcharges") will run in the Replenishment chain will default the up-charges for the replenishment transfers.	RMS	General Accounting		RMS	Finance	Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT101	Extension	Update Hanging Allocation to Delete Status	This extension will update hanging allocations caused by the ghost session into delete status pending the purge batch job to remove from the system. When allocations are in hanging status, it is not accessible thru front end. This extension only run once per month.	RMS	Forecasting and Replenishment		Allocation	Allocation		Deloitte	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT102	Extension	Inventory Reconciliation Program	This is a program which resolves on-hand and non-sellable inventory discrepancies between RMS and SIM	RMS & SIM	Store Operations Management		RMS & SIM	n/a	Wave IV	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT105	Extension	New Order Entry Form	Allow for multiple order adjustments before sale - Allow user to finalize orders - Allow users to print orders on demand - Allow price overrides - Allow entry and modification of adjustment/delivery charges - Allow modification of SLO Order before deposit receipt - Allow adjustment of SLO Order after receipt - Ensure user not	Order Management	Order Management	Bhushan Kokje	Manual data entry	Order Portal	Wave IV	Deloitte	OAF, PL/SQL	1		EXT105 & EXT106 are together

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT106	Extension	New Quick Order Entry Form	- Allow price overrides - Allow entry and modification of adjustment/delivery charges - Allow printing of orders upon	Order Portal	Order Management	Bhushan Kokje	Manual Data Entry	Order Portal	Wave IV	Deloitte	OAF, PL/SQL	1		EXT105 & EXT106 are together
EXT107	Extension	Order Fulfillment	- Similar to EXT049 - Allow adjustment to orders reflect in modification to existing order reservations - Reservation release process modification	Order Management	Order Management		Order Management	SIM	Wave IV	Deloitte	BPEL, PL/SQL	1		
EXT108	Extension	Generate Pick List for Sales Order (SIM)	- Similar to EXT050 - Allow adjustment to orders reflect in modification to existing pick lists	Order Management	Order Management		Order Management	RMS	Wave IV	Deloitte	BPEL, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT109	Extension	Sales Order Fulfillment (RMS)	- Similar to EXT054 - Creation of RTV upon adjustment to an SLO Order after receipt	RMS	Order Management		Order Management	RMS	Wave IV	Deloitte	BPEL	1		
EXT111	Extension	Order Recalculation Batch Program	- Nightly batch job to recalculate order totals after execution of INT206	Order Management	Order Management		Order Management	Order Management	Wave IV	Deloitte	PL/SQL	1		
EXT112	Extension	RPM to ORPOS Publish Batch	- Modify out of box program in RPM v12.0.6 and retro fit to requirements in Oracle POS v13	Order Management	Order Management		RPM	POS	Wave IV	Deloitte	PL/SQL	1		
EXT113	Extension	RPM to ORPOS Publish Export	- Modify out of box program in RPM v12.0.6 and retro fit to requirements in Oracle POS v13	Order Management	Order Management		RPM	POS	Wave IV	Deloitte	SQL, UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT114	Extension	Batch ORPOS Extract	Modify out of box program in RMS v12.0.6 and retro fit to requirements in Oracle POS v13	Order Management	Order Management		RMS	POS	Wave IV	Deloitte	SQL, UNIX	1		
EXT115	Extension	RPM-RMS Payload table purge	- Develop purge procedure to purge records in the payload table that have been interfaced to POS	RPM	Pricing and Promotions Management		RPM	RPM	Wave IV	Deloitte	UNIX	1		
EXT116	Extension	Vendor Collaboration Portal - Orders Tab	Allows the vendor to view Purchase Orders	EBS	Warehousing and Distribution Management		EBS	n/a		Deloitte	SQL, UNIX	1		
EXT117	Extension	Store Portal	Large Extension for Store Portal	EBS	Warehousing and Distribution Management		EBS	n/a		Deloitte	PL/SQL	1		FNDLOAD
EXT118	Extension	Create Bailment PO's	Create Bailment PO's for consumption quantities	RMS	Warehousing and Distribution Management		RMS	n/a	Bailment	Deloitte	PL/SQL	1		
EXT119	Extension	Create/Cancel Transfer Order	Create/Cancel Transfer Order	EBS	Order Management		EBS	RMS		Deloitte	BPEL, PL/SQL	1		
EXT120	Extension	Create RTV	Create RTV	EBS	Order Management		EBS	RMS		Deloitte	BPEL, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT121	Extension	Create/Cancel Purchase Order	Create/Cancel Purchase Order	EBS	Order Management		EBS	RMS		Deloitte	BPEL	1		
EXT122	Extension	REQEXT Modification 2	Used to recreate transfers made by the earlier based on the store user's inputs	RMS	Forecasting and Replenishment		RMS	n/a		Deloitte	ProC/Unix, SQL	1		
EXT125	Extension	Real Time Inventory Check	Real Time Inventory Check Web Service	eCommerce	Sales and Cash Management		ecommerce	SIM		Deloitte	BPEL, PL/SQL	1		
EXT126	Extension	xxlcb_saldy_weekly	Create new table to capture rolled up weekly data from Daily Data	EBS	General Accounting		EBS	EBS		Deloitte	PL/SQL	1		
EXT127	Extension	Vendor Collaboration Portal - Shipments Tab	Allows the PLCB and vendor to approve and create shipments	EBS	Warehousing and Distribution Management		EBS	n/a		Deloitte	OAF, SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT128	Extension	Vendor Collaboration Portal - Planning Tab	Allows the vendor to plan future warehouse demand for creating ASN's to replenish the warehouse	EBS	Warehousing and Distribution Management		EBS	n/a		Deloitte	OAF, SQL	1		
EXT129	Extension	Vendor Collaboration Portal - Invoices Tab	Allows the vendor to enter invoices against purchase orders	EBS	Warehousing and Distribution Management		EBS	n/a		Deloitte	OAF, SQL	1		
EXT130	Extension	Vendor Collaboration Portal - Returns Tab	Allows the vendor to enter returns that will be shipped out of the warehouse.	EBS	Warehousing and Distribution Management		EBS	n/a		Deloitte	OAF, SQL	1		
EXT131	Extension	xxlcb_saldy_montly	Create new table to capture rolled up Monthly data from Weekly Data	EBS	General Accounting		EBS	EBS		Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT132	Extension	Complete Unit & Amount Stock Count in RMS	After a Unit and Amount Stock count is Authorized (Completed) in SIM, several events need to take place in order to update RMS inventory with the counted quantities from SIM and complete the stock count in RMS. This extension will automate all those events	RMS	Store Operations Management		SIM	RMS		Deloitte	PL/SQL, UNIX	1		
EXT137	Extension	XXLCB ReSA Post Void Patch Customization	XXLCB ReSA Post Void Patch Customization	RMS			RMS	RMS		Deloitte	ProC, PL/SQL	1		POS Integration

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT138	Extension	Replenishment Item Location Form	This new RMS form will give Supply Chain planners a 360 degree view of replenishment items at specific locations to help investigate replenishme	Replenishment	Forecasting and Replenishment		RMS			Deloitte	Oracle forms, PL/SQL	1		CO27
EXT139	Extension	Replenishment Data Append batch program	This new batch program will populate additional columns in the XXLCB_REPL_RESULTS table with replenishme	Replenishment	Forecasting and Replenishment		RMS			Deloitte	PL/SQL	1		CO27

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT141	Extension	Closed Store Allocation Re-assignment	This extension will re-assign the closed store location to new store for any previously approved allocation which has not been appended to	Allocation	Forecasting and Replenishment	Katrina Wan	RMS	RMS		Deloitte	PL/SQL, BI	1		
EXT142	Extension	RIB Hospital Clean-up Program	This program will be scheduled to run on a daily basis in AppWorx and will delete obsolete messages from the RMS and SIM RIB	RMS & SIM	Store Operations Management	Jake Whalen	RMS & SIM	n/a		Deloitte	PL/SQL	1		
EXT143	Extension	XXLCB OM Order Queue Monitor Program	XXLCB OM Order Queue Monitor Program	EBS	Order Management	Bhushan Kokje	EBS	EBS		Deloitte	PL/SQL	1		FNDLOAD

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT144	Extension	WH To Store Shipping Picking Disputes	This form which will be used to manage disputes between Warehouses and Stores over quantitites claimed to be shipped erroneously to the store from the	RMS	General Accounting	Gourav Banerjee	RMS	RMS		Deloitte	Oracle forms, SQL	1		
EXT145	Extension	XXLCB_D EAL_INVO ICE	Create deal invoices (replacing VENDINVC)	Retail	Pricing and Promotions Management	Joseph Lee	RMS	n/a		Deloitte	PL/SQL	1		
EXT146	Extension	New User Interface to maintain the configurable parameters for the Bailment Penalty	New User Interface to maintain the configurable parameters for the Bailment Penalty	Bailment	Warehousing and Distribution Management	Amit Bordia	RMS		Bailment	Deloitte	Oracle forms, SQL	1		
EXT147	Extension	AutoClose Invalid Allocations	Autoclose Program- close old allocations that needed to be cleared out	RMS	Warehousing and Distribution Management	Ranjita Behera	RMS			Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT148	Extension	OM Dashboard	OM Dashboard	EBS	Order Management	Bhushan Kokje	EBS	EBS		Deloitte	OAF, PL/SQL	1		
EXT151	Extension	Store Portal Threshold Form	Form will allow users to change the Store Portal thresholds for stores and location lists	RMS	Forecasting and Replenishment	Joseph Lee	RMS	RMS		Deloitte	Oracle forms, SQL	1		
EXT152	Extension	Penalties Approval Screen	This form which will be used to approve bailment penalties	RMS	Warehousing and Distribution Management	Gourav Banerjee	RMS	RMS	Bailment	Deloitte	Oracle forms	1		
EXT153	Extension	EBS Release blocked inventory	Release inventory in SIM for Closed/Cancelled Orders	EBS	Order Management	Pradeep Rakarapu	EBS	SIM		Deloitte	PL/SQL	1		FNDLOAD
EXT155	Extension	XXLCB Ecommerce Order Maintenance Process	Process to maintain order status for the Ecommerce orders	EBS	Order Management	Pradeep Dakarapu (Deloitte)	eCommerce	EBS		Deloitte	PL/SQL	1		FNDLOAD

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT156	Extension	Avoid Partial Case Consumption	These are ad hoc scripts which need to be executed using Appworx to avoid partial cases in consumption purchase orders	RMS	Order Management	Gourav Banerjee	RMS	RMS		Deloitte	PL/SQL	1		
EXT157	Extension	Common weekly purge program	Extension to purge low and medium volume custom tables	All		Connor Sage	RMS & EBS			Deloitte	PL/SQL	1		
EXT158	Extension	Deal Post CleanUp	This is a post processing to correct incorrect tran_date and deal_actuals _item_loc records created due to Oracle	RMS	Pricing & Promotion	Katrina Wan	RMS	RMS		Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT159	Extension	Create VFP Deals	This extension will create vendor funded deals for approved or active VFP promotions. This will prevent RPM from creating multiple deals per	RPM	Pricing & Promotion	Carlo Rivera	RPM	RPM		Deloitte	PL/SQL	1		
EXT160	Extension	RPM New Store Process	This program will populate RPM tables for new stores. It will also inherit existing / future price events if there are	RPM	Pricing & Promotion	Carlo Rivera	N/A	N/A	Production Support	Deloitte	UNIX			4/16/2014
EXT161	Extension	RDF Scripts for new domains	This extension will build new RDF domains as well as modify the multi-threading of existing RDF scripts	RDF	Forecasting	Carlo Rivera	RDF	RDF	Post Production	Deloitte				4/29/2014

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT316	Extension	POS to ReSA RTLOG file adapter	Copy the RTLog files from common directgory to Oracle	POS		Ritesh Garg					UNIX	0		no source
EXT317L	Extension	Licensee Store Pickup-Create/Update/Cancel Order		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	ADF			
EXT318L	Extension	Licensee LDP-Create/Update/Cancel Order		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	ADF			
EXT319L	Extension	Supply Chain - Review & Approve Order		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	ADF, PL/SQL			
EXT320L	Extension	Warehouse Manager - Record Delivery		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	ADF			
EXT321L	Extension	Order Portal Common Components		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	ADF			
EXT322L	Extension	Create/Update/Cancel Order in OM		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	PL/SQL			
EXT323L	Extension	Process Order Updates		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	PL/SQL			

