HPUFTIntegration

Project ID#: PRJXXXXXXX

Document Name: Solution Design Document

{All texts in blue are guidelines and have to be deleted before publishing this document.}

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**REVISION HISTORY LOG**

|  |  |
| --- | --- |
| **Name of Output** | **Solution Design Document** |
| **Current Status** | **Published/Non-Published** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date of Change** | **Revision Number** | **Purpose of Change** | **Person Responsible for Change** | **Work Request #/Other Reference Details** |
| 01/02/2017 | 1.00 | Initial Draft | Prasad Ch |  |

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# Solution Design Overview

## Design considerations

This design document has been created to outline the proposed system design for HP UFT integration.

HP Unified Functional Testing wihich provides functional and regression test automation for software appliance and environments

ALM supports maintenance and execution of manual, automation and performance tests as ALM is seamlessly integrated with all HP products such as HP UFT and HP Load Runner

Initiating HPALM to execute the test cases after the completion of executing all the test cases then trying to get the status and execution details of the particular test cases.

So that from the execution results we can come to know whether the test cases are passed or not. If it is passes then will go ahead and proceed for the further process.

HP UFT it supports keyword and scripting interfaces and features a graphical user interface. It uses the visual basic scripting edition to specify a test procedure and to manipulate the objects and controls of the application under test.

The integrated HP UFT testing software allows developers to test from a single console all three layers of a programs operations. The interface, the service layer and the database layer.

After defining requirements, development team kick starts their design and development process while testing team start designing tests that can be executed once the build is deployed.

Success of any product depends on the testing process and the quality of testing that is being carried out. A good test plan results in a bug free product.

[Briefly outline how the relevant requirements (refer to the Current & Future State and Gap documents) fit within the product (new or altered) and is expected to function / change. Include, where appropriate, a high level process map and ensure that each step within the process is covered in the design doc. The process being documented may result in new functionality that requires development or changes made to existing functionality. Changes may also be required for new or modified paper/electronic reporting.

Guideline considerations for this section.

* *Write the document in a logical sequence.*
* *For each process, include a brief process/function description and process map (this will lead to a better understanding of the overall process)*
* *Include logical start / finish points for each process / requirement*
* *Itemize all source data*
* *What are the expected outputs of the process you’re describing e.g. voucher matching, freight calculations. Interface files to other applications, etc.*
* *Timings / frequency of the process, e.g., the process is a daily / monthly activity*
* *List estimated transaction volumes if known*
* *Business implications, e.g., What other areas are impacted by the implementation of this requirement? e.g., Finance or Logistics, etc.*
* *Interface requirements (receiving or sending data) - each must be detailed separately*
* *Don’t get bogged down in detail – avoid “paralysis by analysis”, concentrate on priority items first i.e., don’t spend a lot of time on processes / transactions that may only occur once or twice a year. A manual work around may be better suited and much less costly to develop.*
* *Cross reference to other document sections (and other documents) as appropriate.*

## Updated SAD and/or SID are Not Required

# Overall Solution Design

## Organizational Structure

This section may not be required for all package implementations projects. Please complete this section based on the nature of the project.

*[Explain the organizational structure and units (company codes, plants, etc.) that were chosen for the project. This section will introduce the Organizational Structure Unit, its purpose and major characteristics for the business. List the organization structure items required to support this business scenario (Business Area/Process Group).]*

*We highly recommend using graphical illustrations to do so.*

*[Insert Org. Structure diagrams as necessary.]*

|  |  |  |  |
| --- | --- | --- | --- |
| oRGANIZATIONAL sTRUCTURE | | | |
| S No | Relevant Organizational unit | Corresponding organization (Customer…) | Explanation if necessary (e.g. , Mandatory) |
|  | Company code | Company Code | (Initialized from Plant Code) |
|  | Maintenance Plant | Mill | Physical site where Maintenance activities will be done |
|  |  |  |  |

## Assignment of Organizational Units

This section may not be required for all package implementations projects. Please complete this section based on the nature of the project.

*[Describe the assignment of organizational unit(s) in the Package System that is relevant to the company’s enterprise. Include how the package organization structures inter-relate. Include any reasons for deviations from organizational structure guidelines.]*

## Changes to Enterprise Structure

This section may not be required for all package implementations projects. Please complete this section based on the nature of the project.

