IBM Business Process Management : *Archiving and Purging State of the Union*

Sept 2013

IBM BPM CTO Office

Questions or comments? Contact Phil Coulthard: coulthar@ca.ibm.com

Introduction

- Whenever data is persisted into a database, there comes a time when its important to clean up some of that data
- This saves disk space and improves performance
- This can involve moving old data to an archive, or just deleting it

IBM BPM Primary Data

IBM BPM persists the following data, of which you should consider an archiving and/or purging strategy:

1. **Repository data:**
   a. Process Center holds snapshots of process apps and toolkits as they are developed
   b. Process Server holds snapshots of process apps that have been deployed to it
2. **Process Instance data:**
   a. Process Server holds instances of BPD processes (standard) and tasks
   b. Process Server Advanced holds instances of BPEL processes and tasks
3. **Performance Data Warehouse data:**
   a. The Performance Data Warehouse holds event data collected from tracking groups
4. **The IBM Monitor product:**
   a. Holds event data, and holds data in a Cognos data warehouse.

IBM BPM Secondary Data

IBM BPM also persists the following additional data, but it is a significantly smaller amount:

5. **BPM Standard: IBM Document Store**
   a. Built-in store for document attachments

6. **BPM Standard: Durable Events**
   a. Durable subscription events for intermediate messages

7. **BPM Standard: temp Folder**
   a. System temporary folder (%temp%)

IBM BPM Archiving and Purging

The story for purging and archiving across these data stores is different, and sometimes different by release

This documents the state of the union, including where deleting or purging is not possible today

<u>History of this document</u>

March 2013: release 1 covering up to 8.0.1.1

April 2013: added 8.5.0 coverage

Sept 2013: updates to all sections, adding screen shots, details, etc

AGENDA

- Introduction
- **Process Center**
- Process Apps and Toolkits Lifecycle
- Process Instances
- Performance Data Warehouse
- IBM Business Monitor
- Secondary Data
- WebSphere Logs
- Summary

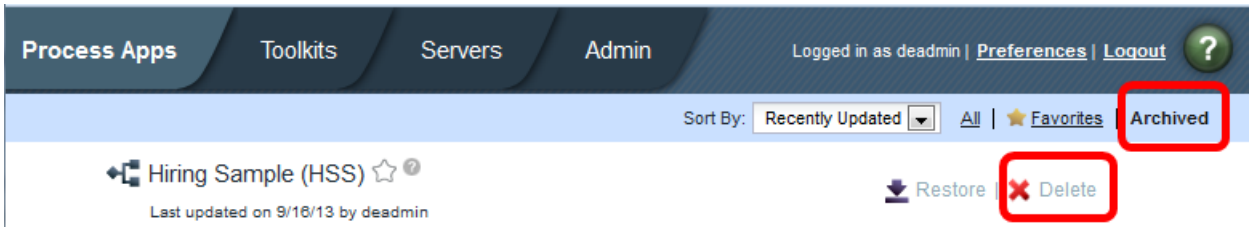
Archiving and Purging in Process Center

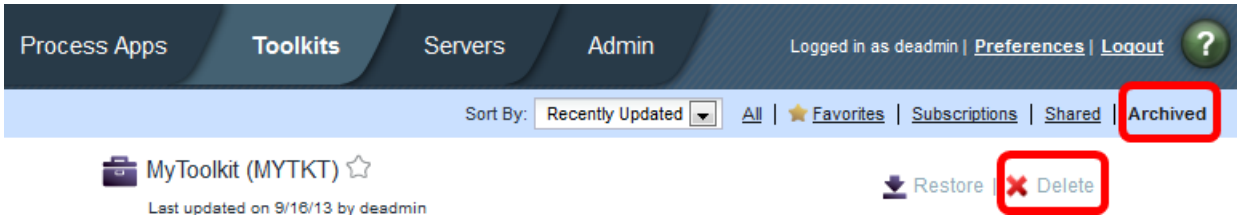
- Process Center holds snapshots of process apps and toolkits as they are developed. In addition to every named snapshot you create, every time you save in Process Designer, an “unnamed” snapshot is created.
- Process Server holds named snapshots of PAs that have been deployed to it
- There is some support for purging, or removing shown in table
  - Exports do not include unnamed snapshots … so re-importing into a new PC configuration is another way to achieve the effects of a PC purge