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT324L	Extension	Process AR Receipts & Remitance		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	PL/SQL			
EXT325	Extension	BL_PEN_ST_DEMAND_DEL	This job will allow the Supply chain team to clear the store demand on a given day to avoid penalizing	RMS	Supply Chain	Pradeep Patil	RMS	RMS	Production Support	Deloitte				1/28/2014
EXT326L	Extension	Order Portal – Order Templates	Split from EXT317L	EBS		Vijay Iyer	EBS		LDP	Deloitte	ADF			2/6/2014
EXT327L	Extension	Order Portal – Item Inquiry	Split from EXT318L	EBS		Vijay Iyer	EBS		LDP	Deloitte	ADF			2/6/2014
EXT328L	Extension	Licensee Sales Order Fulfillment		RMS		Rebecca Kim			LDP	Deloitte	PL/SQL			2/11/2014
EXT329L	Extension	Reprice Licensee Orders		EBS		Rebecca Kim			LDP	Deloitte	PL/SQL			2/11/2014

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT330L	Extension	LDP Store In-transit Inventory cleanup	This extension will clear the in_transit, stock_on_hand and tsf_expected inventory buckets at the default stores for LDP order transfer	RMS	Supply Chain – WH Operations	Vijay Iyer	RMS	RMS	LDP	Deloitte	PL/SQL			4/23/2014
EXT331L	Extension	Customer Contact Creation/Update Process		EBS	Supply Chain	Rebecca Kim			LDP	Deloitte	PL/SQL			5/7/2014
EXT332L	Extension	Customer Contact Maintenance Page		EBS	Supply Chain	Rebecca Kim			LDP	Deloitte	ADF			5/7/2014
EXT505	Extension	Update / correct forecast quantity in RDW	Purge future store level forecast values for items no longer carried at location	RDW	Business Intelligence		RDW	RDW		PLCB	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT506	Extension	Deactivate Automatic Replenishment Items in Stores	Script will delete records from REPL_ITEM _LOC table under certain strict requirements. Records of the action will be written to a custom table from which they will be reported under report REP513. REF PSI# 1699	Replenishment	Forecasting and Replenishment		RDF	RDF, RMS, Stores		PLCB	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT507	Extension	Activate items for automatic replenishment	Script will insert records into REPL_ITEM_LOC table under certain strict requirements. Records of the action will be written to a custom table from which they will be reported under report REP513. REF PSI# 1699	Replenishment	Forecasting and Replenishment		RDF	RDF, RMS, Stores		PLCB	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT508	Extension	Change SLO freight records when vendor changes	From time to time, SLO items have a change of Vendor Number - vendor of record - when this happens, the supplier id in the XXLCB_OM_SLO_FREIGHT_T must be changed to the new supplier id. This extension will handle that process. This is to provide a functionality omitted in EXT090	Order Portal	Order Management		EBS	EBS		PLCB	PL/SQL	1		FNDLOAD

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT510	Extension	Create snapshot files of Stock on Hand and Future Dated Transactions	Create snapshot file from the ITEM_LOC_SOH table; create a snapshot file of future dated transactions which would have affected the SOH data. The true inventory balances will be the current SOH less the future dated transactions. Creation of file supports reconcilliation of RMS to GL	RMS	General Accounting		RMS	RMS		PLCB	PL/SQL	1		
EXT511	Extension	EXT511_TRAN_CNT_WK	roll up transaction counts by week and write to RDW table	BI Publisher	Business Intelligence	Mark Kleinsak	RDW	RDW		PLCB	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT512	Extension	EXT512_TRAN_CNT_MTH	roll up ransaction counts by month and post to RDW table	BI Publisher	Business Intelligence	Mark Kleinsak	RDW	RDW		PLCB	PL/SQL	1		
EXT513	Extension	Build data tables for REP535	Builds and inserts data records into 4 custom tables. The tables are the inout source files for REP535	RMS / GL Reconciliation	General Accounting	Rich Becker	RMS & EBS	RMS		PLCB	PL/SQL	1		
EXT514	Extension	Build data tables for REP537	Populate 5 custom tables with the data summaries necessary to produce report REP537 (MONTHLY SNAPSHOT RECONCILIATION)	RMS / GL Reconciliation	General Accounting	Dave Fischer / Joseph Lee	RMS & EBS	n/a		PLCB	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT515	Extension	EXT515_Delete_Duplicate_RPM	A script to run weekly. Finds RPM_FUTURE_RETAIL records which are duplicates and deletes records with the oldest action dates.	RPM	Pricing and Promotions Management	Tim Fink	RPM	RPM		PLCB	PL/SQL	1		
EXT516	Extension	Request Transfer Email	Extension to generate an email message from a requesting store to the supplying store whenever a store-to-store transfer request is	SIM	Store Operations Management	Robert Sweigart	SIM	email		PLCB	Java, PL/SQL	1		
EXT517	Extension	Edit check Luxury Item XML file	Program will read and validate a user supplied XML data file of information to be used in creating new items	RMS	Product Data Management	Rich Becker	user	RMS		PLCB	VB.net, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT518	Extension	Batch write of new item data to RMS	Will post new item data to Item_Master, Item_Supplier, Item_Supp_Country, Item_Supp_country_Dim, UDA_Item_LOV, PackItem and PackItem_Breakout	RMS	Product Data Management	Rich Becker	EXT517	RMS		PLCB	VB.net, PL/SQL	1		
EXT519	Extension	CORRECT_DUP_INV	will correct dup inventories in BI.	BI Publisher	Business Intelligence	Mark Kleinsak	RDW	RDW		PLCB	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT520	Extension	Batch - Create Purchase Orders for Luxury	Program will receive an XML file of required data from the Luxury Wines functional area. The file will be pre-edit checked through another program. This program will create the Purchase Orders in "W" status by writing to the ORDHEAD, ORDSKU, ORDLOC and ORDLOC_E	RMS	Order Management	Rich Becker	user supplied XML file	RMS		PLCB	VB.net, PL/SQL	1		
EXT521	Extension	Create Allocations for Luxury Purchase Orders	Batch process to create allocations for Luxury Goods Purchase Orders	RMS / Allocation	Merchandise Procurement	Rich Becker	XML file	RMS		PLCB	VB.net, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT522	Extension	Auto Close Permits	Program will compare warehouse receipts from suppliers to the open permits/ When a receipt can be matched to a permit based on loacation, date, PO number and item then the ermit will have its status changed to	RMS	Warehousing and Distribution Management	Rich Becker	RMS	RMS		PLCB	PL/SQL	1		
EXT523	Extension	EXT523_ OUTDATE D_SBC	This will delete outdated sub-class forecasts	BI Publisher	Forecasting and Replenishme nt	Mark Kleinsak	RDW	RDW		PLCB	PL/SQL	0		
EXT524	Extension	method for .NET application s to make connection s to the correct servers	a C# class / method to provide a common method for connecting to database and other data servers	All applications developed in Visual Studio (VB or C#)		Donald Becker	n/a	all servers		PLCB	CS.NET	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT525	Extension	common security validation for WEB apps	a class & method for .NET web applications to validate a User's authorization for a specific web application	All WEB applications		Donald Becker	n/a	WEB (intranet)		PLCB	CS.NET	1		
EXT526	Extension	BI Publisher WEB Service Trigger	A C# program which can be run under AppWorx. The program will collect parameters and invoke an Oracle Web Service to run a BI Publisher Report.	All		Donald Becker	All	All		PLCB	CS.NET	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT527	Extension	Template for AppWorx to run Crystal Reports	A shell module to be run under AppWorx. The program will collect parameters and invoke a C# progam to run a Crystal Reports batch program. .	All		Donald Becker	All	All		PLCB	CS.NET	1		
EXT528	Extension	Program to execute VB SCRIPTS from AppWorx	C# program. Callable from AppWorx, which will execute VB Script files	All		Donald Becker	All	All		PLCB	CS.NET	1		
EXT529	Extension	Online Reports archiving and cleanup	Online Reports archiving and cleanup	All	Agency	Donald Becker	All	All		PLCB	CS.NET	1		
EXT530	Extension	CWOPA Signin procedure similar to "Report Center" process	CWOPA Signin procedure similar to "Report Center" process	All	Agency	Donald Becker	All	All		PLCB	CS.NET	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT531	Extension	TFS Windows Migration Automation	Extension to automate the migration and installation of Windows based applications	Web/Windows	RICEW	Donald Becker	All	All		PLCB	CS.NET	1		
EXT532	Extension	MoveFileDeleteFTP	Move file(s) from one location to another. Parameter of source directory and parameter for destination directory. Optional parameter of the FTP site to delete the file(s) that was moved).	All	Agency	Thai Diep	All	All		PLCB	CS.NET	0		non_retail -- Agency -- Batch
EXT533	Extension	C# program to execute SQL Server queries	Have need to run SQL against SQL Server from Appworx	All	Agency	Donald Becker	SQL Server	SQL Server		PLCB	CS.NET	1		
EXT534	Extension	Kills REPORT_USER sessions in RDW	End run away sessions	RDW	Agency	Barry Warner	RDW	RDW		PLCB	UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
EXT535	Extension	TFS IBMS Migration Automation	Extension to automate the migration and installation of IBMS based applications	Web/IBMS	RICEW	Donald Becker	All	All		PLCB	CS.NET / Unix scripting			
EXT536	Extension	EXT536_Void_Summary	Summarize voided transactions by day/loc/clerk /type	RDW	none	Mark Kleinsak / Raja Kolluri	RDW	RDW	Production Support	PLCB	PL/SQL			5/9/2014
INT002	Interface	RMS-RIMS : Items (SCC)	The interface contains the Product Data published out by the RMS system to RIMS	RMS	Product Data Management		RMS	RIMS	Wave II	Deloitte	PL/SQL	1		
INT010	Interface	RMS-RIMS : Suppliers	The interface contains the vendor data which is published out to the multiple systems	RMS	Merchandise Procurement		RMS	RIMS	Wave II	Deloitte	PL/SQL	1		INT010 & 012 are together

