



SAND2017-4335C



TECHNICAL &  
SYSTEM ADMIN

# Seizing Selective Adoption and Mastering Maintenance.

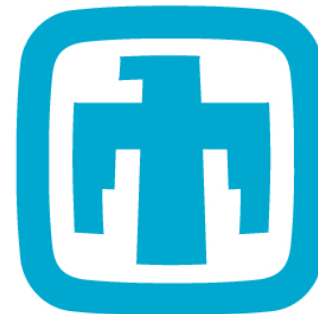
*Tips to Stay Ahead.*

2017  
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**NAVIGATE**  
YOUR PATH  
#OHUG2017

# About the Presenter

- » Speaker: **Frank Jennings**
- » Position: **Principal Software Systems Engineer**
- » Company: **Sandia National Laboratories**  
**Albuquerque, NM**



**Sandia  
National  
Laboratories**



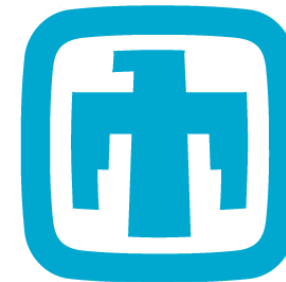
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**NAVIGATE** YOUR PATH

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# Sandia National Laboratories

- » Sandia began in 1945 as Z Division, the assembly arm of Los Alamos National Laboratories
- » 1948 – Sandia National Laboratories was established
- » Primary Mission - National Security
  - Nuclear Weapons
  - New Technologies
  - Energy Research
  - Materials Science
  - Cyber Security
  - Other Operations
- » Workforce of >12,200 people
  - 10,652 degrees (1,857 are doctorates)
- » Annual funding of ~ \$3 Billion



**Sandia  
National  
Laboratories**

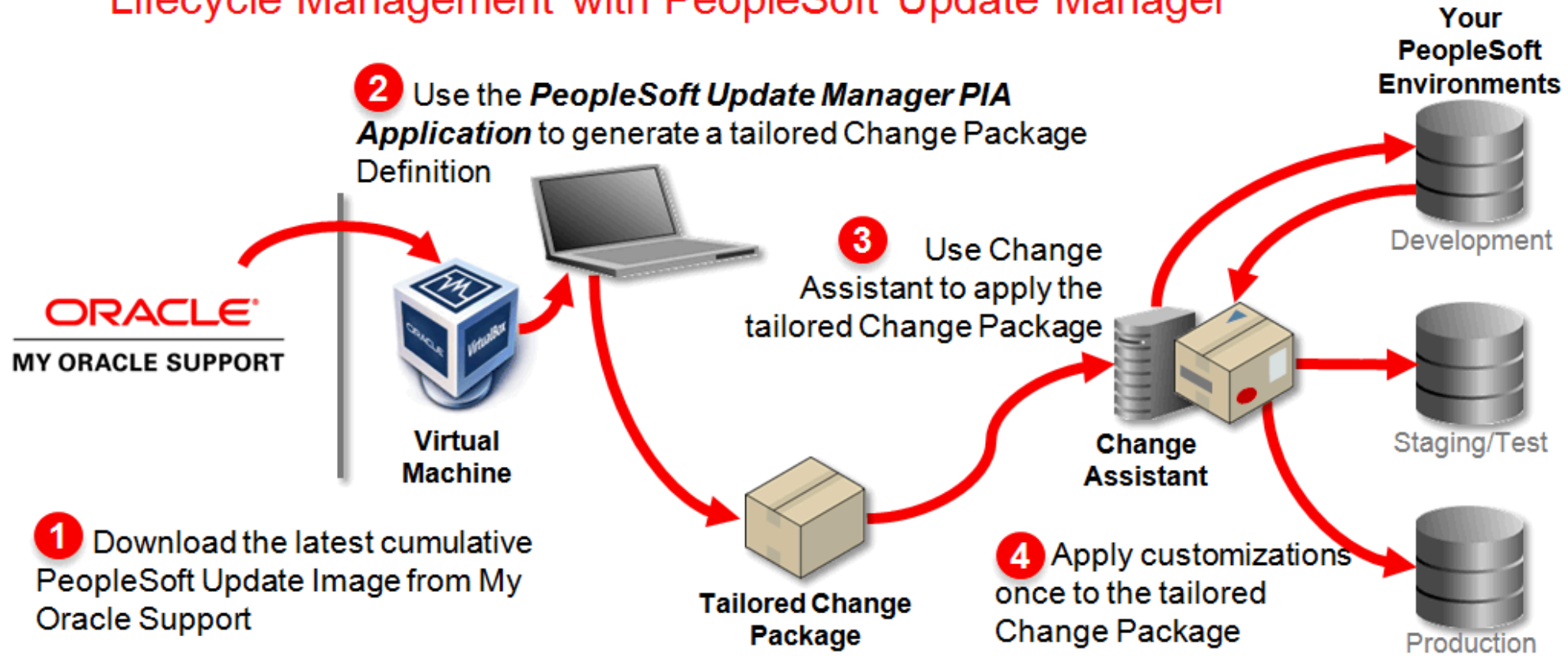
# Agenda / Contents

- » Architecture Review / Overview
- » Maintenance Schedules / Methods
  - Handling new PUM Image delivery
- » Advanced Packages through Searching
  - Using SQL Searches to expand and improve searching
- » Utilizing the Customization Repository
  - Making it easier through innovation
- » Moving Packages and History through new PUM Versions
- » Charting your Image Currency

