

1 Strategic Development/Test Plan

The University of Waterloo is planning the upgrade of its Human Capital Management (HCM) 8.9 application to the most recent 9.1 version.

All customizations, interfaces, reports and business processes must be thoroughly tested, as there is a risk that they may be impacted by the changes made by PeopleSoft. Analysis will also be required to determine if any current customizations can be replaced during the upgrade due to new functionality.

The production environment will be frozen as of the end of the day on Monday, November 8th, 2010 to begin the process of creating a first test instance in HCM 9.1. To accomplish this freeze, all development in 8.9 must be signed off by the end of the day on Wednesday, November 3rd, 2010 so that migration can take place before the freeze.

All pay cycles, including off cycles, must be closed by the end of the day on Monday, November 8th. No paysheets will be open. The backup taken that evening at 11:00 PM will be sent to the Upgrade Lab to begin the process of creating the first test instance. That same back up will be used to create the 8.9 parallel test instance, HCUT.

HCUT will not be updated with bundles or tax updates that are applied to production after the freeze. It will remain “frozen” as well.

Only mission critical development will be done after the freeze. This development and testing will have to be done in 8.9 and then duplicated in 9.1. Specifics are included below in the Overall Approach section.

The SUN server that will be used for the 9.1 upgrade dev/test instances will be called mordak. Eventually the web servers and app servers will be set up in Linux, but this will not be done initially. The following database instances will be created and used during the upgrade.

| Instance | Description | Phase Instance Used |
|----------|--|--|
| HCUT | 8.9 parallel test | Unit testing and development |
| HRDV | 9.1 development | Unit testing and development |
| HRTS | 9.1 parallel test | Unit testing and development |
| HRQA | 9.1 quality assurance instance | Migration of unit testing development projects |
| HRWF | 9.1 workflow instance | Unit testing and development for recruitment and ELM |
| HRDM | 9.1 demo (no Detail Team access; only App Admin) | throughout |
| HRPG | 9.1 demo playground (Detail Team access) | Fit/Gap, unit testing and development |
| HRUG | 9.1 upgrade playground (no Detail | Playground for creation of |

| | | |
|------|-----------------------------|---|
| | Team access; only App Admin | subsequent upgrade instances after first one is provided by upgrade lab |
| HRPP | 9.1 pre-prod | Acceptance testing |
| HRPR | 9.1 production | Cutover |

1.1 Development & Test Strategy / Overall Approach:

All customization development required for the upgrade, and testing of those customizations will have a task in ACE Project to record the comments, statuses and sign off. These tasks will reside under the “HR-9.1 Upgrade” project in ACE Project. This methodology will remain the same as always when customizations are requested, developed and tested as documented under [The Software Development Life Cycle – Procedures and Guidelines](#) section of the TeamArea site.

1.1.1 Development

Development will be restricted to ensuring the customization/interface/report worked as it did before, unless a scope change is agreed upon by the HRMS Detail Team. If this scope change is significant enough that it could affect the upgrade timeline or resource commitment, and was not originally included in the upgrade scope, it must also be approved by the HRMS Management Team. Customizations/interfaces/reports will not be rewritten to use new technology unless significant upgrade changes are required or a scope change has been approved to add additional requirements/functionality requiring significant changes.

New customizations/interfaces/reports that are written during the upgrade will only use new technology (Application Engine, Component Interface, XML Publisher, Integration Broker). No new SQRs will be produced.

1.1.1.1 Change Management

There will be a new HCM 9.1 application set up within Change Management. All upgrade development projects will be added under this application. It will point to instances HRDV, HRTS and HRQA. Eventually, an application entitled HCM 9.1 TX will also be set up in Change Management for tax updates in 9.1.

1.1.1.2 SQR Development

The SQRs for 9.1 will be stored under a new sqr91 directory during the upgrade. The 9.1 instances will all be pointing to this directory during the upgrade. This directory will have its own RCS directory where the SQRs will be checked in, as they are in the current development environment.

Upon the freeze, the production version of all SQRs (as they exist in hr.hrms-1_prod/sqr002) will be copied to the sqr91 directory. Their corresponding RCS files will also be copied to the sqr91/RCS directory. Note, this will only copy the SQRs as of the freeze; they could go through changes due to production support by the time they are modified or tested for the upgrade. The same will be done for customized cobol and dms scripts.