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT012	Interface	EBS-NABCA : Suppliers	The interface contains the vendor data which is published out to the multiple systems	EBS	Accounts Payable		EBS	NABCA	Wave II	Deloitte	PL/SQL	1		INT010 & 012 are together
INT017	Interface	RMS-RIMS : Store Location	The interface contains the Store/Location data which is published out to RIMS	RMS	Store Operations Management		RMS	RIMS	Wave II	Deloitte	BPEL, PL/SQL	1		
INT025	Interface	RPM-POS : Promo, Clearance, Price	Data related to Promotions, Clearance and Price pushed out to POS	RPM & SIM	Product Data Management		RPM	POS	Wave II	Deloitte	PL/SQL	1		
INT030	Interface	RMS-POS : Items	Inventory balances pushed out by RMS to Manugistics	RMS	Product Data Management		RMS	Manugistics	Wave II	Deloitte	PL/SQL	1		
INT035	Interface	RMS-EDI : PO	Purchase Orders pushed out by RMS to EDI System	RMS	Merchandise Procurement		RMS	EDI	Wave II	Deloitte	PL/SQL, UNIX	1		The BPEL process obsoleted during Bailment
INT049	Interface	RMS-RIMS : Transfers Orders	Inventory transfer information from RMS to RIMS	RMS	Warehousing and Distribution Management		RMS	RIMS	Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT052	Interface	RIMS-RMS : Inventory Adjustments	Inventory adjustment published by RIMS to RMS	RMS	Inventory Control		RIMS	RMS	Wave II	Deloitte	BPEL, PL/SQL	1		
INT055	Interface	RIMS-RMS : Receipts	Receipts/Returns information published by the RIMS to RMS	RMS	Warehousing and Distribution Management		RIMS	RMS	Wave II	Deloitte	BPEL, PL/SQL	1		
INT061	Interface	Mangugistic-RMS : Matched Invoices	Load Info published by the Manu system (Purchase Orders) to RMS	RMS	Merchandise Procurement		Manugistics	RMS	Wave II	Deloitte	BPEL, PL/SQL	1		
INT070	Interface	HR Employee	Employee data extract from SAP into EBS and POS (INTF_0186 - PA Agency Interface)	EBS	Product Data Management				Wave II	Deloitte	PL/SQL	1		
INT091A	Interface	Treasury-AP : Daily Warrants	Warrant Information (INTF_0058- Daily Warrants)	EBS	Accounts Payable		Treasury	AP	Wave II	Deloitte	PL/SQL, UNIX	1		
INT092	Interface	AP-Treasury : Payment Request to Treasury	AP Payments to Treasury (INTF_0060 - Treasury Invoice Payment Requests)	EBS	Accounts Payable		AP	Treasury	Wave II	Deloitte	PL/SQL, UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT095	Interface	ACH Transfer to Mellon Bank	ACH file from EBS to Mellon bank	EBS	Sales and Cash Management				Wave III	Deloitte	PL/SQL, UNIX	1		
INT110	Interface	Bureau of Licensing-AR : Licensee Master Data	Part of Customer Master Interface/ Updates Licensee Master data	EBS	Accounts Receivables		Bureau of Licensing	AR	Wave III	Deloitte	PL/SQL	1		
INT113	Interface	GL-SAP : GL Expenditures	Detailed expenditure by COA	EBS	General Accounting		GL	SAP	Wave II	Deloitte	BPEL, PL/SQL	1		
INT113A	Interface	GL-SAP : GL Commitments	Commitment - Commitment Item Level	EBS	General Accounting		GL	SAP	Wave II	Deloitte	BPEL, PL/SQL	1		
INT118	Interface	GL Payroll		EBS							PL/SQL	1		
INT130	Interface	RIMS-RMS : Shipments	Bill of Lading (BOL) information from RIMS to RMS	RMS	Warehousing and Distribution Management		RIMS	RMS	Wave II	Deloitte	PL/SQL	1		
INT134	Interface	EBS to RMS Supplier	Add or update the RMS supplier from the EBS supplier	EBS	Product Data Management	Tom Baker	EBS	RMS	Wave II	Deloitte	BPEL	1		
INT137	Interface	RMS-RIMS : Stock Count Request	Stock Count Request - RIMS	RMS	Inventory Control		RMS	RIMS	Wave II	Deloitte	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT145	Interface	RMS-EBS : ReSARMS Journals to GL		RMS	General Accounting		RMS	BPEL	Wave I	Deloitte	BPEL	1		
INT146	Interface	ReIM-AP : Matched Invoices	ReIM approved payments to Account Payables	ReIM	Accounts Payable		ReIM	AP	Wave II	Deloitte	BPEL, PL/SQL	1		
INT149	Interface	RMS-Manugistics : Items/Product Information	The interface contains the Product Data published out by the RMS system to Manugistics	RMS	Product Data Management		RMS	Manugistics	Wave II	Deloitte	PL/SQL	1		
INT152	Interface	Manugistics-RMS : DCTO	DCTO Transfers from Manugistics to RMS	RMS	Forecasting and Replenishment		Manugistics	RMS	Wave II	Deloitte	BPEL, PL/SQL	1		
INT156	Interface	Outbound RETL for Merchandise Hierarchy	Merchandise Hierarchy information including Altnernate Hierarchies based on UDAs	RMS	Business Intelligence				Wave II	Deloitte	UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT157	Interface	Inbound RETL for Organizational Hierarchy	Location Hierarchy information including Altnernate Hierarchies based on UDAs	RMS	Business Intelligence				Wave II	Deloitte	UNIX	1		
INT158	Interface	Inbound RETL for Sales History Data	Sales	RMS	Business Intelligence				Wave II	Deloitte	UNIX	1		
INT159	Interface	Inbound RETL for Out of Stock Indicator	Transfer Out of Stock indicators from RMS to RDF to support preprocessing	RMS	Business Intelligence				Wave II	Deloitte	PL/SQL, UNIX	1		
INT160a	Interface	CRP Block Supplier Inbound (L&I)	Interface from L&I to get details on suppliers with CRP blocks	EBS	Accounts Payable				Wave II	Deloitte	PL/SQL	1		
INT160b	Interface	CRP Block Supplier Outbound (L&I)	Interface to L&I to get details on suppliers with CRP blocks	EBS	Accounts Payable				Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT160c	Interface	CRP Block interface (Dept of Revenue)	Interface from Dept of Revenue to get details on suppliers with CRP blocks	EBS	Accounts Payable				Wave II	Deloitte	BPEL, PL/SQL	1		
INT161	Interface	Licensed Supplier Inbound	Maintain the supplier license details like license number, license expiration date etc	EBS	Accounts Payable				Wave II	Deloitte	PL/SQL	1		
INT162	Interface	Store Supply Orders Inbound	Interface to bring in supplies orders (DGS warehouse orders) from stores thru POS to Oracle PO module	RMS	Non-Merchandise Procurement				Wave II	Deloitte	PL/SQL, UNIX	1		
INT173	Interface	RMS-Mangustics : In-Transits	In Transit/On Order information from RMS to Manugistics	RMS	Forecasting and Replenishment		RMS	Manugistics	Wave II	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT192	Interface	CE_999 Interface	All sales by stores affiliated to the non Armored bank account through tender type of cash and check will be brought in as daily totals from the staging area into EBS Cash Management module populating CE 999 table. All sales by stores affiliated to the Armored bank account with tender of cash and checks will be brought in as separate	EBS	Sales and Cash Management				Wave III	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT193	Interface	Bank Statement Interface	Bank statements are uploaded in Cash Management in BAI2 format. This has header and lines details that are required. In this format the store number must be captured this for reconciliation with open interface data. There are fields available to map a store number to columns such as Customer_TXT, TRX_TXT, and INVOICE_T	EBS	Sales and Cash Management				Wave III	Deloitte	PL/SQL, UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT200	Interface	EBS-RMS : PDFÕs for PO and Invoices	Invoices that are not sent by a supplier, like SLO invoices, ERS invoices need to be extracted as cXML document and placed on a shared server for Treasury retrieval. Treasury needs these XML files for approval of payments. Request originated from Treasury	EBS	Accounts Payable		EBS	RMS	Wave II	Deloitte	PL/SQL, UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT201	Interface	UPS Interface	Provide move order data (ship to store, address and charge account) to UPS application at the DGS Warehouse. This will enable: a. printing of UPS shipping label b. UPS to provide the cost center details at the time of	RMS	Merchandise Procurement				Wave II	Deloitte	PL/SQL	1		
INT202	Interface	Indexing of the Invoices with Imaging system		EBS	Accounts Payable				Wave II	Deloitte		0		no source
INT203	Interface	WebADI - AP Invoice upload	Interface to load invoices manually using WebADI spreadsheet	EBS	Accounts Payable				Wave II	Deloitte	PL/SQL	1		
INT206	Interface	RPM-OM : Pricing	Item Pricing data from RPM.	RPM & SIM	Order Management		RPM	OM	Wave III	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT207	Interface	RMS-INV : Items	Merchandise item data. Includes categories (merch hierarchy)	RMS	Order Management		RMS	INV	Wave III	Deloitte	PL/SQL	1		
INT251	Interface	RMS-RDW : RETL - Calendar Hierarchy	Calendar Hierarchy information supporting the 4 - 5 - 4 calendar	RMS	Business Intelligence		RMS	RDW	Wave II	Deloitte	UNIX	1		
INT256	Interface	RMS Import SPA		RMS	Product Data Management	Connor Sage			Wave II	Deloitte	PL/SQL	1		
INT264	Interface	RMS-ReIM : Evaluated Receipt for SLO	This interface will create invoice in ReIM once the SLO orders are received at the store	RMS	Accounts Payable		RMS	ReIM	Wave III	Deloitte	BPEL, PL/SQL	1		
INT268	Interface	RMS-RDF : Aggregated Store Demand to Manugistics		RMS	Forecasting and Replenishment		RMS	RDF	Wave III	Deloitte	PL/SQL	1		
INT272	Interface	Product (CatMan RETL)	Product Hierarchy Data	RMS	Business Intelligence				Wave III	Deloitte	UNIX	1		
INT273	Interface	Location (CatMan RETL)	Location Hierarchy Data	RMS	Business Intelligence				Wave III	Deloitte	UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT275	Interface	Measures (CatMan RETL)	RMS unit sales history	RMS	Business Intelligence				Wave III	Deloitte	UNIX	1		
INT278	Interface	OM-BPEL : Sales Order Status		RMS	Order Management		OM	BPEL	Wave III	Deloitte	BPEL	1		
INT280	Interface	ReAS to RDW Sales Interface		RMS		Eddi Ser	ReSA	RDW		Deloitte	UNIX	1		
INT289B	Interface	RMS – EDI Item Interface from Order Portal	RMS – EDI Item Interface from Order Portal	RMS	Order Management		RMS	Vendor Portal	Wave IV	Deloitte	PL/SQL	1		
INT292	Interface	Automatic Upload of Causal Factors to RDF	Interface takes the output of the logistics promotional event calendar and loads it into RDF. Replaces the manual process from Wave	RDF	Forecasting and Replenishment		Excel sheet, data from EBS	RDF	Wave IV	Deloitte	PL/SQL, UNIX	1		
INT293	Interface	EBS to RDW GL Balances	Extracts GL Balances into a flat file and loads into a custom RDW table	EBS GL	Financial Planning		EBS GL	RDW	Wave IV	Deloitte	UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT294	Interface	EBS OM to Oracle POS Order Details Real Time Interface	This web service will transmit new orders and order adjustments to POS - Will be triggered by Oracle workflow	Order Management	Order Management		OM	JMS Queue	Wave IV	Deloitte	BPEL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT295	Interface	Order Portal to EBS Order Management Real Time Interface	Similar to INT204 - Allow for multiple order adjustments before sale - Allow user to finalize orders - Allow price overrides - Allow entry and modification of adjustment/delivery charges - Allow modification of SLO Order before deposit receipt - Allow adjustment of SLO Order after receipt	OM	Order Management		Ordal Portal	Order Management	Wave IV	Deloitte	BPEL, PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT296	Interface	Sales, Revenue, Overages and Shortages	- Similar to INT195 - Imports Sales, Revenue, Overage and Shortage records into GL based on ReSA totals	RMS	Sales and Cash Management		ReSA	General Ledger	Wave IV	Deloitte	PL/SQL	1		
INT297	Interface	Cash Management ACH Interface	- Similar to INT261 - Creates ACH data in Cash Management based on ReSA totals	EBS	Sales and Cash Management		ReSA	EBS Cash Management	Wave IV	Deloitte	PL/SQL, UNIX	1		
INT299	Interface	EBS HR to POS Store Employees Batch Interface	Nightly batch to interface employee details to Oracle POS	HR Employee hours	Store Operations Management		EBS HR	POS	Wave IV	Deloitte	PL/SQL	1		
INT300	Interface	EBS AR to POS Licensee Customer Batch Interface	- Interface licensee information from EBS to POS as a nightly batch Interface	RMS	Store Operations Management		EBS AR	POS	Wave IV	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT306	Interface	ROQ to Store portal	Send recommended order quantities to the store portal for store review.	RMS	Forecasting and Replenishment		RMS	EBS		Deloitte	SQL	1		
INT307	Interface	Modified Orders from store portal to RMS	Return modified store orders from the store portal and make necessary adjustments in RMS.	RMS	Forecasting and Replenishment		EBS	RMS		Deloitte	SQL, UNIX	1		
INT308	Interface	ASN's from EBS to RMS for Bailment Portal	Send approved vendor ASN's from the Bailment Portal to RMS.	RMS	Warehousing and Distribution Management		EBS	RMS	Bailment	Deloitte	PL/SQL	1		
INT309	Interface	Item forecast to Bailment Portal	Send item forecast to the Bailment Portal	RMS	Forecasting and Replenishment		RMS	EBS	Bailment	Deloitte	PL/SQL, UNIX	1		
INT310	Interface	Sales History to Bailment Portal	Send sales history to the Bailment Portal	RMS	Forecasting and Replenishment		RMS	EBS	Bailment	Deloitte	SQL	1		
INT311	Interface	Stock on hand to Bailment Portal	Send stock on hand to the Bailment Portal	RMS	Forecasting and Replenishment		RMS	EBS	Bailment	Deloitte	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT313	Interface	PO/Invoice information to Bailment Portal	Send consumption data to the Bailment Portal	RMS	Forecasting and Replenishment		RMS	EBS	Bailment	Deloitte	SQL	1		
INT314	Interface	PO/Transfer receipt	SIM to EBS PO /Transfer Receipt Real Time Interface	SIM	Order Management		SIM	EBS		Deloitte	BPEL, PL/SQL	1		
INT315	Interface	Order Sale	POS to EBS Order Sale Real Time Interface	POS	Order Management		POS	EBS		Deloitte	BPEL, PL/SQL	1		
INT317	Interface	Bailment Return to Vendor data from Portal to RMS	Interface to send vendor's bailment RTV requests to RMS	RMS	Warehousing and Distribution Management		EBS	RMS	Bailment	Deloitte	PL/SQL, UNIX	1		
INT318	Interface	Bailment ASN data from RMS to RIMS	Interface to send vendor's bailment ASN requests to RIMS as expected receipts	RMS	Warehousing and Distribution Management		RMS	RIMS	Bailment	Deloitte	PL/SQL	1		
INT319	Interface	Planned withdrawals from RMS to EBS	Send the planned bailment transfers for the next day to the portal	RMS	Warehousing and Distribution Management		RMS	EBS	Bailment	Deloitte	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT321	Interface	Invoices from Portal to RMS	Send entered invoices from Suppliers (EBS) to ReIM	RMS	Accounts Payable		EBS	RMS		Deloitte	PL/SQL, UNIX	1		
INT322	Interface	Bailment Penalties Calculator	This interface will calculate Penalties resulting from overages and shortages within the Bailment inventory and populate values in a staging	RMS	Warehousing and Distribution Management		RMS	RMS	Bailment	PLCB	PL/SQL	1		
INT323	Interface	Create Skeleton Employees	Create Skeleton Employees	POS Integration			IRIS	EBS		Deloitte	PL/SQL	1		PLCB HR Support
INT324	Interface	PLCB RMS to AR Interface	PLCB AR Interface which will interface Bailment Penalties and Supplier Claims from RMS to AR	RMS	Accounts Receivables		RMS	EBS	Bailment	Deloitte	PL/SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT325	Interface	EDI_ASN_UPLOAD	Interface to receive EDI ASNs from Suppliers.	RMS	Warehousing and Distribution Management	Amit Bordia	Supplier System	RMS		Deloitte	PL/SQL, UNIX	1		
INT326	Interface	EDI_INVOICE_REIM	Interface to receive EDI Invoices from Suppliers	RMS	Warehousing and Distribution Management	Amit Bordia	Supplier System	RMS		Deloitte	UNIX	1		
INT327	Interface	Spaceman-RMS Presentation Stock Interface	Update presentation stock in RMS based on Space Management system	RMS	Forecasting and Replenishment	Connor Sage	Spaceman	RMS		Deloitte	PL/SQL, UNIX	1		
INT328	Interface	E-commerce Inbound RTLOG File Transmission	Process to receive Sales transactions from Ecommerce	EBS	Order Management		EBS	EBS		Deloitte	BPEL	1		
INT329	Interface	Bulk activate RPM Price Changes and Promotions in SIM	Interface needed to create a script and activate the programs for Bulk Price processing in RPM and SIM	RPM & SIM	Pricing and Promotions Management	Carlo Rivera	RPM	SIM		Deloitte	PL/SQL, UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT330	Interface	Treasury Pay file	Instruct Treasury to make payment (replace INT092)	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury Upgrade	Deloitte	BPEL, PL/SQL	1		
INT331	Interface	Daily Warrant	File of payments processed by Treasury (replace INT091)	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury Upgrade	Deloitte	BPEL, PL/SQL	1		
INT332	Interface	Check file	Record of actual check numbers which have cleared	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury Upgrade	Deloitte	BPEL, PL/SQL	1		
INT333	Interface	Reject File	Payment requests rejected by Treasury	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury Upgrade	Deloitte		0		
INT334	Interface	Vendors to Treasury	Send current suppplier list to Treasury	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury Upgrade	Deloitte	BPEL	1		
INT335	Interface	ACH Rejects Interface	ACH Rejects Interface	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury Upgrade	Deloitte		0		
INT336	Interface	SAP to LCB GL Interface	SAP to LCB GL Interface	EBS	General Ledger	Joe Shoemaker	SAP	EBS	Treasury Upgrade	Deloitte		0		4/28/2014
INT337L	Interface	Order Orchestration		RMS		Vijay Iyer / Brian Coons	SOA		LDP	Deloitte	SOA			
INT338L	Interface	Create/Update/Cancel Order in Portal		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	PL/SQL			