Function	Process Center	Process Server Online[1]	Process Server Offline[1]
Remove PA or TK	7.5.1 + (UI Only)	n/a – only snapshots	n/a – only snapshots
Delete Snapshot - Remove snapshot	**BPMSnapshotCleanup** **8.5 +**	BPMDeleteSnapshot 8.0.1 +	BPMDeleteSnapshot 8.0.1 +
Remove unnamed snapshot	**BPMSnapshotCleanup** **8.5 +**	n/a – only named snapshots	n/a – only named snapshots

[1]**Note:** *Process Server is covered in next section*

Deleting PA / Toolkit in Process Center





- IBM BPM 7.5.1 introduced a way in the Process Center user interface for deleting archived Process Apps and Toolkits:
  - Go to the Process Apps and Toolkits list and choose to look at Archived projects
  - Select the Delete action
- Deleting the Process App will
  - Delete all the snapshots
  - Delete all instances.
  - Undeploy all advanced artifacts

Deleting Snapshots in Process Center

http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r5m0/topic/com.ibm.wbpm.ref.doc/topics/rref_bpmsnapshotcleanup.html

- One way to delete *unnamed* snapshots only, is to export the named snapshot into a .twx file, and then re-import that snapshot into a fresh or different Process Center. Unnamed snapshots are not exported.

- IBM BPM 8.5.0 introduced wsadmin command **BPMSnapshotCleanup** for deleting Process App and Toolkit snapshots.
- This new command can delete both named and unnamed snapshots
  - Unnamed snapshots are created every time a developer saves in Process Designer, and can quickly accumulate.
  - Named snapshots must be archived first, before they can be deleted
- Notes:
  - You cannot delete the first snapshot of a process app.
  - You must run the BPMSnapshotCleanup command at specified intervals when there are no operations on the Process Center and no connections between the Process Designer and the Process Center.
  - See information center for parameters and syntax

Deleting Advanced and Monitor Content

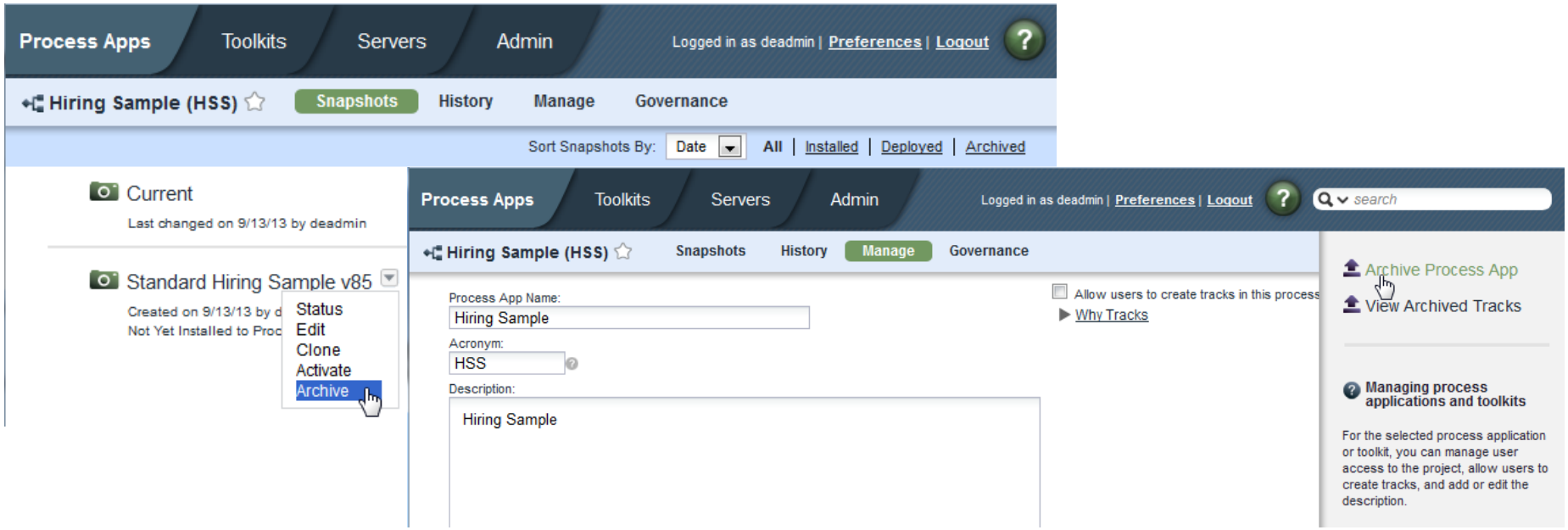
In a Process Center, archival of the Process App as of 8.0.1 causes the IBM BPM Advanced Edition Business Level Application (BLA) to be uninstalled and deleted. Since the PC is in development mode, uninstall of SCA BPELs will cause instances to be deleted.