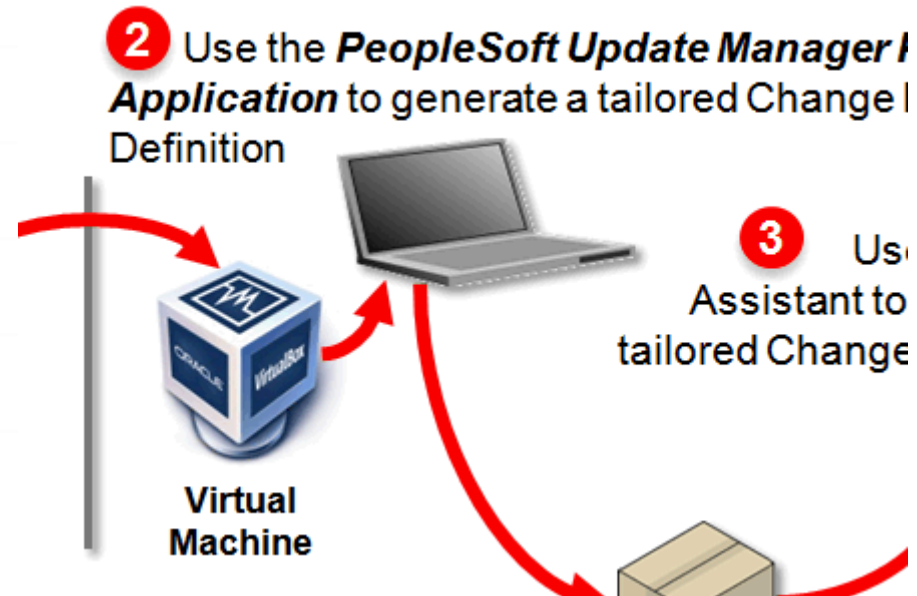
# Architecture Review / Overview

## PeopleSoft Maintenance

Lifecycle Management with PeopleSoft Update Manager



# Architecture Review / Overview



# Architecture Review / Overview

- » Beginning with HCM PI19, new images are delivered using PeopleSoft Deployment Packages (DPK's) rather than Virtual Machine (vm) images
    - This allows easier installation
    - There are versions for both Windows and Linux
    - The DPK contains all of the parts necessary for deployment
      - Tuxedo
      - WebLogic
      - Oracle Database
      - PS\_HOME
      - Domain configuration
  - » DPK's make things MUCH easier, once you get the hang of it
  - » By cleaning the images off (delivered), the server is immediately ready for a new image version
  - » Notes on image changing and CA config are available at <https://gist.github.com/frankjenn>
- \*\*Please note that these are 'work notes' as opposed to a polished document\*\***

# Architecture Recommendations

- » Recommend “dual server” architecture
  - 2 hosts (physical or virtual) for hosting images
  - 1 with the current image
  - 1 with the last image
  - This allows reference, comparison, package reference to last image
- » Naming convention – if numeric, host ‘even’ numbered PI on ‘even’ numbered server (and vice versa)
  - This allows you to have ONLY 2 links for all images (assuming you keep the defaults ports)
  - Also reduces confusion about the current image
  - TNS entries can be re-used, but we’ve chosen to name the db with the image version instead i.e. HCM92P21
  - TNS is required for PeopleTools access and for searching the PUM database



# Architecture Recommendations

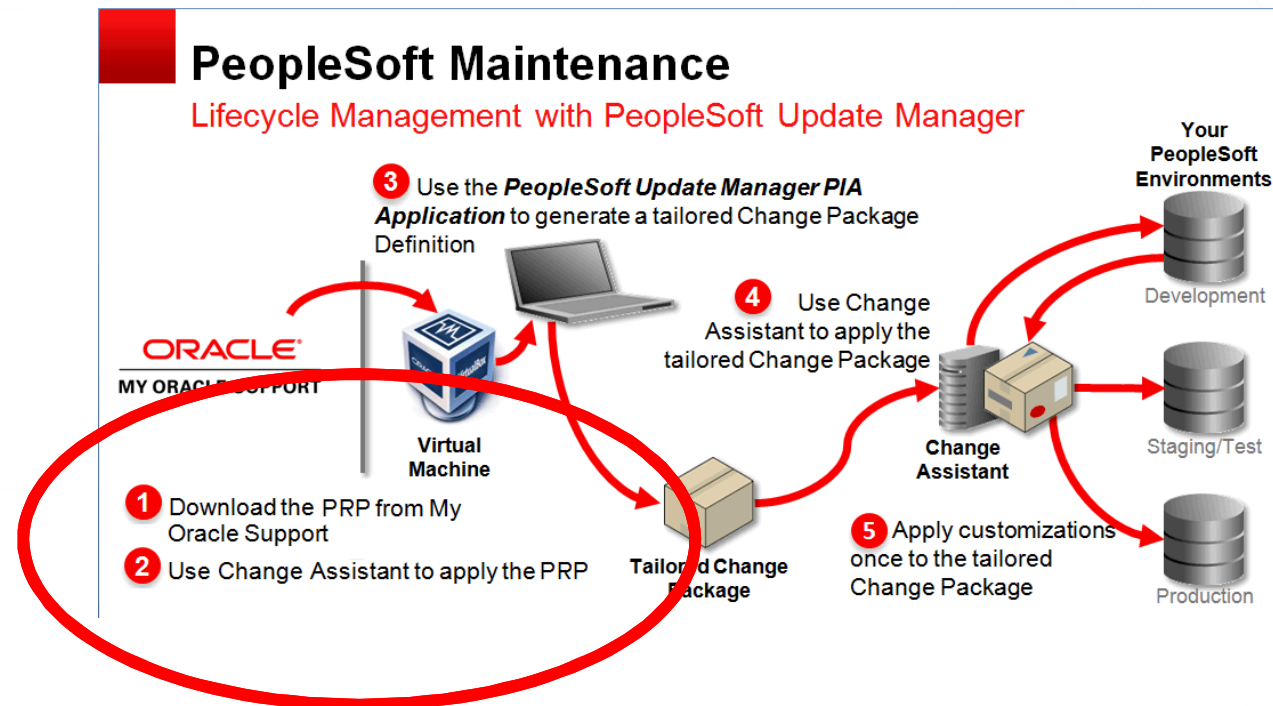
## » Hardware

- Current images are well supported on (for Windows 2012):
- Dual core processor (even single can work, for small user bases)
- 8Gb RAM or higher
- Disk space >220Gb
  - DPK's consume ~ 20Gb
  - Greater during installation
  - Installation requires at least 100Gb
  - Once installed, images actually consume ~70Gb
  - **\*\*Keep your dpk\_install folder for cleaning the image later\*\***