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT339L	Interface	Customer Maintenance & Cache		EBS & RMS		Vijay Iyer / Brian Coons	EBS & RMS		LDP	Deloitte	PL/SQL			
INT340L	Interface	Item Cache		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	PL/SQL			
INT341L	Interface	EBS - RDW Aggregated Licensee Sales Data Interface		RMS		Vijay Iyer / Brian Coons	RMS		LDP	Deloitte	ProC/Unix			
INT342L	Interface	EBS - RDF Licensee Sales Data Interface		RMS		Vijay Iyer / Brian Coons	RMS		LDP	Deloitte	ProC/Unix			
INT343L	Interface	AR Pre-processor		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	PL/SQL			
INT344L	Interface	Debit Memo against Vendor for SPA for Deals		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	PL/SQL			
INT345L	Interface	Send Payment Requests		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	JAVA			
INT346L	Interface	COGS Adjustments from EBS to RMS		RMS		Vijay Iyer / Rebecca Kim			LDP	Deloitte	PL/SQL			2/25/2014

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT510	Interface	Gift Card Data	Read ISD gift card detail file and create interface records to cash management system using BAI2 file format	Cash Management	Sales and Cash Management					PLCB	Microfocus Cobol	1		
INT512	Interface	RMS Product Master to Legacy (Wave 3)		RMS	Product Data Management					PLCB	SQL	1		
INT513	Interface	Item-Supp-Country-Dim (Wave 3)		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT514	Interface	Item-Supp-Country		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT515	Interface	UDA-Item-LOV & UDA Values		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT516	Interface	Item-Supplier		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT517	Interface	Item-Loc		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT518	Interface	Loc-Traits-Matrix		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT519	Interface	Store & Store Format		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT520	Interface	Store		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT521	Interface	ADDR		Internet (SQL)	Product Data Management					PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT522	Interface	County Geocodes & Geocode Store		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT523	Interface	Item-Loc-Soh		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT525	Interface	Sups & Item Supplier		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT526	Interface	District & Store		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT527	Interface	Loc-Closed		Internet (SQL)	Product Data Management					PLCB	SQL	1		
INT539	Interface	Class		RMS	Product Data Management					PLCB	SQL	1		
INT540	Interface	Deps		RMS	Product Data Management					PLCB	SQL	1		
INT541	Interface	Subclass		RMS	Product Data Management					PLCB	SQL	1		
INT542	Interface	SUPS		RMS	Product Data Management					PLCB	SQL	1		
INT543	Interface	WH		RMS	Product Data Management					PLCB	SQL	1		
INT546	Interface	Domestic / Import POs for SAS System		RMS	Merchandise Procurement					PLCB	SQL	1		
INT547	Interface	Open Purchase Order Data to NABCA		RMS	Merchandise Procurement					PLCB	SQL	1		
INT549	Interface	Store Inventory Data to NABCA		RMS	Inventory Control					PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT550	Interface	SLO Sales to NABCA		RMS	Order Management					PLCB	SQL	1		
INT551	Interface	SCC Number for AG Auditors		RMS	Product Data Management					PLCB	SQL	1		
INT552	Interface	Inventory Transactions for AG Auditors		RMS	Inventory Control					PLCB	SQL, UNIX	1		
INT553	Interface	Store Open Days to NABCA	Store Open Days to NABCA	RMS				NABCA		PLCB	SQL	1		
INT554	Interface	Price List	Price List that is printed in Wine & Spirits Quarterly Magazine	RMS	Product Data Management		RMS			PLCB	PL/SQL, UNIX	1		
INT555	Interface	Item Data to Spaceman	Item Data interfaced to the Spaceman Shelf Management Tool	RMS	Product Data Management		RMS	Legacy		PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT556	Interface	Str Lic Smry	Produces summary records of Licensee invoice sales. The summary records will be FTP's to an agency server from which they data will be loaded into a MS SQL Server database table. This is an interim solution to the continuation of a legacy mainframe	RMS (ReSA)	Sales and Cash Management		RMS	MS SQL Server		PLCB	SQL	1		
INT557	Interface	Unallocate d Luxury Products	A daily script to determine any luxury merchandise , received in a warehouse, which has not benen completely allocated to	RMS	Product Data Management		RMS			PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT558	Interface	SIM SOH to Audit	A daily interface of all items and locations having stock on hand not = 0. File will be FTP'd to a foilder on the G: drive for access by the Auditors. Will be used for physical inventory counts at the	SIM	Store Operations Management		SIM	G:\\\lbsrv01\shared\Public\Audit\SINAUDIT\Sim_Store_Inv.txt.		PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT559	Interface	NABCA SPA FORECAST	Provide NABA with a data feed of approved SPAs (aka Vendor Allowance) with the start date, end date, supplier id, item id, amount of unit discount, the SPA price, forecast sales (in units) and number of units per case.	RMS			RMS	RMS		PLCB	SQL	1		
INT560	Interface	LCB Licensee-RDW Interface	Publish a data file from SQL Server Licensee Master File (LMR3) for inport into custom RDW customer table (XXLCB_LICENSEE_DM	RDW	Sales and Cash Management		SQL Server LMR3 Table	RDW		PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT561	Interface	Product Catalog RMS to eCommerce	Daily interface file to transfer item data to eCommerce	eCommerce	Product Data Management		RMS	eCommerce		Deloitte	PL/SQL	1		
INT563	Interface	Interface for "get"ting daily bank statements from FNB	Interface for "get"ting daily bank statements from First National Bank. Process will connect to FNB, get our daily statement and place it as an interface file into the Oracle FTP inbound	EBS	Sales and Cash Management		n/a	EBS		PLCB	UNIX	1		
INT566	Interface	Licensee Invoice Sales Detail to RDW	Create a data file of licensee sales invoice detail data for both regular and SLO sales. Data will be imported into a custom RDW sales table.	RDW	Business Intelligence		ReSA	RDW		PLCB		1		no source, it should be in BI area