The following steps are to be followed when developing SQRs in 9.1 during the upgrade timeframe:

1. Check if the SQR is in the sqr91 directory of the hr.hrms-1_dev package. If it is not there, copy it from the sqr002 directory of the hr.hrms-1_prod package.
2. Do a compare between the version of the SQR in the sqr91 directory with the version in the sqr002 directory of the hr.hrms-1_prod and hr.hrms-1_dev packages to ensure any changes made to the current production environment are reflected in the SQR you are about to modify and no other changes are in progress for production support. This is required to ensure that it is the production version of the SQR that you are about to modify for the upgrade.
3. Make the 9.1 changes to the SQR and test (you may have to check it out if other 9.1 changes were already made)
4. Set the SQR to be ready for functional testing in the ACE task after migrating the changes to the sqr91 directory in the hr.hrms-1_test package.
5. Upon sign off, check in the SQR through RCS in hr.hrms-1_dev and set up the project in Change Management.

Upon go live, the sqr91 directory will be renamed sqr002 and the instances will all point to it for SQR execution.

1.1.1.3 Cobol & DMS Customizations

The cobol customizations that were done in 8.9 will be handled in a similar manner as the SQRs. A cbl91 directory will be created and used during the upgrade for all cobol customizations. A dms91 directory will also be created and used during the upgrade for all DMS customizations. The procedures should remain the same as they are for the SQRs.

Upon go live, the cbl91 and dms91 directories will be renamed to cbl and dms and the instances will all point to them as before.

1.1.1.4 Dual Development for Production Support Changes After Freeze

Production changes that have to be made for production support in the 8.9 environment will have to go through a dual development path after the freeze on November 8th, 2010. It is the developer's responsibility to ensure that changes they make to the current production environment are also reflected in the 9.1 environment. If 9.1 development has not started on the object being changed, this dual development is relatively easy and you just update the object to reflect what was done. However, if 9.1 development has started on the object, then there will be analysis required to determine the best way to apply the modifications:

- If 9.1 development is in progress on the object, you will have to discuss your changes with the developer working on the 9.1 changes and determine the best way to merge the two versions.
- If 9.1 development was complete on the object and testing was signed off, you may still have to discuss your changes with the developer who did the 9.1 changes, depending on how complicated the modifications are. You will also have to ensure that the end users re-test the changes and sign off again.

The following steps should be followed when developing SQRs in 8.9 during the upgrade timeframe:

1. Check out the SQR in the sqr002 directory of the hr.hrms-1_dev directory
2. Make the changes and test
3. Set the SQR to be ready for functional testing in the ACE task after migrating the changes to the sqr002 directory in the hr.hrms-1_test package.
4. Upon sign off, check in the SQR through RCS. Submit the request for QA migration.
5. Apply the changes you have made to the SQR in the sqr91 directory. If 9.1 changes have already been made to this SQR, you may have to analyze differences between the two to determine if the 8.9 mods are still required and where they should be applied. If the SQR was already tested and signed off in the 9.1 environment, it has to be re-tested.

Application Designer objects must be handled by manually reproducing the app designer project in 9.1 – *projects should not be migrated from an 8.9 instance to a 9.1 instance*. It's important to note that the customization may not work in 9.1 exactly as it did in 8.9 so thorough analysis and testing is required before creating the project in the 9.1 instance.

1.1.2 Unit Testing

The focus of the unit testing during an upgrade is to ensure that the customization and/or business process works as it did before, not to ensure that the customization meets all business requirements. The business requirements were tested extensively before the customization was implemented. The exception to this is when the customization goes through a rewrite, as mentioned above, or the upgrade scope includes changes for new functionality/requirements.

The upgrade test strategy is to use a parallel environment as much as possible; data entry and processes are run in an 8.9 instance and duplicated in a 9.1 instance. The results are compared to ensure they match. Mismatches must be explained or fixed. An extensive development/test plan will be created with dependencies to identify tests that are to be done before any parallel data entry is done, during parallel data entry, and after the parallel testing is complete.

The following pay cycles will be processed for the payroll parallel:

| PayGroup | Pay RunID | Pay End Date |
|-----------------------|-----------|-------------------|
| BW, CAS | M23 | November 13, 2010 |
| BWP | M23 | November 20, 2010 |
| TPO | M23 | November 6, 2010 |
| All monthly paygroups | 1011 | November 30, 2010 |

A schedule of when to grab payroll interface files for the parallel testing is included in Appendix A.