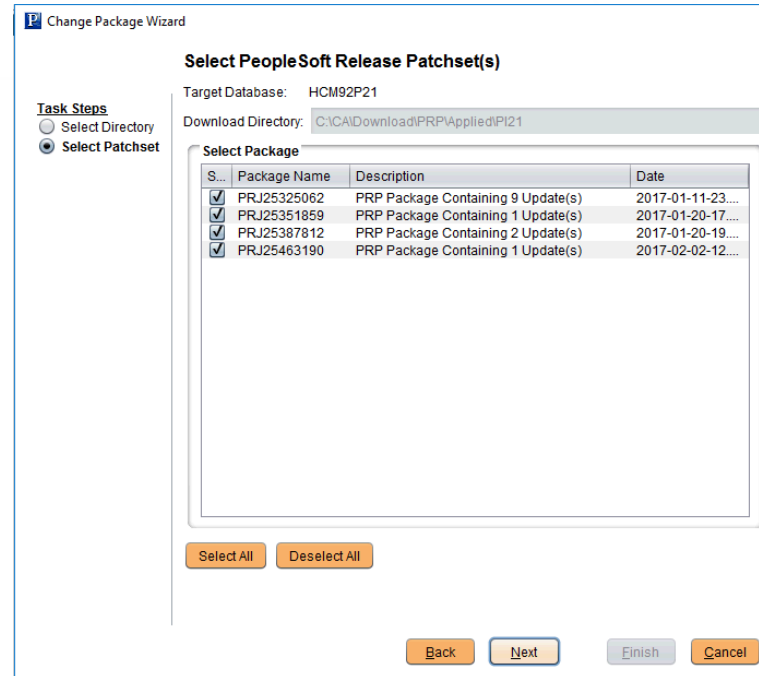
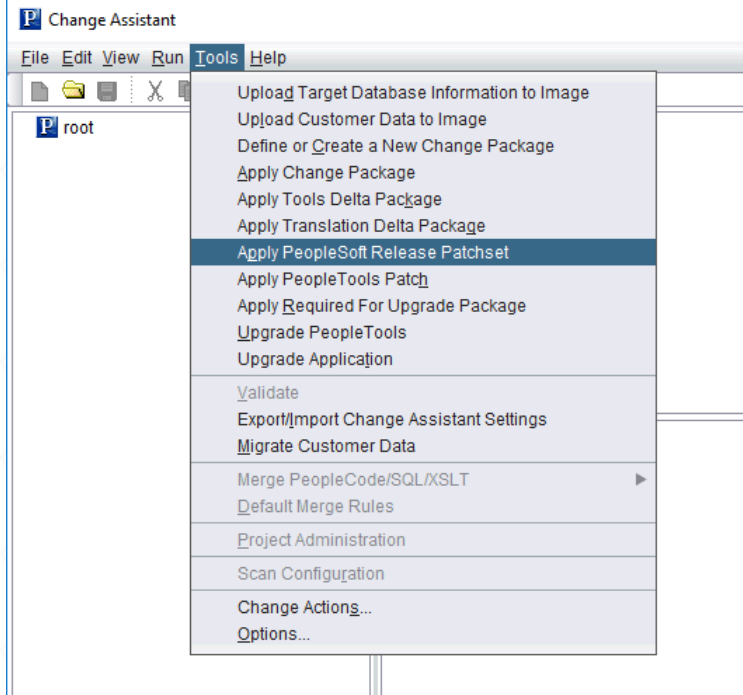
# PUM Image Handling / PRP's

- » New images are released every 6-8 weeks (shorter cycles @ year end...sometimes...)
- » Numerous PeopleSoft Release PatchSets (PRP's) can be released in between Image cycles
  - ACA
  - Tax
  - Oops's (like PI16)
  - ALWAYS follow the standard PUM workflow for PRP's

- » NOTE: PUM packages are always downward compatible for PeopleTools (down to PT8.53)
  - Current images are on PT8.55.



# PRP Application



# Maintenance Schedules / Methods

- » ***Sandia takes a hybrid approach to patch management***
- » Tax / Regulatory Updates – As released
- » Security Patches – As released
- » With each new Image release – evaluate current bugs against the fix list
  - Each PI includes an Excel spreadsheet (sortable) with the new fixes/additions
- » New Features - As allowed by the business / priorities
- » By Module – As allowed by the business / priorities
- » Annual(ish) “true up” to consume all changes
  - Consume all changes released up through a cut-off date, roughly a month before go-live, to allow testing time.
  - Option to stay 1 image behind to avoid being on the “bleeding edge”



# Advanced Package Creation

» There are numerous delivered search options

## Define Change Package

Step 4 of 6

Identify bugs for Change Assistant to create an environment specific Change Package from the source database.

1 2 3 4 5 6

Return to start

Previous

Next

Select a method to search for BUGs and create a Change package

Database	PSDV1	PeopleTools Release	8.55.13
Description	PSDV1		
Package Name	OHUGTEST1		

### Search Options

True Requisites	New Features	Translations Only	Tax Updates
Specific Updates	Specific Objects	Prod/Severity/Image	Other Criteria

Advanced Options

### Product/Severity/Image Search

Search Filters ?

Product Family ?

Include Related Component and SubComponents ?

Select one or more Values Find | View All First 1-4 of 4 Last

Value	Description
<input type="checkbox"/> CC	Common Components
<input type="checkbox"/> GP	Global Payroll
<input type="checkbox"/> HR	Human Resources
<input type="checkbox"/> PNA	Payroll North America

Installed Products

Include Related Component and SubComponents ?