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT567	Interface	Interface for getting daily bank statements from Citizens Bank.	Interface for getting daily bank statements from Citizens Bank. Process will connect to Citizens Bank, get our daily bank statement and place it as an interface file into the Oracle FTP inbound	EBS	Sales and Cash Management		n/a	EBS		PLCB	UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT568	Interface	Interface for getting daily bank statements from M & T Bank.	Interface for getting daily bank statements from M & T Bank. Process will connect to M & T Bank, get our daily bank statement and place it as an interface file into the Oracle FTP inbound	EBS	Sales and Cash Management			EBS		PLCB	UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT569	Interface	Interface for getting daily bank statements from Sovereign Bank.	Interface for getting daily bank statements from Sovereign Bank. Process will connect to Sovereign Bank, get our daily bank statement and place it as an interface file into the Oracle FTP inbound	EBS	Sales and Cash Management			EBS		PLCB	UNIX	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT570	Interface	Interface for getting daily bank statements from PNC Bank.	Interface for getting daily bank statements from PNC Bank. Process will connect to PNC Bank, get our daily bank statement and place it as an interface file into the Oracle FTP inbound	EBS	Sales and Cash Management			EBS		PLCB	UNIX	1		
INT571	Interface	ORCO Gift Card Data to Sql Server	Extracts Gift Card activity data and exports it to Sql Server database	POS	Sales and Cash Management		POS	SQL Server		PLCB	Java, PL/SQL	1		
INT576	Interface	Bailment ASN to NABCA	A data feed of all outstanding ASN shipments, the items and quantites in the shipment	RMS	Warehousing and Distribution Management	NABCA - Amy Grollman	RMS	external	Bailment	PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
INT577	Interface	Bailment Inventory Movement	Snapshot file of inventory, receipts, adjustments and draws for the preceeding day	RMS	Warehousing and Distribution Management	NABCA - Amy Grollman	RMS	external	Bailment	PLCB		0		no source
INT578	Interface	Purchase Order RMS to RDW	Process to transfer purchase order details to RDW from the source files in rms	RDW	Order Management	Mark Kleinsak	RMS	RDW		PLCB	PL/SQL	1		
INT579	Interface	Voided Sales to RDW	Voided sales to RDW	RDW	Store Operations Management	Mark Kleinsak	RMS	RDW		PLCB		0		no source
INT580	Interface	Licensee Info to State Police	A daily transmission of Licensee data to State Police	SQL Server	State Police	Rich Becker	SQL Server	FTP		PLCB	SQL	1		
P-INT001	Interface	POS Sales to NABCA	B176	RMS	Order Management			NABCA		PLCB	SQL	1		
P-INT002	Interface	POS Licenses Invoice Sales to NABCA	B181	RMS	Order Management			NABCA		PLCB	SQL	1		
P-INT003	Interface	Item Data to NABCA	B177	RMS	Product Data Management			NABCA		PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
P-INT004	Interface	Store Address Info to NABCA	B037	RMS	Store Operations Management			NABCA		PLCB	SQL	1		
P-INT006	Interface	Licensee Address Info (LMR3) to NABCA	B182	RMS	Order Management		SQL Server	NABCA		PLCB	SQL	1		
P-INT029	Interface	RMS-POS : Inventory (Catastrophic Failure)	Perpetual Inventory Down File (Catastrophic Hard Drive Failure) to POS	RMS	Inventory Control		RMS	POS	Wave II	Deloitte	PL/SQL, UNIX	1		
P-INT035	Interface	Over / Short Store Receipt Adjustments to RIMS	Over / Short Store Receipt Adjustments to RIMS (used to create a report that indicates locations in RIMS)	RMS	Warehousing and Distribution Management		RMS	RIMS		PLCB	SQL	1		
P-INT036	Interface	Warehouse Inventory to NABCA		RMS	Warehousing and Distribution Management					PLCB	SQL	1		
P-INT037	Interface	Warehouse Receipts to NABCA		RMS	Warehousing and Distribution Management					PLCB	SQL	1		
P-INT038	Interface	Warehouse Shipments to NABCA		RMS	Warehousing and Distribution Management					PLCB	SQL	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP001	Report	Check Printing		EBS	Accounts Payable				Wave II	Deloitte	BI pub	1		
REP002	Report	Utility Tracking Report		EBS	Accounts Payable				Wave II	Deloitte	RDF, BI pub	1		
REP004	Report	Payments to Treasury Summary and Detailed Report		EBS	Accounts Payable				Wave II	Deloitte	RDF	1		REP003 and REP004 are related
REP005	Report	Warrant File from Treasury Report		EBS	Accounts Payable				Wave II	Deloitte	RDF, BI pub	1		
REP007	Report	Estimated Rent Projection Report		EBS	Accounts Payable				Wave II	Deloitte	RDF	1		
REP010	Report	Move Order Pick Slip Report		RMS	Non-Merchandise Procurement				Wave II	Deloitte	RDF	1		
REP011	Report	Printed PO Report		RMS	Non-Merchandise Procurement				Wave II	Deloitte	BI pub	1		
REP012	Report	PO and Release Details Report		RMS	Non-Merchandise Procurement				Wave II	Deloitte	RDF, BI pub	1		
REP013	Report	Requisitions Board Approval Report		RMS	Non-Merchandise Procurement				Wave II	Deloitte	RDF, BI pub	1		
REP014	Report	Sole Sourced PO Report		RMS	Non-Merchandise Procurement				Wave II	Deloitte	RDF, BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP026	Report	Taxes Due		EBS	General Accounting				Wave II	Deloitte	PL/SQL	1		re-written for performance
REP027	Report	Funds Management Balances (Budget Execution role)		EBS	General Accounting				Wave II	Deloitte	RDF, BI pub	1		
REP028	Report	Open Commitments by Document Number - Current Fiscal Year (Budget Execution role)		EBS	General Accounting				Wave II	Deloitte	RDF	1		
REP030	Report	Claims & Journal & Claims for Warehouse & Inbound (Generated 1 period ahead)		EBS	Claims Management				Wave II	Deloitte	RDF, BI pub	1		
REP061	Report	Warehouse inventory transactions by code, quantity and cost		RMS	Inventory Control				Wave II	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP062	Report	Shipments received but not yet paid		EBS	Accounts Payable				Wave II	Deloitte	BI pub	1		
REP066	Report	Kane Warehouse Report		RMS	Warehousing and Distribution Management				Wave II	Deloitte	BI pub	1		
REP068	Report	D-2273 PO Summary from Load build		RMS	Warehousing and Distribution Management				Wave II	Deloitte	BI pub	1		
REP071	Report	D-3290 Load Report Details		RMS	Warehousing and Distribution Management				Wave II	Deloitte	BI pub	1		
REP076	Report	Print Purchase Orders	Print product purchase orders	RMS	Merchandise Procurement		RMS	n/a		Deloitte	RDF, BI pub	1		
REP078	Report	GORI Purchase Orders		RMS	Warehousing and Distribution Management				Wave II	Deloitte	BI pub	1		
REP080	Report	End of Day Variance Report		EBS	General Accounting				Wave II	Deloitte	Crystal	1		
REP081	Report	GORI Warehouse Receipts		RMS	Warehousing and Distribution Management				Wave II	Deloitte	BI pub	1		
REP086	Report	DCTO Shipments Receipts		RMS	Warehousing and Distribution Management				Wave II	Deloitte	BI pub	1		
REP087	Report	Permit Cost		RMS	General Accounting				Wave II	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP088	Report	Warehouse Claims and Adjustment Report		RMS	Claims Management				Wave II	Deloitte	Crystal	1		not sure why REP088B exists
REP089	Report	Inventory Claims Report		RMS	Claims Management				Wave II	Deloitte	BI pub	1		
REP090	Report	Inventory Differences report		RMS	Inventory Control				Wave II	Deloitte	BI pub	1		
REP091	Report	Shortage-Damage Transaction Report		RMS	Inventory Control				Wave II	Deloitte	BI pub	1		
REP092	Report	Vendor Statement of Deduction	Claims Journal Batch Report	RMS	Claims Management				Wave III	Deloitte	Crystal	1		CRM000044
REP093	Report	GORI Potential Claims Report		RMS	Claims Management				Wave II	Deloitte	BI pub	1		
REP094	Report	POS Miscellaneous transaction Report		RMS	Inventory Control				Wave II	Deloitte	BI pub	1		
REP095	Report	ELC and AP Accrual Reconciliation Report		EBS	Accounts Payable				Wave II	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP096	Report	Merchandise Transfers and Transfer Adjustments by Store and Department		RMS	Inventory Control				Wave II	Deloitte	Crystal	1		
REP098	Report	Arrival Schedule Detail Report		RMS	Store Operations Management				Wave II	Deloitte	BI pub	1		
REP101	Report	XXLCB PO To Treasury from RMS		EBS	Accounts Payable				Wave III	Deloitte	BI pub	1		
REP103	Report	Invoice Claims Report	Added per request from L Sieber on 4/16.	EBS	Claims Management				Wave II	Deloitte	BI pub	1		
REP104	Report	Commitments by Account	Added per request from L Sieber on 4/16.	EBS	General Accounting				Wave III	Deloitte	RDF, BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP105	Report	AP Expenses	Added per request from L Chikotas on 4/20. Refer to F125, F125 is a standard report, but has to be customized to make a statement that is presentable to mail to the customer.	EBS	Accounts Payable				Wave III	Deloitte	RDF, BI pub	1		
REP106	Report	Dunning Letters	Added per request from L Chikotas on 4/20. Refer to F127, F127 has to be customized to be able to print dunning/late notices to mail to the customers.	EBS	Accounts Receivables				Wave III	Deloitte	RDF, BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP107	Report	Customer Statement	Moved to Medium per mtg on 12/17 (LR, GC, LS). 4/14 - moved to High per GC. 4/22 - Reports dependent upon CR282/283 interfaces being	EBS	Accounts Receivables				Wave III	Deloitte	RDF, BI pub, Oracle forms	1		
REP108	Report	Inventory Reconciliation (RIMS-RMS)	Moved to Medium per mtg on 12/17 (LR, GC, LS). 4/14 - moved to High per GC. 4/22 - Reports dependent upon CR282/283 interfaces being	RMS	Inventory Control				Wave III	Deloitte	BI pub	1		
REP110	Report	Inventory Adjustments Report	Inventory Adjustments Report	RMS	Inventory Control		RMS		Wave III	Deloitte	Crystal	1		
REP112	Report	Daily Warehouse Receipts	4/6 (SV) - Added per issue 788.	RMS	Inventory Control				Wave III	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP113	Report	SOLF	Order Num, Customer Name, Pickup Location	RMS	Order Management				Wave III	Deloitte	Crystal	1		
REP118	Report	Warehouse Variance and Damage Report		RMS	Inventory Control				Wave III	Deloitte	BI pub	1		
REP125	Report	Proof Of Performance Report	Proof Of Performance Report to share the current status of the SPA promotions, associated purchasing and sales information	RPM	Pricing and Promotions Management				Wave IV	Deloitte	OAF	1		
REP126	Report	Board Approval Report for New Item Registration	This report will be generated from RMS to show the list of new items added in RMS for Boards approval	RMS	Product Data Management		RMS		Wave IV	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP127	Report	Board Approval Report for Cost Change	This report will be generated from RMS to show the list of new cost changes added in RMS which are pending Boards	RMS	Product Data Management		RMS		Wave IV	Deloitte	BI pub	1		
REP128	Report	Board Approval Report for New Price Changes in RPM	This report will be generated from RPM to show the list of new Price Changes added in RPM which is pending boards approval	RPM	Pricing and Promotions Management		RPM		Wave IV	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP132	Report	GL Stock Ledger Activity Report	EBS GL Stock Ledger Activty Report that summarizes Stock Ledger Activity for each location, department, and account. This report will be used for month-end reconciliation in combination with the Transaction Data History Report. CR 520	EBS	General Accounting		EBS	BI Publisher		Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP133	Report	Transaction Data History Report	RMS Tran Data History Report that summarizes Tran Data history for each location and department. This report will be used for month-end reconciliation in combination with the GL Stock Ledger Activity Report. CR	RMS	General Accounting		EBS	BI Publisher		Deloitte	BI pub	1		
REP134	Report	Allocation Memo Report	Internal report to track the receipt of imported merchandise, and whether any merchandise was recorded as	BI Publisher	Warehousing and Distribution Management		RMS		Wave IV	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP135	Report	Claims Adjustment Reversals	Report to identify store inventory adjustments that reverse an inventory adjustment that has triggered an automatic deduction from a supplier	RMS	General Accounting		RMS	BI Publisher		Deloitte	BI pub	1		
REP136	Report	Balance Sheet	Displays PLCB's Statement of Net Assets report for a specified fiscal year and scenario (i.e. forecast or actuals) availabe in Hyperion	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP137	Report	Balance Sheet Variance w/ Tolerance Exceptions	Displays the YTD variances between two selected scenarios for the specified month. Highlights variances that are greater than predefined	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		
REP138	Report	Income Statement (Enterprise)	This report will display PLCB's Comparative Operating Statement for a specified fiscal year and scenario	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		
REP139	Report	Income Statement (Entity Level)	This report will display PLCB's P-556 (Store P&L) for a specified fiscal year and scenario	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP140	Report	Income Statement Variance (Enterprise) w/ Tolderance Exceptions	Displays the PTD variances between two selected scenarios for a specified month. Highlights variances that are greater than predefined	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		
REP141	Report	Income Statement Variance (Entity) w/ Tolderance Exceptions	Displays the PTD variances between two selected scenarios for a specified month. Highlights variances that are greater than predefined	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP142	Report	Cash Flow	This report will display PLCB's Cash Flow Statement for a specifed fiscal year and scenario	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		
REP143	Report	Cash Flow Variance w/ Tolerance Exceptions	Displays the YTD variances between two selected scenarios for the specified month. Highlights variances that are greater than predefined	HYP	Financial Planning		Hyperion		Wave IV	Deloitte	Hyperion	0		
REP148	Report	xxlcb_invrecon_sim.rdf	This is an report to show inventory discrepancies between RMS and SIM. This is an approved change as part of the amendendment to CO19.	RMS & SIM	Store Operations Management		RMS & SIM	n/a	Wave IV	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP150	Report	Order Invoice Print Report	- Prints SLO/License/Retail Order details at the store printer - Logs all order prints during the day in a custom table for purge at night	Order Management	Order Management		Order Management	Printer	Wave IV	Deloitte	BPEL, BI Pub	1		
REP152	Report	Inventory Control Dashboard	There are in total 14 reports which will help the Inventory Control Supervisor in evaluating the RMS warehouse and store	RMS	Warehousing and Distribution Management		RMS	RMS		Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP158	Report	Bailment Fees Report	Report to identify fees or penalty to be charged to each supplier for overages or shortages of bailment items beyond tolerance	RMS	Warehousing and Distribution Management		RMS	n/a	Bailment	Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP162	Report	Store Order Modificatio n Summary Report	This report will assist Supply Chain and Store Operations with monitoring the net effect of store modification s to replenishme nt orders. These groups can use this report to investigate stores which perform large volumes of modification s	Store Orders	Forecasting and Replenishme nt		RMS			Deloitte	BI pub	1		CO27
REP163	Report	Daily Inventory Exceptions Report	This report will assist Supply Chain with investigating potential inventory issues which would affect Store Replenishm ent	Replenishm ent	Forecasting and Replenishme nt		RMS			Deloitte	BI pub	1		CO27

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP164	Report	Daily Replenishment Exceptions Report	This report will assist Supply Chain with investigating potential issues with system generated replenishment order quantities	Replenishment	Forecasting and Replenishment		RMS			Deloitte	BI pub	1		CO27
REP167	Report	AP-Treasury Reconciliation Report	AP-Treasury Reconciliation	EBS	Accounts Payable	Joshua Sells	EBS	report		Deloitte	RDF, BI Pub	1		
REP168	Report	GL-SAP Reconciliation Report	GL-SAP Reconciliation	EBS	General Accounting	Joshua Sells	EBS	report		Deloitte	RDF, BI Pub	1		
REP169	Report	New report to show Bailment inventory by suppliers.	New report to show Bailment inventory by suppliers.	Bailment	Warehousing and Distribution Management	Amit Bordia	RMS		Bailment	Deloitte	Crystal	1		4/26/2011
REP170	Report	Allocation Retry	Informs allocation team when an allocation is not fulfilled and retried/closed	Allocation / RMS	Forecasting and Replenishment	Scott Deakins (Deloitte)	RMS	RMS		Deloitte	BI pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP177	Report	Bailment Penalties Finance Report	Bailment Penalties Finance Report	EBS	Financial Planning	Joshua Sells	EBS	report	Bailment	Deloitte	BI pub	1		
REP178	Report	Vendor Buyback Report	This will be an excel report that will be used by Comptroller office to make suitable manual journal entries to charge the vendor for the inventory they are	RMS	Warehousing and Distribution Management	Pradeep Patil	RMS	RMS		Deloitte		0		no source, no documentation
REP179	Report	Errored Partial Case Consumption Report	This report lists all partial case consumptions that are currently marked as Errored, to avoid the consumptions to be included in purchase	RMS	Order Management	Gourav Banerjee	RMS			Deloitte	BI pub	1		note says its cancelled, not sure if this is correct.