*[Describe the effect of this structure item on the customer’s enterprise structure. For example:*

* *Will the credit collection procedure be moved to customer service?*
* *Will the plant be able to process more orders per day?*
* *Will there be an impact on head count?]*

## Organization Impact Considerations

*[Identify the people issues that may need to be addressed arising from the product implementation.*

*Identify the organizational change management initiatives underway related to this sub-process/function.*

*Areas of impact may be as follows:*

* *organization structure - a new department, reporting relationships*
* *jobs - competencies, technical and soft skills required*
* *workload - increased workload requires more personnel to perform a task*
* *human factors - are people afraid of losing their jobs; are they afraid they will no longer be able to complete their responsibilities*
* *work environment - are tools and reports changing?, are other related systems impacted?, working relationships with other departments or within a department?*
* *barriers - multiple geographic facilities, other initiatives impacting the same stakeholders*

*Indicate ’none’ in this section If there aren’t any impacts.]*

## Configuration Design

C:\Users\schalav\Downloads\Untitled Diagram (1).png

## 

## Component details

## Authentication Service API

Authentication details required to invoke procedure run service.

Invoke the Authentication service by providing username and password in request. Authentication service process the request and provides the Cookie in a response.

This Cookie will be used in all the services.

## Procedure Run Service API.

Procedure Run Service used to submit the procedure for a given bvs.

This API exprects a following details as a request.

* Domain Name
* Project Name
* BVSId
* Procedure

This API need Cookie header.Provide the cookie value received from authentication service in the request header.

Upon request to this API and On Successful request submission, this API sends the response consists of Entity component. Entity componect contains list of fields. Filed contains fieldname and field value.

Field with name as ‘info’ will be having build verification execution id(BVS Run ID).This value can be used to track the execution of Build Verification Suite.

|  |
| --- |
| **Request** |
| POST https://almamexstg.saas.hp.com/qcbin/rest/domains/DEVOPS/projects/DevOps\_LARA\_Integration/procedures/1002/startrunprocedure HTTP/1.1  Cookie: LWSSO\_COOKIE\_KEY=\_OqILKJL9EAOTTsqdA02BzRZ9Vb7HOJdq8BQTzRTEVHIIrHIpwy3xsQplhfgRE7TI5g94HC6KKzZbQpZs6Ge2\_eSuVWRg6tjGOPWnLdlg7eArYTEeDnA4Ld6HYZJY8LUhlRuR765WPa4wznPhsldIyewZv\_oKurczYP2-QJvjmgIuioCSTImFNfh2680qh-wtVx4GlSGjziVOycpnVQJNi2sqiVSBpcqhK7LJLELCDw.;Path=/  Content-Type: application/xml  Accept: application/xml  Host: almamexstg.saas.hp.com  Content-Length: 198  Expect: 100-continue  <Entity>  <Fields>  <Field Name="duration">  <Value>60</Value>  </Field>  <Field Name="vudsMode">  <Value>false</Value>  </Field>  <Field Name="reservationId">  <Value>-1</Value>  </Field>  </Fields>  </Entity> |
| **Response** |
| HTTP/1.1 201 Created  Date: Sun, 15 Jun 2014 06:42:08 GMT  Set-Cookie: QCSession=MzIxMDg4OzZFZXVNbTV6T1RUZzB4elJNYkdCYXcqKjtSRVNUIGNsaWVudDsgOyA.;Path=/  Expires: Thu, 01 Jan 1970 00:00:00 GMT  Content-Type: application/xml  Content-Length: 217  Server: Jetty(7.5.4.v20111024)  <?xml version="1.0" encoding="UTF-8" standalone="yes"?>  <Entity Type="StartRunProcessResponse">  <Fields>  <Field Name="SuccessStaus">  <Value>1</Value>  </Field>  <Field Name="info">  <Value>1007</Value>  </Field>  </Fields>  </Entity> |

## Build Verification Execution

Build Verification Execution provides the status of the procedure submitted in the ‘Procedure Run’ API.

This API expects following details as a request.

* DomainName
* Project Name
* BVS Run Id
* This API need Cookie header returned Authenticate API.