Select one or more Values Find | View All First 1-10 of 15 Last

Product Name	Product
<input type="checkbox"/> PeopleSoft Enterprise HCM Benefits Administration	BA
<input type="checkbox"/> PeopleSoft Enterprise HCM eDevelopment	EA
<input type="checkbox"/> PeopleSoft Enterprise HCM eCompensation	EC
<input type="checkbox"/> PeopleSoft Enterprise HCM eBenefits	EF
<input type="checkbox"/> PeopleSoft Enterprise HCM eProfile	EL
<input type="checkbox"/> PeopleSoft Enterprise HCM Common Application Objects	EO
<input type="checkbox"/> PeopleSoft Enterprise HCM ePerformance	EPF
<input type="checkbox"/> PeopleSoft Enterprise HCM Candidate Gateway	ER
<input type="checkbox"/> PeopleSoft Enterprise HCM Talent Acquisition Manager	ERM
<input type="checkbox"/> PeopleSoft Enterprise HCM ePay	EY

Severity

Image Number

Search For Bugs



# Advanced Package Creation

## Define Change Package

Step 4 of 6

Identify bugs for Change Assistant to create an environment specific Change Package from the source database.



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Description	PSDV1		
Package Name	OHUGTEST1		

### Search Options

True Requisites	New Features	Translations Only	Tax Updates
Specific Updates	Specific Objects	Prod/Severity/Image	Other Criteria

Advanced Options

### Tax Updates Search

Help

Add Tax Updates to any other Search Criteria

#### Search Filters

- Tax or Regulatory Update
  - Name: Tax Update (PSFT) Value: Tax Update 17-A
- Image Number

**Search For Bugs**

No Candidate Bugs Found

OK Cancel



# Advanced Package Creation

## Define Change Package

Step 4 of 6

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Select a method to search for BUGS and create a Change package

Database	PSDV1	PeopleTools Release	8.55.13
Description	PSDV1		
Package Name	OHUGTEST1		

### Search Options

True Requisites	New Features	Translations Only	Tax Updates
Specific Updates	Specific Objects	Prod/Severity/Image	Other Criteria

Advanced Options

## Search by Criteria

X

Help

Add Search Results to any other Search Criteria

### Search Filters

Tracking Group

Name

Value

Image Number

Search For Bugs

No Candidate Bugs Found

OK

Cancel



# Advanced Package Creation

- » While these search options are good, they're often incomplete
  - ACA frequently has mis-categorized patches
  - There's NO delivered **text** search option
- » These (and other limitations) can be overcome by searching the tables within the PI database



# PI SQL Search - Packaging

- » Often (*although it's improving*), patches are mis-categorized and don't appear on searches within PUM.
- » Numerous other search options require a text search, which doesn't exist.
- » Example: "Security"

```
select distinct ptiasprptno from PS_PTIASPRPTHEAD where upper(ptiasprptsubject) like '% &&SearchSpec %' or upper(ptiasprptsubject) like '% &&SearchSpec' or upper(ptiasprptsubject) like '&&SearchSpec%' order by 1;
```

- » This and others are available on Github:
  - <https://gist.github.com/frankjenn>

# PI SQL Search DEMO

- » **\*\*SEARCH, but DO NOT CHANGE data in the image tables\*\***
- » select distinct ptiasprptno from PS\_PTIASPRPTHEAD where upper(ptiasprptsubject) like '% &&SearchSpec %' or upper(ptiasprptsubject) like '% &&SearchSpec' or upper(ptiasprptsubject) like '&&SearchSpec%' order by 1;

The screenshot displays the PeopleTools interface for searching and selecting bugs. It includes a SQL query window, a 'Define Change Package' dialog, a 'Find these specific' dialog, and two 'Search by Updates' windows showing bug lists.

**SQL Query:**

```
select distinct ptiasprptno from PS_PTIASPRPTHEAD where upper(ptiasprptsubject) like '% &&SearchSpec %' or upper(ptiasprptsubject) like '% &&SearchSpec' or upper(ptiasprptsubject) like '&&SearchSpec%' order by 1;
```

**Query Result:**

PTIASPRPTNO
14208356
14392984
14511458
15855021
15887692
16559923
16559929
16565462
16627760
16685927

**Define Change Package:**

Database: PSDV1, PeopleTools Release: 8.55.13, Description: PSDV1, Package Name: TEST3

**Find these specific:**

25090891  
25097465  
25112887  
25113620  
25126928  
25177624  
25229127  
25329629

Use a comma or space to separate Bug numbers (i.e. 10335,10449). Invalid entries will be removed automatically.

**Search by Updates (Top):**

BUG Number	Product	Subject	Applied	Custom Impact	Test Exists	Image Number	Details
14208356	HR	HOME HOST SECURITY IS NOT WORKING WHEN UPDATED ONLINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	
14392984	TL	ETL9.1 DISPLAY ONLY SECURITY DOES NOT ENABLE LINKS ON THE PUNCH TIMESHEET	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12	
14511458	TL	ADJUST PAID TIME SEARCH - CANNOT USE WITH DATA PERMISSION LIST SECURITY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	
15855021	GPT	WRONG FORMAT IN TEXT FILE SOCIAL SECURITY REPORT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	
15887692	GES	TAX UPDATE 2013- CHANGES IN SOCIAL SECURITY BASES	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
16559923	HR	HR-CHANGES REACTION OF SOCIAL SECURITY BULETIN 2013-2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
16559929	GES	REACTION TO SOCIAL SECURITY BULETIN 2013-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
16565462	HR	GPS POST PLAN SECURITY IS NOT WORKING AS EXPECTED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
16627760	GPT	THAI INCOME TAX FORMS & SOCIAL SECURITY F PREFIX FIELD ISSUE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
16685927	EO	CORRECT ISSUES WHEN PROCSSING SECURIT METADATA OF TYPE 'DATA MIGRATION'	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