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP180	Report	OBIEE Forecast Accuracy Report	Report to check and analyze forecast accuracy over time	RMS	Forecasting and Replenishment	Connor Sage	RDW	n/a		Deloitte	PL/SQL	1		
REP181	Report	ReSA-GL Reconciliation Report	ReSA-GL Reconciliation Report	RMS	General Accounting	Bhushan Kokje	RMS	RMS		Deloitte		0		no source, no documentation
REP182	Report	Claims Discrepancy Report	This BI report will be used to identify discrepancies for different warehouse and store reason codes for claims	RMS	SIM/RMS	Punit Gouthi	RMS	RMS	Production Support	Deloitte	BI pub			3/13/2014
REP183	Report	Warehouse Claims Discrepancy Report	This BI report will be used to identify discrepancies for different warehouse reason codes for claims	RMS	SIM/RMS	Punit Gouthi	RMS	RMS	Production Support	Deloitte	BI pub			6/2/2014
REP326	Report	Period Unit Sales Summary	Period Unit Sales Summary	POS Central Office	Store Operations Management		POS			PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP332	Report	Daily Negative Balance Items Report	Report to address problems with SIM inventory	SIM	Store Operations Management	Robert Sweigart	SIM			Deloitte	BI Pub	1		
REP333	Report	Payment Request / Address Change	Payment Request / Address Change	EBS	General Accounting	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	BI Pub	1		
REP334	Report	Tran Data Discrepancy Report	This report will identify discrepancies between Tran data, If_tran_data and Tran_Data_ history tables in RMS	RMS	OITS	Pradeep Patil	RMS	RMS		Deloitte	BI Pub	1		
REP335	Report	XXLCB_C ONS_TRA N_DATA_ REP	This report will compare if all consumptions on a given day have made it to Tran_data table in RMS. If discrepancy is found, then the report will be sent out to certain email Id	RMS	Warehouse Operations	Pradeep Patil	RMS	RMS		Deloitte	BI Pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP336	Report	RMS/RPM Pricing Discrepancy Report	This report will spit out the items in which the RMS price/promo is different from RPM	RMS & RPM	OITS	Carlo Rivera	RMS & RPM	RMS/RPM		Deloitte	BI Pub	1		
REP337	Report	RPM/POS Pricing Discrepancy Report	This report will spit out the item/locations in which the POS price/promo is different from RPM	RPM/POS	RPM/POS	Carlo Rivera	RPS/POS	RPM/POS		Deloitte	BI Pub	1		
REP338	Report	SIM / RMS Discrepancy Report	This report will be used to identify discrepancies for different sets of RIB family messages	RMS & SIM	SIM/RMS	Punit Gouthi (Deloitte)	RMS & SIM	BI Publisher		Deloitte	BI Pub	1		
REP339	Report	SIM / RMS Shipment Discrepancy Report	This report will be used to identify discrepancies in shipment receipt quantities between RMS and SIM	RMS & SIM	SIM/RMS	Punit Gouthi (Deloitte)	SIM	RMS		Deloitte	BI Pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP340	Report	SIM/RPM Pricing Discrepancy Report	This report will spit out the items in which the SIM price/promo is different from RPM	RPM & SIM	RPM/RMS	Carlo Rivera	RPM	SIM		Deloitte	BI Pub	1		11/6/2013
REP341L	Report	Licensee Genral Notification (Account Change /Payment Issue)		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	BI Pub			
REP342L	Report	Licensee Order Status Notificatio n		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	BI Pub			
REP343L	Report	Supply Chain Item/Order Exception Report		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	BI Pub			
REP344L	Report	Supply Chain - Pending Delivery Updates Report		EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	BI Pub			
REP345L	Report	Warehous e Delivery Adjustmen ts Discrepan cy Report		RMS		Vijay Iyer / Brian Coons	RMS		LDP	Deloitte	BI Pub			

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP346L	Report	Account Details Report		BI publisher		Rebecca Kim			LDP	Deloitte	BI Pub			2/11/2014
REP347	Report	ACH Returns and NOC Report	ACH Returns and NOC (Notifications of Change) Report	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	BI Pub			4/28/2014
REP348	Report	LCB AP Payment Request to Treasury Report	Old REP003_004. LCB AP Payment Request to Treasury Report	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	RDF			5/15/2014
REP349	Report	Daily Warrant Detailed Report	Old REP005. Daily Warrant Detailed Report	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	RDF, BI Pub			5/15/2014
REP350	Report	LCB Treasury Request - Funds & Appropriatoins Report	Old REP516. LCB Treasury Request - Funds & Appropriatoins Report	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	Crystal			5/15/2014
REP351	Report	New AP Treasury Reconciliation Report for Treasury Project	New AP Treasury Reconcilation Report for Treasury Project	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	BI Pub			5/20/2014

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP352	Report	New AP Treasury Reconcilation Exception Report for Treasury Project	New AP Treasury Reconciliation Exception Report for Treasury Project	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	BI Pub			5/20/2014
REP353	Report	P167 to REP516 Comparison Report	This report will be used to reconcile the sent amounts in REP167 (AP-Treasury Reconciliation Report) and REP516 (LCB Treasury Request Funds and Appropriations).	EBS	Accounts Payable	Joe Shoemaker	EBS	EBS	Treasury upgrade	Deloitte	RDF			6/18/2014
REP500	Report	Distribution Report of Over/Shorts	The report will only show over/short adjustment made by the store on the delivery date. "After-the-fact" 580 adjustments will not be	RMS	Warehousing and Distribution Management		RMS	RMS		PLCB	BI Pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP503	~~Report~~	~~Shipment to Store (Case Summary)~~		~~RMS~~	~~Warehousing and Distribution Management~~		~~RMS~~	~~RMS~~		~~PLCB~~	~~n/a~~	~~0~~	~~Yes~~	
REP507	Report	RDW Data Validation Report	Market Research needs a means to verify and validate that system data interface transactions have occurred between ReSA and Data Warehouse and to also determine the degree of impact individual data load variances have on the statistical validity of sales fact data in the organizational hierarchy and reta il calendar	RMS & RDW	Financial Planning		RMS & RDW	RMS		PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP509	Report	Unit and Amount Descrepancy Report	Rewrite of Stock Count ReCount report to print only those items having discrepant inventory counts. Items to be grouped by Dept / Class	SIM	Store Operations Management		SIM	SIM		PLCB	BI Pub	1		xref CUS501
REP510	Report	Allocation Distribution Report	This report will be a listing of all distribution allocations for the allocations entered. The report should list the allocation number, item number and store	RMS	Product Data Management		RMS	RMS		PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP512	Report	Store Replenishment Report	When replenishment runs for each store, the store will receive email notification of what items were replenished and at what levels regardless of warehouse stock on hand. The stores will also see what was ordered based on stock on hand, presentation stocks, source warehouse, and order	RMS	Store Operations Management		RMS	email	Wave IV	PLCB	BI Pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP513	Report	Replenishment Activation/ Deactivation by Store	Report of processing results from two extensions which will activate (EXT507) or deactivate (EXT506) items from automatic replenishment in stores. REF PSI #	Replenishment	Forecasting and Replenishment		RMS	RMS / Stores		PLCB	BI Pub	1		
REP514	Report	GL Account Balances	Display report of all General Ledger Accounts and their balances BI Publisher	General Ledger	General Accounting		EBS	Printer		PLCB	BI Pub	1		
REP516	Report	LCB Treasury Request Funds and Appropriations	Report of daily funds and appropriations associated with payment requests to Treasury	EBS	Accounts Payable		EBS	n/a		PLCB	BI Pub	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP528	Report	Weekly Forecast Performance Alert Report	Report of items in RDF which are performing outside of established parameters	RMS	Forecasting and Replenishment		RMS	n/a		PLCB	BI Pub	1		
REP531	Report	13-Week / SKU Projection	A report by warehouse and item within warehouse which projects inventory levels, demand and weeks of supply for the next 13	RMS & RDW	Inventory Control		RMS & RDW	Online Reports		PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP532	Report	Warehouse Fill Rate	A weekly report detailing by warehouse the quantity (in eaches) ordered by stores and the quantity (in eaches) shipped by the warehouse in response to the orders. These figures will be further broken down by the velocity codes of the items ordered. Philadelphia Velocity A XX% XXX,XXX XXX,XXX	RMS	Warehousing and Distribution Management		RMS	Online Reports		PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP533	Report	Roll Forward Reconciliation Report	Inventory Roll Forward Reconciliation Report	EBS & RMS	General Accounting	Rucha Athavale	EBS & RMS	n/a		PLCB	Crystal	1		
REP535	Report	Snapshot Reconciliation Report	Create GL Reconciliation report to be used by Comptrollers to see details of the daily transactions for when balances do not hit between RMS and	EBS & RMS	Warehousing and Distribution Management	Dave Fischer	RMS & EBS	n/a		PLCB	OpenXML	1		
REP536	Report	AP _ Unresolved Invoice Lines Report	Report to identify invoices in ReIM that are in an Unresolved match Status	Accounts Payable	Accounts Payable	Joe Shoemaker	ReIM	n/a		PLCB	Crystal	1		
REP537	Report	Monthly Snapshot Reconciliation Report	Monthly Snapshot Reconciliation Report	RMS / GL Reconciliation	General Accounting	Joseph Lee	RMS & EBS	n/a		PLCB	OpenXML	1		

Object ID	Object Type	Object Name	Description	Application RMS	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP539	Report	Missing Upcharge Report	The PDF report that will show a missing upcharges. It will be generated on a weekly basis and can be run ad hoc. The report will generate three sections: Stores with missing upcharges, PLCB codes with missing upcharges, and SCC codes with missing upcharges. It will display the store ` item number and description.		General Accounting	John Donoughe	RMS	EBS		PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP541	Report	Unfulfilled RMS Purchase Orders	Report of Purchase Orders which are past their due date and unfulfilled in whole or in part	RMS	Order Management	Amy Wasko	RMS	n/a		PLCB	Crystal	1		note says its canceled, but probably not true
REP542	Report	Daily report of coupon redemption	A Daily report to be generated in batch mode and placed in Online reports. It will contain information on all coupons redeemed "in total"	EBS	Pricing and Promotions Management	Missy Wydra	EBS	Online Reports		PLCB	Crystal	1		
REP543	Report	Ad Hoc view of redeemed coupons	Allow user to enter a date range, PLCB item and (optional) store then display all coupon redemption information fulfilling the selection criteria	EBS	Pricing and Promotions Management	Missy Wydra	EBS	Online Reports - ad hoc		PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP544	Report	Daily Inventory Planning Report	Daily Inventory Planning Report	RMS	Forecasting and Replenishment	Doug Hitz	RMS	Online Reports		PLCB	Crystal	1		
REP545	Report	Daily Cash Deposits	ReSA Daily cash Deposits	RMS	Sales and Cash Management	Arlene Burno	RMS	n/a		PLCB	Crystal	1		
REP546	Report	NON-ERP report wine club subscription history	non-ERP Wine Club Membership history by month for each tier for the past 2 years	eCommerce	Product Data Management	Dale Nelson	SQL Server	Online Reports		PLCB	OpenXML	1		
REP547	Report	Outstanding store to store transfers	Store-to-Store transfers over 30 days old	SIM	Store Operations Management	Bob Vogel	SIM	Online Reports		PLCB	BI Pub	1		was OpenXML
REP548	Report	Credit/Debit Card Detail Report	Determine the credit/debit card totals by store and each type of credit/debit card tender from an exchange for products and services provided by store operations..	ReSA	Sales and Cash Management	Arlene Burno	RMS	Online Reports		PLCB		0		no source, no documentation