On successful submission of this request to API. It retruns the Status of the build verification suite.

This API sends the response consists of Entity component. Entity componect contains list of fields. Filed contains fieldname and field value.

Value of Field “completed-successfully” can be used to get the status of Build Verification Suite execution.

|  |
| --- |
| **Request** |
| GET https://almamexstg.saas.hp.com/qcbin/rest/domains/DEVOPS/projects/DevOps\_LARA\_Integration/procedure-runs/1007  HTTP/1.1  Cookie: LWSSO\_COOKIE\_KEY=HbMqiD2tAoBSrfYLafK3Q\_DKhKXdYGwC\_QomhLW24daFiqQBqC33VmsyLY44nGdnNYeBVFs703lQahHooozuJpUhPubqP9a0yTq1bR4wra1lk\_n0QDyDSr3Yz9FGXMb4SOhCYHFBVjiMpQ9nZrGdxBzhWnNvjvBB6ddnH4L--N0SYSxyXNoiBCaQa7Rqj3amjsG75u5XdqGcUaBPKjduQZ80nCpG1paAiGDAgk3Sw7M.;Path=/  Host: almamexstg.saas.hp.com |
| **Response** |
| HTTP/1.1 200 OK  Date: Tue, 17 Jun 2014 00:17:32 GMT  Set-Cookie: QCSession=MzI4MzA0O2FpTmpGWTlGcTJPQVNUSmpuVDFwZXcqKjtSRVNUIGNsa  WVudDsgOyA.;Path=/  Expires: Thu, 01 Jan 1970 00:00:00 GMT  Cache-Control: no-cache, max-age=0  Pragma: no-cache  Content-Type: application/xml  Content-Length: 1270  Server: Jetty(7.5.4.v20111024)  <?xml version="1.0" encoding="UTF-8" standalone="yes"?>  <Entity Type="procedure-run">  <Fields>  <Field Name="end-time">  <Value>2014-06-14 23:42:47</Value>  <Field Name="state">  <Value>Finished</Value>  --  <Field Name="completed-successfully">  <Value>N</Value>  </Field>  --  --  </Fields>  <RelatedEntities/>  </Entity> |

## Build Verification Run Details

This API provides the State of the Requested procedure.

This API expects following details as a request.

* DomainName
* Project Name
* BVS Run Id
* This API need Cookie header returned Authenticate API.

On successful submission of the request. It sends a response.Response consists of Entity component. Entity componect contains list of fields. Filed contains fieldname and field value.

Value of Field “STATE” (Finished or No Run) can be used to get the Run status of Build Verification.

|  |
| --- |
| **Request** |
| GET  https://almamexstg.saas.hp.com/qcbin/rest/domains/DEVOPS/projects/DevOps\_LARA\_Integration /procedure-testset-instance-runs?query={procedure-run['1039']}  HTTP/1.1  Cookie: LWSSO\_COOKIE\_KEY=KaoFCOwutaCNikRcGagyycnNq\_W3PGL4WybR3bDIEDvX31PbU1Zoju4qP3Ro4hEhIUSE\_Sy1Q40Q8VfJ\_VeFEk9KxU6RWr7wKtqaODbdsJKSLD782MT72m0oIARdx-o6B3X5TwtbR6bWDtrjJXJeJ02\_cFRkr8pHqHU-KxLmNQgclkM6AY6A0ipcxMcZaQaZYQ4Pt5GmsLRBLkk-Uv4gHuuopLzcoyjQINmoTlZE\_rw.;Path=/  Host: almamexstg.saas.hp.com |
| **Response** |
| HTTP/1.1 200 OK  Date: Tue, 17 Jun 2014 00:35:10 GMT  Set-Cookie: QCSession=MzI4MzY0O0ctd2ZYM3pjWG1HMGwyWEdVUnVkLUEqKjtSRVNUIGNsaWVudDsgOyA.;Path=/  Expires: Thu, 01 Jan 1970 00:00:00 GMT  Cache-Control: no-cache, max-age=0  Pragma: no-cache  Content-Type: application/xml  Content-Length: 4940  Server: Jetty(7.5.4.v20111024)  <?xml version="1.0" encoding="UTF-8" standalone="true"?>  <Entities TotalResults="3">  <Entity Type="procedure-testset-instance-run">  <Fields>  <Field Name="run-id">  <Value>131</Value>  </Field>-<Field Name="location">  <Value/>  </Field>-<Field Name="state">  <Value>Finished</Value>  </Field>-<Field Name="purpose">  <Value>Quick Test Professional</Value>  </Field>-<Field Name="on-failure-settings">  <Value/>  </Field>  </Fields><RelatedEntities/>  </Entity> |