- By the time you do the delete the advanced content is already gone because it's cleaned up during archive.

IBM Business Monitor models will be left around on a process app archive and delete. You will need to manually delete these via the admin console.

- Only applicable if you have purchased IBM Business Monitor and augmented IBM BPM with it.

“Archiving” Within Process Center



- Today’s archiving support in the Process Center does not do a “real” archive … ie it does not move the data to a secondary location.
  - It just marks the data such that it is does not appear in the user interface.
- You can archive either individual snapshots or the entire process app or toolkit
- Archive and restore archived snapshots on the Snapshots page
- Archive and restore archived process apps or toolkits on the Manage page
- There is no command line way to drive archiving, its only possible via the UI

True Archiving Of Snapshots in PC

- If you truly want to archive … that is, move the Process Application or Toolkit to a secondary storage location :
  - Export one or all PA and TK snapshots as twx files and store them in whatever medium is appropriate
  - Archive and then delete the snapshots or project from the Process Center:
    - Using BPMSnapshotCleanup if that is supported on your release
    - Or using Process App or Toolkit delete capability on archived projects

Function	Process Center Release
Export PA or TK – via UI or BPMExport wsadmin command	UI always supported, BPMExport added in 7.5.1
Archive PA or TK – via UI only	UI always supported
Delete PA or TK – via UI only	UI support added in 7.5.1

AGENDA

- Introduction
- Process Center
- **Process Apps and Toolkits Lifecycle**
- Process Instances
- Performance Data Warehouse
- IBM Business Monitor
- Secondary Data
- WebSphere Logs
- Summary

Process Application Lifecycle – wsadmin 751+

http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r5m0/topic/com.ibm.wbpm.ref.doc/topics/welc_ref_adm_script.html

BPMImport - *Import PA or TK into PC*

BPMExport - *Export PA or TK into PC*

BPMSnapshotCleanup *– periodic maintenance on PC (850)*

BPMInstall - *Install PA Snapshot to non-production PS*

BPMActivate | BPMDeactivate – *Activate | Deactivate PA Snapshot in PS*

BPMStop and BPMUndeploy – *Cleaning up Adv content in PS*

BPMDeleteSnapshot – *periodic UAT, QA, prod maintenance in PS (801)*

BPMCreateOfflinePackage – *Create package for production install*

BPMExtractOfflinePackage – *Download package for production install*

BPMCheckOrphanTokens – *Check for potential orphaned tokens (800, enh'd 801)*

BPMInstallOfflinePackage – *Install to production*

BPMProcessInstancesCleanup – *BPD instances only (801)*

General Utility wsadmin Commands – 7.5.1+

http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r5m0/topic/com.ibm.wbpm.ref.doc/topics/welc_ref_adm_script.html

1. **BPMListProcessApplications** - *List PAs and TKs*
2. **BPMListServers** - *List Process Servers*
3. **BPMShowProcessApplication** - *Show details of PA or TK*
4. **BPMShowServer** - *Show details of Process Server*
5. **BPMShowSnapshot** - *Show Snapshot Details*

Deleting Snapshots in Process Server

The following preconditions must exist for any snapshot that you want to delete via BPMDeleteSnapshot:

1. The snapshot must exist –
   - Run the BPMShowProcessApplication command to determine whether the snapshot exists for the process application.
2. The snapshot cannot be the default snapshot
   - Run the BPMShowSnapshot command to determine the status of the snapshot, such as whether it is the default snapshot and whether it is active with running instances.
3. The snapshot must be inactive
   - Run the BPMDeactivate command to deactivate the snapshot.
4. The snapshot must have no running instances
   - Run the BPMStop command to stop the snapshot and its running instances.
5. The BPM Advanced content in the snapshot must not be deployed
   - Run the BPMUndeploy command to undeploy the advanced content (EARs and BLA) that are related to the snapshot. There must not be any active BPEL process instances for this to work.
   - **NOTE:** BPM Standard content is *installed / uninstalled*, while BPM Advanced content is *deployed / undeployed*.