**List of Updates (Bottom):**

BUG Number	Product	Subject	Applied	True Post Req	Custom Impact	Test Exists	Image Number	Details
<input checked="" type="checkbox"/>	21907431	EF	SECURITY EXCEPTION ERROR WHILE DELETING MULTIPLE LE TEMPLATE ROWS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	21	
<input checked="" type="checkbox"/>	25064009	EL	IMPLEMENT AWE APPROVALS FOR EPROFILE MARITAL TRANSACTION - SECURITY DEPLOYMENT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20	
<input checked="" type="checkbox"/>	25057725	EL	IMPLEMENT AWE APPROVALS FOR EPROFILE MARITAL TRANSACTION - SECURITY DEPLOYMENT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20	
<input checked="" type="checkbox"/>	25112887	ELM	EMPLOYEE SNAPSHOT FEATURE - SECURITY UPDATES	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	21	
<input checked="" type="checkbox"/>	24972600	ELM	TRANSLATED VERSION OF BUG 24396509 - EESNAP - MENU AND SECURITY OBJECTS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20	
<input checked="" type="checkbox"/>	24825496	ELM	EMPLOYEE SNAPSHOT FEATURE - SECURITY UPDATES	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20	
<input checked="" type="checkbox"/>	24396509	ELM	EMPLOYEE SNAPSHOT FEATURE - MENU AND SECURITY OBJECTS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	19	
<input checked="" type="checkbox"/>	24372780	ELM	EMPLOYEE SNAPSHOT FEATURE - SECURITY HANDLER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	19	
<input checked="" type="checkbox"/>	24917860	EO	HTML EMAIL- HARD CODED MESSAGE IN THE CODE WHEN USING PERFORM SENT-TO SECURITY C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	21	
<input checked="" type="checkbox"/>	25097465	EO	SECURITY DEPLOYMENT TOOL ADD ACM PLUGIN - 854 SPECIFIC OBJECTS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	21	

# Customization Repository

» Great tool to show which packages/objects will affect customizations

The screenshot displays the 'Manage Customizations' interface. On the left is a sidebar with the following menu items: 'Select Target Database', 'Define Change Package', 'Update Manager Utilities', 'Customization Repository', 'Manage Customizations' (highlighted), 'Manage Customized Objects', 'Run Customization Calculation', and 'Test Repository'. The main content area is titled 'Manage Customizations' and contains a table with the following data:

Customization Repository			Personalize	Find	View 10	First	1-62 of 62	Last
Customization Name	Description	*Include in Package						
1 SLSCRTYFORM	SLSCRTYFORM	Yes						
2 SL_12088	SL_12088	Yes						
3 SL_13670	SL_13670	Yes						
4 SL_13679_UPDATED	SL_13679_UPDATED	Yes						
5 SL_13744	SL_13744	Yes						
6 SL_13927	SL_13927	Yes						
7 SL_92_HOMEPAGE_LINK	SL_92_HOMEPAGE_LINK	Yes						
8 SL_ACA_BUILD_ALL	SL_ACA_BUILD_ALL	Yes						
9 SL_ACA_CLO	SL_ACA_CLO	Yes						
10 SL_AUTOSCREEN	SL_AUTOSCREEN	Yes						
11 SL_BARB_TEST	SL_BARB_TEST	Yes						
12 SL_COMP_NTC_ADM	SL_COMP_NTC_ADM	Yes						

# Customization Repository

- » Challenge – Each project to be analyzed must be copied to file and uploaded separately
  - Option 1: Create a master project (compare db) from tools to capture all customs
    - This will show customs, but doesn't tell you which projects need to be reviewed
  - Option 2: Load all projects into PUM
    - Better option because the results are meaningful
    - MUCH more cumbersome, unless you don't have many projects
  - Option 3: Better living through scripting!
    - Export all of your custom projects to file in minutes
    - Import them into PUM (still pretty manual)

# Customization Repository - Exporting

» select distinct 'PSIDE.EXE -HIDE -PJTF ' || projectname || ' -FP C:\CA\Projects\Custom -CT ORACLE -CD <dbname> -CO <username> -CP <password> -QUIET -LF C:\CA\Projects\Custom\project\_export.log'  
from psprojectdefn  
where lastupddtm > sysdate-365 -- Set for whatever timeframe you desire  
and projectname like '&ProjectSpec%';

» <https://gist.github.com/frankjenn>

```
Command Prompt
C:\PT8.55\bin\client\winx86>.PSIDE.EXE -HIDE -PJTF SL_ACA_2016_CLO -FP C:\CA\Projects\Custom
O <username> -CP <password> -QUIET -LF C:\CA\Projects\Custom\project_export.log
```

Name	Date modified	Type	Size
SL_92_HOMEPAGE_LINK	10/20/2016 7:01 AM	File folder	
SL_12088	10/20/2016 7:01 AM	File folder	
SL_13670	10/20/2016 7:01 AM	File folder	
SL_13679	10/19/2016 3:55 PM	File folder	
SL_13679_UPDATED	10/20/2016 7:01 AM	File folder	
SL_13744	10/20/2016 7:01 AM	File folder	
SL_13927	10/20/2016 7:01 AM	File folder	
SL_ACA_BUILD_ALL	10/20/2016 7:01 AM	File folder	
SL_ACA_CLO	10/20/2016 7:02 AM	File folder	
SL_AUTOSCREEN	10/20/2016 7:02 AM	File folder	
SL_BARB_TEST	10/20/2016 7:02 AM	File folder	
SL_COMP_NTC_ADM	10/20/2016 7:02 AM	File folder	

# Customization Repository - Importing

The screenshot displays the Change Assistant application interface. The 'Tools' menu is open, showing the path: **Tools > Upload Customer Data to Image**. The main window shows a project tree with 'root' selected. Overlaid on this is the 'PUM(User) Data Loader' dialog box, which has the following settings:

- Import Customer Metadata into PUM Source
- Project Name: HCM92P21 (with a 'Create' button)
- Managed Object Project(s) (with 'Add Project' and 'Remove Project' buttons)
- Project Path: (empty)
- Project Name: (empty)
- Project Content: (empty)

A 'Select Project' dialog box is also open, showing a file explorer view of the 'Custom' folder. The folder list includes:

- SL\_92\_HOMEPAGE\_LINK
- SL\_12088
- SL\_13670
- SL\_13679
- SL\_13679\_UPDATED
- SL\_13744
- SL\_13927
- SL\_ACA\_2016\_CLO
- SL\_ACA\_BUILD\_ALL
- SL\_ACA\_CLO

The 'Folder Name' field is set to 'C:\CA\Projects\Custom' and 'Files of Type' is set to 'All Files'. 'Open' and 'Cancel' buttons are visible at the bottom of the dialog.



# Customization Repository – Viewing Results

- » Remember to run the customization calculator after importing projects
  - » Then, as packages are created, the customizations will already be identified
- \*\*NOTE: Custom objects, which are affected by delivered changes, will still need to be evaluated\*\***

- Select Target Database
- Define Change Package
- Update Manager Utilities
- Customization Repository
- Manage Customizations
- Manage Customized Objects
- Run Customization Calculation**
- Test Repository

**Review Change Packages**

Database: PSDV1  
Description: PSDV1  
Package Name: ACAP121  
Last Updated on: 01/24/2017 10:06:50AM  
Package Status: Package Created Migrated: No  
Package Create Date: 01/25/17 10:22:26AM  
Package Description: All P121 ACA plus 2 PRPs

Search Scope: All Other Search Criteria  
Dependency Calculation: Standard

Show Template

**Bugs in This Package** Find | View All | First 1-5 of 16 Last

BUG Number	Product	Subject	User Selected	Details
25047446	EF	FLUID ACA - SFF VIEW FORM 1095C PAGE TEXT NOT WRAPPING FOR NO FORMS	<input type="checkbox"/>	
25130404	HR	TRANS VER OF 23049320 ACA ABILITY TO ADD/DEL COVERED IND FROM ACA EE XMIT DATA	<input type="checkbox"/>	
25130415	HR	TRANS VER OF 23621532 ACA ADD TRANSMIT STATUS N AUTH TRANSMIT IND ON XMIT HIST	<input type="checkbox"/>	
25130451	HR	TRANS VER OF 24477797 ACA ALLOW BUSINESS NAME 75 CHARS ON ACA EE TRANSMIT DATA	<input type="checkbox"/>	
25130471	HR	TRANS VER OF 24805439 ACA EXPAND BUSINESS NAME 75 CHARS DATA STRUCTURE CHG	<input type="checkbox"/>	

\*Project: ACAP121

**Modified Objects in This Package** Find | View 100 | First 1-5 of 174 Last

Project	Description	Object Value 1	Object Value 2	Object Value 3	Object Value 4	Customization Count
ACAP121	App Engine Program	ACA_BAS_EXTR				
ACAP121	App Engine Program	ACA_EXTRACT				
ACAP121	App Engine Program	ACA_UPDALL				
ACAP121	App Engine Program	DC24805439				
ACAP121	App Engine Section	ACA_BAS_EXTR	ACABASX			

**Customizations** Find | View All | First 1-2 of 2 Last

Customization Name	Description	Include in Package
SL_ACA_BUILD_ALL	SL_ACA_BUILD_ALL	Yes
SL_ACA_CLO	SL_ACA_CLO	Yes