## Physical Design

## End to end design

*[This section needs to contain references to the following:*

* *A graphical representation that describes an end-to-end business scenario, which includes the components, workflows, reports, system interfaces, etc. Each scenario will be a separate diagram.*
* *A graphical display of logical components illustrated by the appropriate symbols and identified by a brief name.*
* *Illustration of Buthe overall flow of information through the developed components*
* *Graphically display the relationship and flow of data between the primary processes, data files and database of an application.*
* *Provide a basis to explain the customization to management, users and the project team.*

*This section can be omitted if the application flow is similar to the one in the System/Solution Architecture document.]*

[Text Here]

# Functional Design

## Design Overview

[Provide the functional design of the components as mentioned in section F above. Explain briefly what has mandated this customization or new development and what business aspect/functionality it will address. In brief, explain how the customization or development will enable meeting the specific requirements. Reference the relevant documents (e.g., Current & Future State and Gap Analysis documents). Briefly state the significant user expectations & how they will be addressed.]

## Detail Functional design

Sequence Diagram:

C:\Users\schalav\Downloads\Sequence diagram.png

# Technical Design

## Detailed technical design

This section describes the components used and pseudo code

## Authentication

|  |  |  |  |
| --- | --- | --- | --- |
| **Class** | AuthenticationDetails | **Package** | com.cicdmainframe.hpuftintegration.authetication |
| **Extends** | HPUFTIntegrationBase | **Implements** |  |
| **Instance Variables(if any)** | **public** **class** AuthenticationDetails **extends** HPUFTIntegrationBase{  **public** Map<String, String> getAuthenticateDetails() { **try** {  String authHeader = "Basic " + credentials;  String authUrl = PropertiesCache.*getInstance*().getProperty(***AUTHENTICATION\_URL***);  ----  WebResource webResource = restClient.resource(authUrl);  ClientResponse response = webResource.header("Authorization",authHeader ) .get(ClientResponse.**class**);  --  --  MultivaluedMap<String, String> headers = response.getHeaders();  String cookieValue = **null**;  **for** (Entry<String, List<String>> header : headers.entrySet()) {  **if** ("Set-Cookie".equalsIgnoreCase(header.getKey())) {**for**(String cookieVal : header.getValue()) {  cookieValue = cookieVal;  **break**;  }  }  }  String[] lwSsoCookie = cookieValue.split("=");  **if** ("LWSSO\_COOKIE\_KEY".equalsIgnoreCase(lwSsoCookie[0])) {  *authenticationMap*.put("LWSSO\_COOKIE\_VALUE", cookieValue);  }  }  }  **}** | | |
| **Description** | It reads username, pass word from the input properties and invoke authentication service. This service returns cookies in its response header. This cookie will be stored in a map which will be used as authentication to others. | | |

## Start Build Verification Suite API

|  |  |  |  |
| --- | --- | --- | --- |
| **Class** | StartRunProcedure | **Package** | com.cicdmainframe.hpuftintegration.StartRunProcedure |
| **Extends** | HPUFTIntegrationBase | **Implements** |  |
| **Instance Variables(if any)** | **public** **class** StartRunProcedure **extends** HPUFTIntegrationBase {  **public** **static** **void** main(String[] args) {  **if** (args.length < 2) {  String inputPropertiesPath = args[0];  String outputPropertiesPath = args[1];  String certificateDetailsPath = **null**;    Properties inputProperties = **new** Properties();  Properties outputProperties = **new** Properties();  ---  ----  StartRunProcedure hpuftintegration = **new** StartRunProcedure();  String bvsExecutionStatus = hpuftintegration.execute(inputProperties, outputProperties); }  **}** | | |
| **Description** | Main method reads args for the input properties, output properties file from .  Execute method calls the ‘StartRunProcure’ service .This service returns Entity as response. This entity contains fields which contains ‘BVSRUNID’. | | |