Database links will not be set up for interface testing. The tables from those databases will be extracted from the source and imported into Oracle tables in the 9.1 test and development instances. The

exception to this is the student earnings interface which requires processes to be run in Campus Solutions and HCM.

Recruitment and ELM testing will take place in HRWF where workflow and recruitment approvals will be turned on. This is the only instance that will have workflow and approvals on. Before any testing is done, data changes must be made to ensure that emails are not sent to people on campus. The following changes have to be made (by selecting a few departments that will be used for testing):

1. The executive approvers table: all executives in the approval path for the departments chosen must have their email address changed to a project team member in personal data and on psoprdefn
2. Department heads on the department table must all have their email address changed to a project team member in personal data and on psoprdefn
3. Departments can have a roll up. If the departments chosen have a roll up, the email address of the department head for the roll up department must have their email address changed to a project team member in personal data and on psoprdefn
4. When setting up hiring teams against a job opening, only use project team members

Recruitment and ELM testing will not require a parallel 8.9 instance.

1.1.3 Acceptance Testing

Acceptance testing will take place with the creation of the final pre-prod instance. The cutover plan will be in place, as well as all UW conversions and customizations. This will be the integration testing and the cutover plan testing.

This testing should encompass all business processes, from start to finish. It is also an opportunity to start training end users in HR by bringing them over to go through the business processes and ensure everything is working as it should.

The Detail Team (in conjunction with the App Admins) will discuss whether 9.1 patches/fixes bundles and 9.1 required for upgrade bundles will be applied for the creation of the 9.1 acceptance testing instance.

A new pay cycle will be used for this testing since this will be created from a fresh snapshot of production. New interface files will have to be grabbed. Database links will be created as a test of the database link scripts that will have to be created for the new instance names.

1.2 Coverage Summary:

All customizations, interfaces, reports and business processes must be tested for the upgrade.

A fit/gap will be initiated for testing new functionality (as identified in the charter scope) and identifying any gaps that must be addressed.

1.3 Testing Responsibility:

Every department is responsible for testing their own functionality.

Detail Team members from Human Resources will be performing most of the unit testing.

There will also be people from The Safety Office, Centre for Teaching Excellence, Organizational & Human Development, Information Systems & Technology and Finance testing ELM, Budgets & Encumbrances, and bank reconciliation.

During acceptance testing, other end users outside of the Detail Team from Human Resources will be involved with testing business processes.

1.4 Testing Environment to be Used in Testing:

The testing will be done on the new development server (mordak) that is being purchased for the upgrade. It will be done in the most current version of IE and/or Firefox. Depending on the status of the desktop rollover, some testing may be done in Windows 7 and some testing may be done in XP.

The Tools version will be 8.51 and the Oracle database will be at a 10g level.

2 Appendix A: Interface File Schedule

This schedule indicates when various interface files have to be retrieved from production to be used during parallel testing.

Interface Abbreviation Legend

| Payroll Interfaces | | |
|-----------------------------|----------------------------|-------------------------------|
| ABI: Alumni biweekly input | AMO: Alumni monthly output | GLB: General Ledger BW output |
| ABO: Alumni biweekly output | BR: Bank Rec input | GLM: GL monthly output |
| AC: Account Code Load | DD: Direct Deposit output | PO: Plant Ops Input |
| AMI: Alumni monthly input | FS: Food Services Input | TR: Tuition/Residence input |

November 2010

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----------------------------|----------|--------------------------|-----|---------------------------|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 Freeze, AC | 9 *BR | 10 | 11 | 12 PO, ABI | 13 |
| 14 | 15 FS, AMI | 16 TR | 17 M23 Confirm, DD | 18 | 19 1011 Confirm, DD | 20 |
| 21 | 22 ABO, AMO, GLB, GLM | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

*Bank Rec must be run in HCPR after the freeze on November 8th so that it is not processed in the upgrade instance and we can run October's file for parallel testing.

Upon the freeze, all source tables that we access through dbase links will also have to be extracted from those production instances so that they can be imported into our dev/test instances as well. These source tables come from Quest and OGF.