# Customization Repository - DEMO



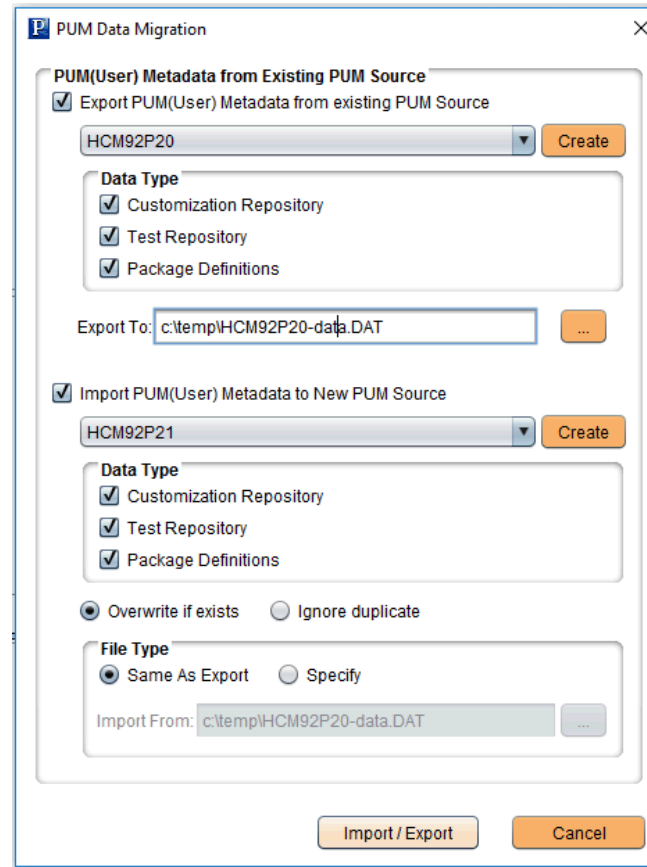
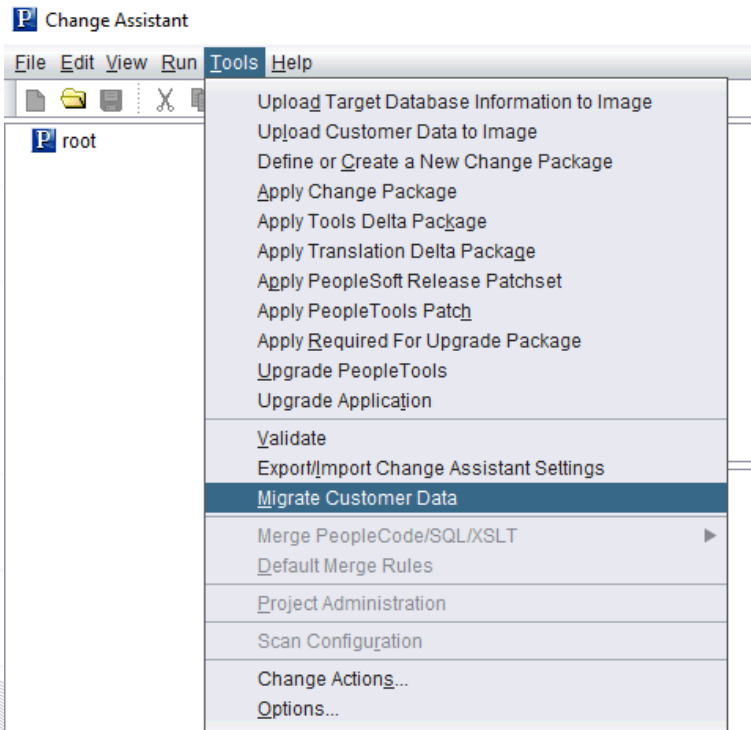
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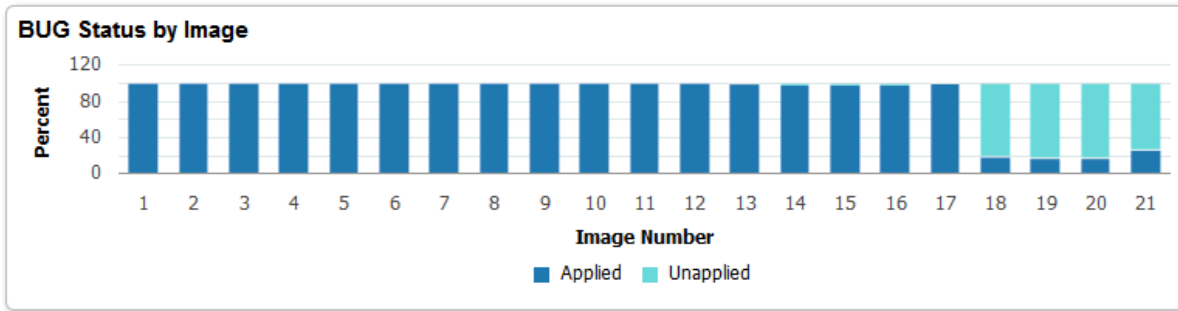
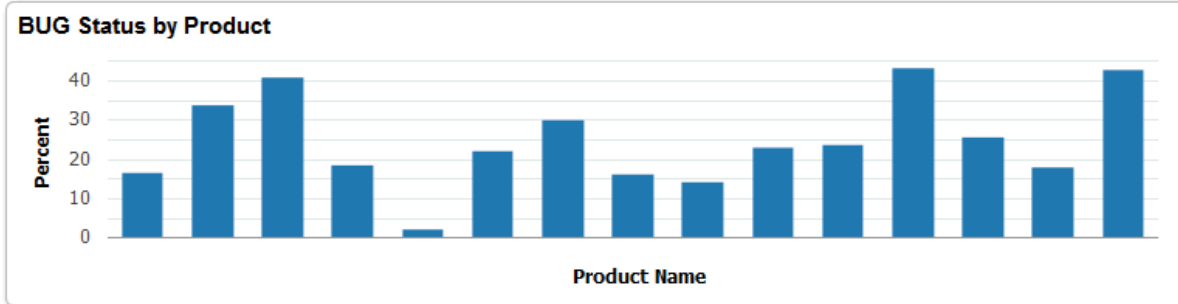
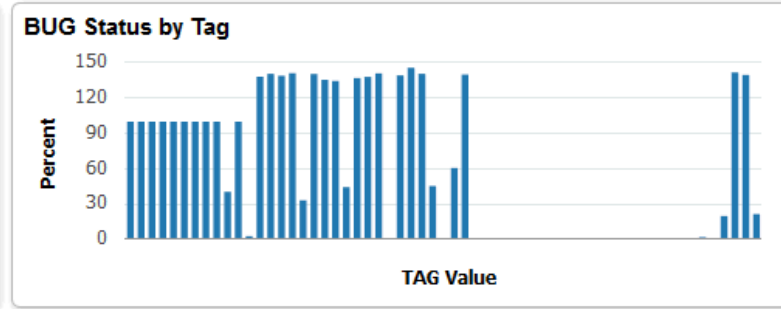
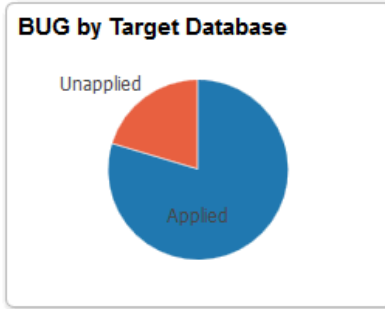
**#OHUG2017**