Advanced Only

AGENDA

- Introduction
- Process Center
- Process Apps and Toolkits Lifecycle
- **Process Instances**
- Performance Data Warehouse
- IBM Business Monitor
- Secondary Data
- WebSphere Logs
- Summary

Process Instances

- **There are two things to think about wrt instances:**
  1. User/Human task instances. These are associated with a process instance
  2. Process instances. These are persisted even after the process completes, for populating dashboards / reports, etc. When deleted, any associated task instances are also deleted.

- **There are two types of processes to consider:**
  1. IBM BPM Standard processes, or Business Process Definitions (BPD), which are authored in BPMN using Process Designer.
  2. IBM BPM Advanced processes, which are authored in BPEL using Integration Designer

Archiving Task Instances – BPM *Standard*

- **Archiving BPM Standard Task Instances**:
  - Archiving is not supported formally in product , for BPM Standard user task instances

Purging User Task Instances – BPM *Standard*

- **Purging BPM Standard Task Instances**:
  - From TeamWorks 6.1.x and above:
    - Interactively, use Process Admin Console's Task Cleanup Utility.
    - Also where you can delete uploaded attachments

Option	Description
Clean up attachments that are associated with deleted tasks or that have been orphaned.	This option removes only attachments and not tasks.
Clean up tasks and attachments where every user in the history tree has deleted the task from their task list.	This option removes tasks and attachments.
Clean up tasks and attachments where every user in the history tree has deleted the task from their task list or the task resides in the user SENT folder.	This option removes tasks and attachments.
Clean up tasks and attachments where every user in the history tree has deleted the task from their task list or the task resides in either user SENT or CLOSED folders.	This option removes tasks and attachments.

    - Or, delete parent process instances (coming slide)

BPM Standard Task Cleanup Utility

IBM. Process Admin Console | Server Admin | Process Inspector | Installed Apps | Logged in as deadmin | Preferences | Logout

- IBM BPM Admin
  - Manage Caches
  - Task Cleanup
- User Management
- Monitoring
- Event Manager
- Admin Tools
- Saved Search Admin

IBM BPM Admin > Task Cleanup

Select a Cleanup Option

- (selected) Clean up attachments that are associated with deleted tasks or that have been orphaned.
- Clean up tasks and attachments where every user in the history tree has deleted the task from their task list.
- Clean up tasks and attachments where every user in the history tree has deleted the task from their task list or the task resides in the user's SENT folder.
- Clean up tasks and attachments where every user in the history tree has deleted the task from their task list or the task resides in either the users' SENT or CLOSED folders.

Current Counts	
Tasks	3
Attachments	0

Cleanup

After Cleanup Counts	
Tasks	0
Attachments	0

- - WARNING - -

This page will delete IBM BPM tasks and attachments for ALL users in order to minimize the space being utilized by IBM Business Process Manager.

IBM.

Purging Process Instances – BPM *Standard*

- **Purging**:
  - From TeamWorks 6.1.x and above:
    - Using stored procedure LSW_BPD_INSTANCE_DELETE, which takes a BPD instance ID as the input parameter, removing both the BPD instance and any associated task instances.
  - In addition, as of BPM 8.0.1:
    - BPMProcessInstancesCleanup is the command which allows deletion of multiple COMPLETED | FAILED | TERMINATED instances and also has support for deleting instances from within a time range.

Recommendation: don't run either of these while server is very busy.

- **Archiving**:
  - Archiving is not supported formally in product

LSW_BPD_INSTANCE_DELETE Stored Proc

http://pic.dhe.ibm.com/infocenter/dmndhelp/v7r5m1/topic/com.ibm.wbpm.admin.doc/adminguide/topic/removing_proc_instances_db.html

Use this prior to 8.0.1

IBM Business Process Manager, Version 7.5.1, Multiplatforms > Administering IBM Business Process Manager > Administering the IT infrastructure > Managing IBM Process Servers > Managing Process Server caches and databases

Removing process instances from the Process Server database

To prevent disk-space issues and long waits in Process Portal, use the LSW_BPD_INSTANCE_DELETE stored procedure to remove all runtime data in the Process Server database that is associated with a completed business process definition (BPD) instance.