## Get Status of Build Verification Suite Execution

|  |  |  |  |
| --- | --- | --- | --- |
| **Class** | BuildVerificationSuiteExecution | **Package** | com.cicdmainframe.hpuftintegration.hpalmdomain |
| **Extends** | HPUFTIntegrationBase | **Implements** |  |
| **Instance Variables(if any)** | **public** **class** BuildVerificationSuiteExecution **extends** HPUFTIntegrationBase{  **public** BuildVerificationSuiteResponse doGetBuildVerificationSuiteExecutionStatus (String domainName, String projectName, String bvsId) **throws** RuntimeException {  WebResource webResource = restClient.resource(bvsURL)  .path("domains").path(domainName)  .path("projects").path(projectName)  .path("procedure-runs").path(bvsId);  ClientResponse response = webResource.accept("application/xml")  .header("Authorization", "Basic " + credentials)  .header("Cookie",cookieValue)  .get(ClientResponse.**class**);  //read the data  **if**(response.getStatus()==201 || response.getStatus()== HttpStatus.***SC\_OK***) { | | |
| **Description** | This class is used to find the status of the build verification suite. It takes domainnam, ‘doBuildVerifcation’ method takes project name and bvs id and returns a entity as response. Entity response contains multiple fields and its values.  Value of Field “completed-successfully” can be used to get the status of Build Verification Suite execution. | | |

## Get Build Verification Run Details

|  |  |  |  |
| --- | --- | --- | --- |
| **Class** | BuildVerificationRunDetails | **Package** | com.cicdmainframe.hpuftintegration.hpalmdomain |
| **Extends** | HPUFTIntegrationBase | **Implements** |  |
| **Instance Variables(if any)** | **public** **class** BuildVerificationRunDetails **extends** HPUFTIntegrationBase { **public** BuildVerificationSuiteResponse doGetBuildVerificationRunDetails (String domainName, String projectName, String bvsId) **throws** RuntimeException {  MultivaluedMap<String, String> params = **new** MultivaluedMapImpl();  params.add("query", "{procedure-run["+bvsId+"]}");  WebResource webResource = restClient.resource(startRunProcedureURL)  .path("domains").path(domainName)  .path("projects").path(projectName)  .path("procedure-testset-instance-runs")  .queryParams(params); //query={procedure-run['< BVS Run ID>']}  ClientResponse response = webResource.accept("application/xml")  .header("Authorization", "Basic " + credentials)  .header("Cookie",cookieValue)  .get(ClientResponse.**class**);//read the data  **if**(response.getStatus()==201 || response.getStatus()== HttpStatus.***SC\_OK***) { | | |
| **Description** | This class is used to find the run details of the build verification suite.‘doGetBuildVerifcationRunDetails’ method takes project name and bvs id and returns a entity as response. Entity response contains multiple fields and its values. Value of Field “state” can be used to get the status of Build Verification Suite Run Details. | | |

## Technical approach

[Explain the technical approach that will be adopted for the customization and explain the key benefits of the approach adopted. Briefly describe the methods, processes, approaches, techniques or conventions used for this design. If one or more formal/published methods were adopted or adapted, include a reference to a more detailed description of these methods.]

[Text Here]

## Coding standards

[The various coding standards that will be employed to develop the new components should be mentioned here. References to existing documents are sufficient. Mention if there are any deviations to the standard coding/GUI styles.]

[Text Here

## System environment

Hardware:

Operating System:

Java Verision:

[Text Here]

## Migration instructions

*[List the specific migration instructions to move the objects from the development instance to testing to production. An example of migration instructions is given below:*

* *All new and modified objects as part of this customization will be delivered in a single project named xyz.*
* *Grant the necessary security and perform necessary setup.]*

# Appendix

## Definitions and Acronyms

[List the definitions of all terms, acronyms, and abbreviations used in this documents]

|  |  |
| --- | --- |
| Abbreviation | Description |
| [Text Here ] | [Text Here] |
|  |  |
|  |  |