# Moving Customer Data to New PUM Images

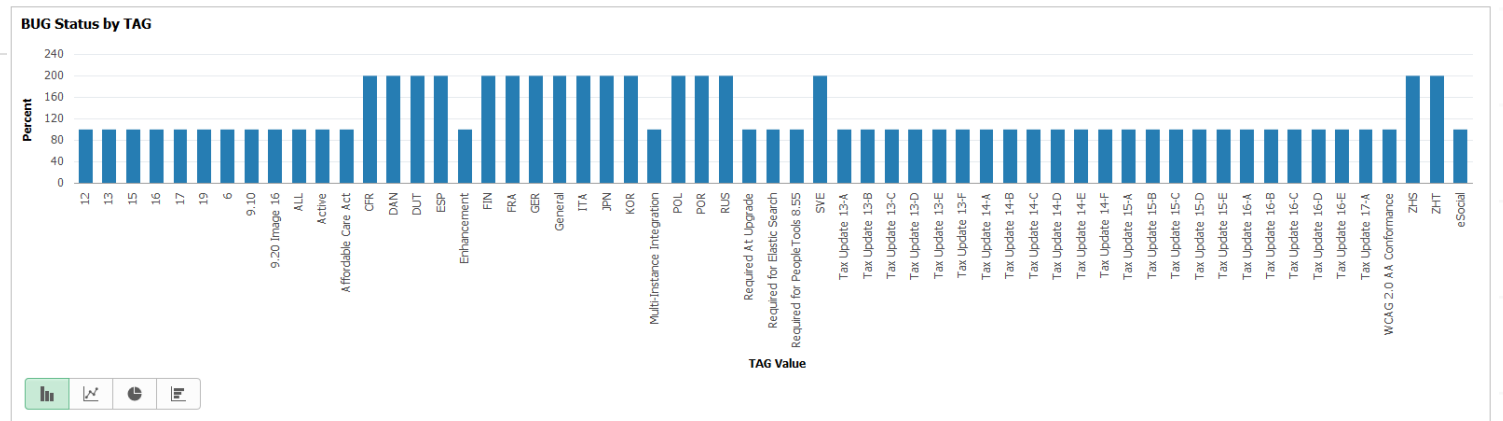
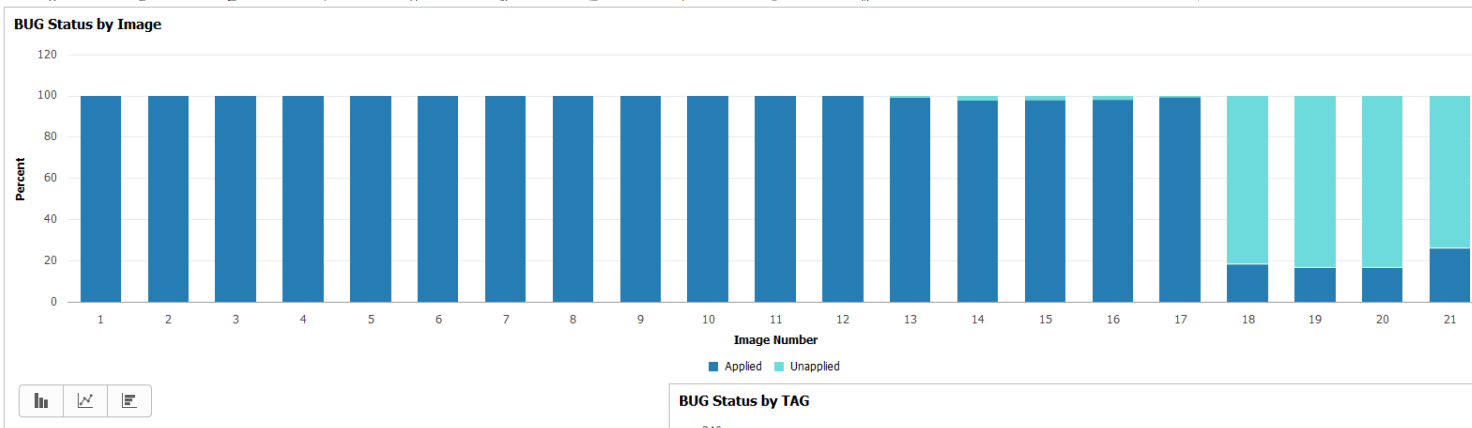
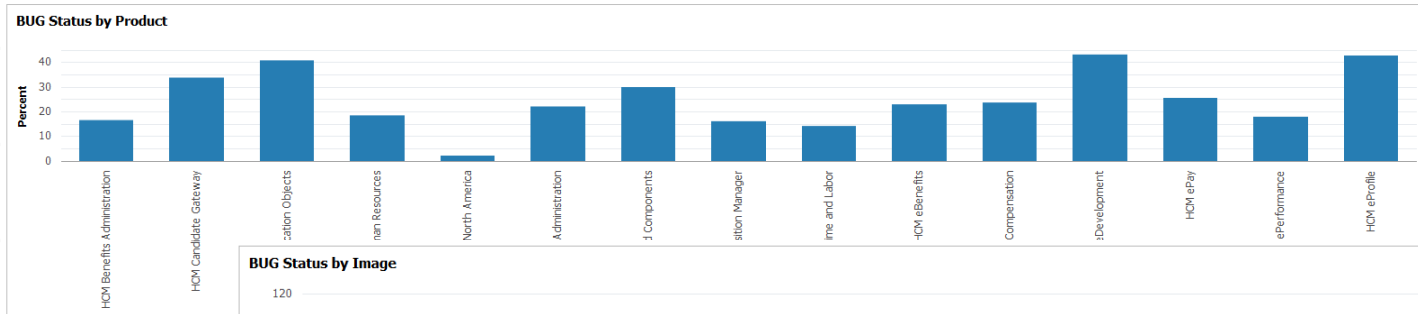
- » When a new PUM Image is released, the work done thus far can be preserved.
- » Packages can't be re-used, but are great for reference and patch history
- » Delivered functionality in Change Assistant allows for easy migration



# Charting Your Image Currency



# Charting Your Image Currency



# Conclusion

- » Keep current within a year or shorter
- » Don't waste time troubleshooting or fixing things which have already been corrected
- » Consider a dual-server architecture for image hosting/patching
- » Use the delivered tools for packaging
  - Use SQL and innovation to save time and improve flexibility
- » Populate and maintain the Customization Repository
  - Similar methods apply to the Test Repository



# Questions & Answers *(maybe)*



Scripts available at:  
<https://gist.github.com/frankjenn>