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP549	Report	Invoices Created In EBS Report	The purpose of this report is to ensure the consumption and bailment invoices are being posted to EBS when the vendor creates purchase orders in the Vendor Collaborative Portal	ReIM & EBS		Arlene Burno	ReIM & EBS	Online Reports	Bailment	PLCB	BI Pub	1		to be used by OITS EBS Support
REP550	Report	Invoices Imported But Not Created In EBS Report	The purpose of this report is to ensure the consumption and bailment invoices are being transmitted to the REIM/EBS interface when the vendor creates purchase orders in the Vendor Collaborative Portal	ReIM & EBS		Arlene Burno	ReIM & EBS	Online Reports	Bailment	PLCB	BI Pub	1		to be used by OITS EBS Support

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP551	Report	Invoices Yet to Import to EBS Report	The purpose of this report is to ensure the consumption and bailment invoices have posted to REIM and have processed through the matching logic after the purchase orders are created in the Vendor Collaborative Portal	ReIM & EBS		Arlene Burno	ReIM & EBS	Online Reports	Bailment	PLCB	BI Pub	1		to be used by OITS EBS Support
REP552	Report	Stock Hold Inventory adjustments	Stock hold adjustment report	SIM	Store Operations Management	Bob Vogel	SIM	Online Reports		PLCB	Crystal	1		
REP553	Report	Roll up 13-Week Report	13-Week Report –Aggregated Version	RMS	Warehousing and Distribution Management	Samantha North	RMS	Online Reports		PLCB	Crystal	1		
REP554	Report	All SLO Items with freight and details	A weekly coma separated value file of all SLO items, their cost and retail and freight	RMS, EBS, RDW	Product Data Management	Larz Kegerreis	RMS, EBS, RDW	Online Reports		PLCB	OpenXML	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP555	Report	Distribution Center Inventory Adjustments	Summary and detailed report listing all inventory adjustments made at all warehouses (Distribuion Centers)	RMS	Warehousing and Distribution Management	Samantha North	RMS	Online Reports		PLCB	Crystal	1		
REP556	Report	Credit Card Reconciliation Report	Report to reconcile credit and debit card transactions with external bank statements	RDW	Cash and Sales Management	Rucha Athavale	RDW	G: drive		PLCB	OpenXML	1		
REP557	Report	Unallocated Merchandise	A weekly repoort to determine any merchandise, received in a warehouse, which has not been completely allocated to	RMS	Warehousing and Distribution Management	Robert Ge	RMS	Online Reports		PLCB	PL/SQL	1		
REP558	Report	Consulting Contracts	Annual Report of Consulting contracts and costs - 3 fiscal years	RMS	Procurement	Rich Becker	RMS	Online Reports		PLCB	Crystal	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP560	Report	Investigations Requested	Licensing investigations by month	Licensing	Admin Applications & Imaging	Donna Feath	Licensing	Online Reports		PLCB				
REP561	Report	Investigations Turnaround Time	Licensing investigations turnaround time by month	Licensing	Admin Applications & Imaging	Donna Feath	Licensing	Online Reports		PLCB				
REP562	Report	Investigations Received/ Reviewed/ Dispositioned	Licensing investigations processed by month	Licensing	Admin Applications & Imaging	Donna Feath	Licensing	Online Reports		PLCB				
REP563	Report	Store Sale Sign Order Report	Sale signs by store and promotional period	Store Operations	Store Operations Management	Donna Feath	non-ERP	Online Reports		PLCB				
REP564	Report	Store Sale Sign Order Completion Report	Sale signs ordered by region, district(optional) and stores for a promotional period	Store Operations	Store Operations Management	Donna Feath	non-ERP	Online Reports		PLCB				
REP565	Report	Daily SIM to RMS Inventory Discrepancy Report	Daily SIM to RMS Inventory Discrepancy Report	RMS	Store Operations Management	Steve Reider	SIM & RMS			PLCB	BI Pub			4/29/2014

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
REP570	Report	RMS-SIM Stock-On-Hand Inventory Discrepancy Report & Non-Sellable Discrepancy Report	Report Discrepancies between RMS and SIM Stock-on-Hand. Also reports Non-Sellable Discrepancies between RMS and SIM	RMS		Samantha North		Online Reports		PLCB	Excel / BI Publisher 11g			Companion report to RPT148
REP571	Report	Discontinued Merchandise Report	Identifies items that are no longer going to be carried by the Board	RMS	Product Data Management	Deidre Costello	RMS	Online Reports		PLCB				In development
REP572	Report	Unallocated Permitted Purchase Order Lines	Gets unallocated Permitted Purchase Order Lines	RMS	Product Management Luxury Division	Derek Cohenour	RMS	Online Reports		PLCB	Crystal Reports			
WF003	Workflow	OM-Sales Order : Workflow	All store order activity must be tracked according to status within a workflow	RMS & ARI	Order Management		OM	Sales Order	Wave III	Deloitte	Workflow	1		
WF014	Workflow	Requisition Account Generator	Requisition Account generator needs to be changed for Charge and Budget Accounts	PO	Non-Merchandise Procurement				Wave II	Deloitte	Workflow	1		

Object ID	Object Type	Object Name	Description	Application	Functional Team	Requested By	Source	Destination	Wave / Project	PLCB / Deloitte	Coding Language(s)	CVS / TFS	Object Cancelled	Comments
WF015	Workflow	Purchase Order Account Generator	PO Account generator needs to be changed for Charge and Budget Accounts	PO	Non-Merchandise Procurement				Wave II	Deloitte	Workflow	1		see WKF015
WF018	Workflow	Requisition Approval Workflow	Requisition Approval workflow rules need to be implemented	PO	Non-Merchandise Procurement				Wave II	Deloitte	Workflow	1		wee WKF018
WF019	Workflow	Purchase Order Approval Workflow	PO Approval workflow rules need to be implemented	PO	Non-Merchandise Procurement				Wave II	Deloitte	Workflow	1		
WF022L	Workflow	Order Workflow	Workflow	EBS		Vijay Iyer / Brian Coons	EBS		LDP	Deloitte	Workflow			

APPENDIX EE
DEFECT TRACKER

IBMS Test Defects - New Item

Edit

Save | Cancel | Paste | Cut | Copy | Attach File | Spelling

Commit | Clipboard | Actions | Spelling

Field	Value
Title *	
Test Case ID *	
Test Phase *	06-CUTOVER
Module or System *	
Severity *	
Defect Status *	00-NEW
Environment *	04-PRD05
Detected By *	
Assigned To	
45 - Tester	

FOR UAT ONLY

Field	Value
Due Date	
Priority	

Defect Details *

A A | B I U | ≡ ≡ ≡ | ≣ ≣ ≣ ≣ | A ⬚ ¶ ¶

Steps to Reproduce *

A A | B I U | ≡ ≡ ≡ | ≣ ≣ ≣ ≣ | A ⬚ ¶ ¶

Recomended Action

A A | B I U | ≡ ≡ ≡ | ≣ ≣ ≣ ≣ | A ⬚ ¶ ¶

APPENDIX FF
RISK and ISSUE TRACKER

2014 LDP Issue/Risk Log - New Item

Edit

Save | Cancel | Paste | Cut | Copy | Attach File | Spelling

Commit | Clipboard | Actions | Spelling

Issue / Risk *	[▼]
Status *	01-New ▼
Priority *	[▼]
Area *	[▼]
Identified On *	8/8/2014
Title *	
Assigned To	
Due Date	
Description *	
Impact	

FOR RISKS ONLY - Please specify the potential impact to the project of this risk

Sample Risk Tracker Data Entry Screen

Title *	
Assigned To	
Status *	
Impact *	
Description	

Category *	
Related Risks	2 - Appworx 8 license 3 - Integration/ Regr 4 - Data loading sche 5 - Appworx installati 6 - Potential outsourc 7 - Other projects rur 8 - Treasury impleme 9 - Core IT Vacancies 10 - KT sessions canr 11 - Complete Updat Add > < Remove
Comments	
Potential Impact Date	
Response	
Project Impact *	
Source of Risk	
Assigned Team	
Activity ID	(None)

APPENDIX GG

PLCB AAR TEMPLATE

PLCB AAR Template

Insert Project Activity Name
Project Lessons Learned

Lessons learned purpose and objectives

Throughout each project life cycle, lessons are learned and opportunities for improvement are discovered. As part of a continuous improvement process, documenting lessons learned helps the project team discover the root causes of problems that occurred and avoid those problems in later project stages (or future projects) by adopting the lessons learned.

The objective of this after action report is gathering all relevant information for better planning of later project stages and future projects, improving implementation of new projects, and preventing or minimizing risks for future projects.

Lessons learned – Inputs

- What happened? How did it happen? Please note the detailed steps, in sequence, with a time line. Please add references or items (like emails) to this document that will further explain these steps or provide the reviewer with material information to understand the process being described. This is the primary input into the lessons learned process.

Step #	Step	Date/Time (approx.)	Comments

Lessons learned – Analysis

- What worked well—or didn't work well—either for this project or for the project team?
- What needs to be done over or differently?
- What surprises did the team have to deal with?
- What project circumstances were not anticipated?
- Were the project goals attained? If not, what changes need to be made to meet goals in the future?

Use the list generated as input to the analysis and highlight steps that exceeded expectations or did not meet expectations.

Step #	Step	Date/Time (approx.)	Comments

Lessons learned – Successes

Identify which steps went well and exceeded expectations e.g. The turnaround time expected for business analysis review was two business days. The analyst turned the specifications around in half a day.

Steps	Factors That Supported Success	Comments

Lessons learned – Areas of improvement

Identify which areas can be further improved upon e.g. A third party provider was given detailed instructions on which data file to upload and uploaded the wrong file instead. **NOTE: PLCB will assign responsibility for each area of improvement.**

Assignee	Steps	Factors That Need to be Improved Upon	Comments

Lessons learned – Action Items

Note the action items from both successes and areas of improvement in the table below. These are the tangible result of the lessons learned process and should be further tracked elsewhere to ensure completion and successful incorporation into everyday practices.

Action Item #	Item Description	Due Date

Lessons learned – Change Log

Version	Date	Author	Change Description

Lessons learned – Review Log

Version	Date	Reviewer	Notes

APPENDIX HH

PROJECT DECISION
CHANGE TRACKER REPORT

Impact #	Business Process	Current State	What's Changing	Go Live Action Plan
Number each change	Name of impacted process	Describe the current process that will change as a result of the project	Describe the change that will occur, whether to people, processes or both	Describe what needs to occur as a result of the change, i.e. new role, training, communication, change management activities, etc.
1				
2				
3				

APPENDIX KK

GO LIVE READINESS ASSESSMENT TEMPLATE

GO LIVE READINESS ASSESSMENT

Pennsylvania Liquor Control Board Upgrade

Author:

Creation Date:

Last Updated:

Document Ref:

Version:

Approvals (document scope and content approval only):

(PLCB Project Manager) _____

(Consulting Project Manager) _____

Chief Information Officer _____

COE Business Operations Lead _____

COE Infrastructure Lead _____

(PLCB Change Management, Training, and Reporting Lead) _____

Document Control

Change Record

Date	Author	Version	Change Reference
		0.1	
		1.0	
		1.1	
		1.2	
		1.3	

Reviewers

Name	Position

Contents

Deliverable Purpose

Completion of a Go Live Readiness Assessment is a key decision point prior to implementing the final cutover steps that will place the new business processes and technical systems of XXX into production use. Go Live Readiness Assessment ensures that a thorough and thoughtful process is followed before making the decision to go live.

If the results of the Go Live Readiness Assessment are favorable, then PLCB will take the decision to go live with the new processes and systems. If there are significant issues identified through the readiness assessment that might impact the success of the implementation then go live will be postponed until those issues have been resolved.

Go Live Readiness is assessed across the major project activity threads, as follows:

- Project Management
- Business Operations
- Development (including Data Conversion)
- Information Technology (including Security)
- Change Management and Training

Go Live Readiness Assessment will be reviewed several times in the weeks leading to go live. Final readiness assessment and sign off by PLCB will be completed prior to the initiation of final cutover activities on the Go Live weekend.

Steering Committee (Business Process Owner) Approval for Go Live

In my role as a Business Process Owner for Project Spirit I have reviewed the go live readiness criteria contained in this document. I understand the status of all go live readiness criteria as well as any issues or exceptions to the readiness criteria identified by the PLCB project team leads. Based upon this understanding I provide my approval for the project team to proceed with Go Live and enable the new systems and business processes for production use in PLCB's business operations.

Chief Executive Officer   _____

Director of Marketing and
Merchandising   _____

Director of Administration   _____

PLCB Comptroller   _____

Chief Information Officer   _____

Director of Store Operations   _____

Director of Supply Chain   _____

      _____

Project Management Assessment

Readiness Criteria	Date Assessed	Status	Status Comment
			Issues or Exceptions Noted
Project Workplan has been reviewed and all tasks up to assessment date are complete or on schedule			
Cutover Strategy has been prepared and reviewed by project leadership			
Cutover Plan has been prepared and reviewed by project leadership			
Project Issue Log has been reviewed and all issues that are critical to go live have been closed			
Cutover Plan steps have been completed up to assessment date, no critical steps are behind schedule			
Immediate Post Go-Live support procedures are established, required support resources are in place (including Help Desk, contact lists, resource schedules) and are ready to assume production support responsibilities			
Change Control Log has been reviewed and all changes applied to User Acceptance Test environments have also been confirmed applied to Production environments			
Production Change Control procedures are in place and team is familiar with the procedures			
Business Process Owners have reviewed Go Live Readiness Assessment with project team leads, are aware of any issues or exceptions, and are prepared to proceed with go live.			
Key go live risks have been identified and a contingency plan or fallback strategy has been documented and reviewed.			

✔	On Track for Go Live
◆	Emerging Issue/Behind Schedule
✖	Critical Issue – Requires Correction
…	Too Early to Assess

Project Management Approval for Go Live (with Issues and Exceptions noted above):

PLCB Project Manager _____

PLCB Business Operations
Division) _____

PLCB Applications Development
Division _____

PLCB Infrastructure and Network
Support Division _____

Appendix II

Process and Package Assessment

Readiness Criteria	Date Assessed	Status	Status Comment
			Issues or Exceptions Noted
Design Documents are revised up to date, signed off, and stored in a central location for reference (Process Narratives, MD50 / MD60, MD70, RICEW Inventory, etc.)			
All Integration Test scripts are completed and signed off by team members. QA review of completed scripts has been conducted by PLCB and contractor testing leads and scripts are signed off.			
All User Acceptance Test scripts are completed and signed off by team members. QA review of completed scripts has been conducted by PLCB and consultant testing leads and scripts are signed off.			
Defect Log: Critical Defects from Integration Testing and User Acceptance Testing are closed. High Defects have a written short-term solution.			
Configuration: BR100 configuration documents are up to date in project reference location. All production configuration settings have been entered and double-checked against BR100 documents.			
All custom Report programs required for go live have been completed and output generated and reviewed in UAT environment by client personnel.			
Month End closing procedures have been documented and tested			

✔	On Track for Go Live
◆	Emerging Issue/Behind Schedule
✘	Critical Issue – Requires Correction
…	Too Early to Assess

Appendix II

Process and Package Approval for Go Live (with Issues and Exceptions noted above):

PLCB Project Manager   _____

PLCB Business Operations
Division)   _____

PLCB Applications Development
Division   _____

PLCB Infrastructure and Network
Support Division   _____

Appendix II

Development Assessment (Including Data Conversion)

Readiness Criteria	Date Assessed	Status	Status Comment
			Issues or Exceptions Noted
Technical Specification Documents are revised up to date and stored in a central location for reference (MD70 Technical Specifications, MD120 Migration Documents)			
All final RICEW objects have been migrated to the production environment. Correct program versions have been double-checked and verified for all objects.			
All Data Conversion programs have been run successfully in UAT.			
Data Conversion test scripts for all data conversion programs have been executed by PLCB team members in UAT and signed off.			
Data Conversion validation documents for all conversions completed in UAT have been reviewed by PLCB team members and signed off.			
All legacy data extracts required for go live are reviewed and validated prior to execution of data conversion programs. Evaluate currency of data, completeness, and that data meets design specifications.			
Data Conversion programs scheduled up to the assessment date have been run successfully in Production.			
Data Conversion test scripts (inspection steps only) for all completed data conversions have been executed by client team members in Production and signed off.			
Data Conversion validation documents for all conversions completed in Production have been reviewed by client team members and signed off.			
Physical inventory counts have been completed for warehouses and stores and the updated inventory counts will be reflected in data used for go live. Inventory counts are accurate.			

✓	On Track for Go Live
◆	Emerging Issue/Behind Schedule
✖	Critical Issue – Requires Correction
…	Too Early to Assess

Approval for Go Live (with Issues and Exceptions noted above):

PLCB Project Manager

_____

PLCB Business Operations
Division)

_____

PLCB Applications Development
Division

_____

PLCB Infrastructure and Network
Support Division

_____

Appendix II

Information Technology (Including Security) Assessment

Readiness Criteria	Date Assessed	Status	Status Comment
			Issues or Exceptions Noted
Production server hardware build is complete.			
Performance testing to simulate production transaction loads has been completed with acceptable results.			
Local and Wide Area Networks have been assessed for performance capacity and reliability and will meet the service level requirements of the new systems and processes.			
User workstations are updated as required to support use of the new software.			
Build of Production software instances is complete including application of all patches and upgrades from patch log.			
Connectivity among Production systems and with external systems (including external agencies) has been established and verified (middleware, firewalls, FTP servers, VPN).			
Security roles/responsibilities matrix is updated in and has been reviewed and approved by the CISO.			
Roles and responsibilities have been established in Production instances and verified against the roles/responsibilities matrix.			
User IDs have been set up in Production instance with appropriate role/responsibility assignments. Role/responsibility assignments are verified against master list. Confirm that users have completed training before providing authorization to use system.			
Backup systems are prepared and in use for Production, backups have been verified for usability.			
Production disaster recovery systems are prepared and ready for use and have been tested for proper operation.			
Batch program schedules are complete and tested, ready to run in production			

Readiness Criteria	Date Assessed	Status	Status Comment
			Issues or Exceptions Noted
mode (Appworx, EBS concurrent manager, Crystal reports, etc.).			
Batch program "runbook" is prepared and available for use as backup to automated batch processing.			

✔	On Track for Go Live
◆	Emerging Issue/Behind Schedule
✖	Critical Issue – Requires Correction
…	Too Early to Assess

Approval for Go Live (with Issues and Exceptions noted above):

PLCB Application Development Lead

_____

PLCB Infrastructure Manager

_____

 PLCB Chief Information Security Officer

_____

Change Management and Training

Readiness Criteria	Date Assessed	Status	Status Comment
			Issues or Exceptions Noted
Training materials have been developed and signed off by personnel.			
Communication Plan activities have been completed up to assessment date or are on schedule to complete as planned.			
Training Plan activities have been completed up to assessment date or are on schedule to complete on time. This includes instructor-led training, on-line training, and formal knowledge transfer planned as end user training.			•
Training evaluation and feedback indicates that training is effective and meets expectations.			
New user documentation has been distributed to support use of the new business processes and systems.			
Policy and procedure documents are updated to reflect any changes required as a result of the new systems and processes.			
Project Team Knowledge Transfer Plans have been updated and are complete as planned			•

✔	On Track for Go Live
◆	Emerging Issue/Behind Schedule
✖	Critical Issue – Requires Correction
…	Too Early to Assess

Approval for Go Live (with Issues and Exceptions noted above):

PLCB Change Management and Training Lead

Open and Closed Issues for this Deliverable

Open Issues

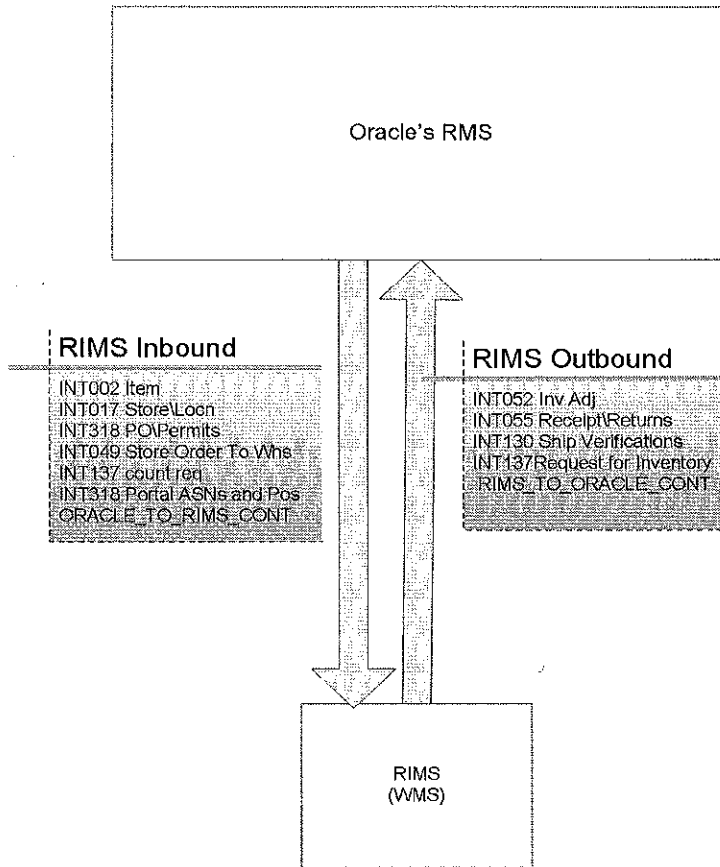| ID	Issue	Resolution	Responsibility	Target Date	Impact Date

Closed Issues

ID	Issue	Resolution	Responsibility	Target Date	Impact Date

APPENDIX LL

RIMS INTERFACE DRAWING

Oracle's RMS

RIMS Inbound
INT002 Item
INT017 Store\Locn
INT318 PO\Permits
INT049 Store Order To Whs
INT137 count req
INT318 Portal ASNs and Pos
ORACLE_TO_RIMS_CONT

RIMS Outbound
INT052 Inv Adj
INT055 Receipt\Returns
INT130 Ship Verifications
INT137Request for Inventory
RIMS_TO_ORACLE_CONT

RIMS
(WMS)

APPENDIX KK

RIMS INTERFACE DESCRIPTIONS

Warehouse Management System Interface Descriptions

A detailed description and layouts for each of the interfaces will be provided as needed

N-1 Item Interface

INT002 - The Oracle Retail Merchandising System (RMS) will provide the WMS System with host maintenance files containing new or edited item details for all stocked items, both regular and luxury. These files will be flat file layouts of predetermined fields and lengths. An Appworx job will be scheduled to transfer the Item Description files from RMS to the target RIMS server using FTP.

N-2 Store Interface

INT017 - The Oracle Retail Merchandising System (RMS) will provide the WMS a daily incremental customer description file containing new or edited store and warehouse details from RMS. It will also provide a weekly file containing a complete listing of all store and warehouse information. An Appworx job will be scheduled to transfer the Customer Description file from RMS to the RIMS server using FTP. Incremental files will be sent daily, and a complete file containing all stores and warehouses will be sent once a week.

N-3 ASN and PO Interface

INT318 - ASNs are entered in the Vendor Portal and are required to be sent to the WMS for receiving shipments. In addition, regular merchandise PO Permit created in RMS will also be required by the WMS to schedule appointments and receive the merchandise against them. This interface consists of:

- Detailed ASN data flow from RMS to RIMS
- Detailed PO Permit data flow from RMS to RIMS
- ASN and PO data definitions and mapping to RIMS expected receipt file.

N-4 Order Interface

INT049 - Used to export information related to transfers generated within RMS to transfer merchandise from a PLCB warehouse to another PLCB location to (store or warehouse). This interface will also include the request from RMS to RIMS for return to vendor (RTV) transactions for returning the bailment items requested by the vendor.

This interface will be used to publish the transfer information daily (and as needed) from the Oracle RMS system into the RIMS system.

The interface will use the following components:

- Output from the Oracle RMS System
- Oracle Retail Integration Bus (RIB)
- File extract program to convert messages from RIB e-ways into ascii file format
- File transfer protocol into RIMS server
- Batch load into the RIMS system

N-5 Count Request Interface

INT137 - A stock count is a comparison of an inventory snapshot at a point in time to an actual inventory count received from a location. This focuses on the programs needed to set up and process stock count data. Interface processes both ways – the request and the generation of the snapshot files for comparison between RMS and the WMS system.

N-6 Inventory Adjustment Interface

INT052 - This will cover the requirements to publish inventory adjustments from RIMS to RMS. The system must have the ability to process inventory adjustments at the Warehouse level or the ERP interface as part of day to day business. PLCB creates a variety of inventory adjustments on a daily basis; some conditions include receipts, damage, breakage, and short shipments amongst a few. RMS allows for the tracking of Inventory adjustments with a reason code for all of these conditions.

N-7 Receipt Adjustment Interface

INT055 - RMS needs to be interfaced with the WMS system to import information related to receipts generated within the WMS after receiving merchandise from PLCB warehouses, other PLCB locations, or vendors. The interface will cover both Purchase Orders and transfers. Flat file creation and FTP transfer.

N-8 Shipment verification Interface

INT130 - RMS to be interfaced with the WMS system to import information related to Bills of Lading (referred to in this document as "BOL"s), Emergency Orders (referred to in this document as "EO"s) generated within the WMS after transferring merchandise from PLCB warehouses to other PLCB locations, as well as processing for any return to vendor shipments of the bailment items requested by vendor (RTV). Flat file creation and FTP transfer.