Before you begin

Run the query during an off period or maintenance window. When thousands of instances and data are purged, this process might cause a strain on the LSW_TASK and LSW_BPD_INSTANCE tables, which are core product tables. Running a clean-up job outside of normal business hours is a good practice.

If you want to archive data rather than deleting it, copy the data into a custom-built table outside of the product schema.

About this task

Completed BPD instances are not deleted from the system automatically. After a process instance is completed, the instance is typically no longer needed, so it can be removed from the Process Server database. Use the LSW_BPD_INSTANCE_DELETE stored procedure to delete old instances.

When an instance completes and all of its associated tasks are closed, future work is not possible with the instance. You cannot restart it, assign it to someone, or edit old work. When a user logs in to Process Portal, various tables are queried to gather data on the active tasks for that user. The operation involves full table scans, so even if only 35% of the data is relevant, it is going to take a while to pull the tasks needed for the user. If the other 65% is deleted, there is less data to scan.

If you do not delete the old completed instances, your team experiences slow performance on Process Portal and a potentially unusable state. Ignoring increases in database size cause an increase in backup time and disk space.

Deleting old instances affects only the search for history items from the Process Portal inbox. When you run the delete queries, you can specify to delete only completed tasks that are older than 30 days. Store any data that you really need in either the performance database or in another system of record for auditing or metrics.

How often you delete old instances depends on the following factors:

- How many instances are closed in a specified time period (for example, a week or month)
- How large the data is in each task (including execution context and document attachments)
- How many tasks there are in a process instance

Watch for performance iFix JR46453

BPMProcessInstancesCleanup Command

http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r0m1/topic/com.ibm.wbpm.ref.doc/topics/rref_BPMProcessInstancesCleanup.html

Use this after 8.0.0

IBM Business Process Manager, V8.0.1, All platforms > Reference > Commands and scripts > Commands (wsadmin scripting)

BPMProcessInstancesCleanup command

Use this command to delete business process definition (BPD) instance data for a process application snapshot on IBM® Process Server.

Parameters

-containerAcronym *containerAcronym*

A required parameter that identifies the acronym that specifies the process application to perform process instance cleanup against. For example, the BillingDispute process application might have an acronym of BILLDISP.

-containerSnapshotAcronym *containerSnapshotAcronym*

A required parameter that identifies the snapshot acronym for the process application. The snapshot acronym can be different from the snapshot name. To find the snapshot acronym, run the BPMShowProcessApplication command. Refer to the topic in the related link.

-instanceStatus *instanceStatus*

A required parameter that identifies the status of process instances to clean up.

- COMPLETED - Removes all completed process instances
- FAILED - Removes all failed process instances
- CANCELED - Removes all terminated process instances
- ALL - Removes all completed, failed, and canceled process instances

Tip: You cannot delete an instance that is currently running.

Watch for additional parameters to come

-instanceID *instanceID*

An optional parameter of type `String[]` that identifies the number of instance IDs that are being removed. If there is more than one instance ID, each instance ID must be delimited by a space for Jython format commands or a semicolon for JACL format commands. You can also use this parameter with **endedAfterLocal** or **endedBeforeLocal**. See the examples in this topic.

-endedAfterLocal *endedAfterLocal*

An optional parameter of type `String` that identifies the local time on the server. The string must have the following format:`yyyy-MM-ddThh:mm:ss` (year, month, day, T, hours, minutes, seconds). Only instances that completed, failed, or canceled after the specified time period by this parameter are processed. If you use this parameter with the **endedBeforeLocal** parameter, only instances that completed, failed, or canceled during the specified time period by this parameter are processed.

-endedBeforeLocal *endedBeforeLocal*

An optional parameter of type `String` that identifies the local time on the server. The string must have the following format: `yyyy-MM-ddThh:mm:ss` (year, month, day, T, hours, minutes, seconds). Only instances that completed, failed, or canceled after the specified time period are processed. If you use this parameter with the **endedAfterLocal** parameter, only instances that completed, failed, or canceled during the specified time period by this parameter are processed.

-outputFileoutputFile

An optional parameter that provides a qualified file path to write the process instance cleanup log entries. The default is systemout.log.

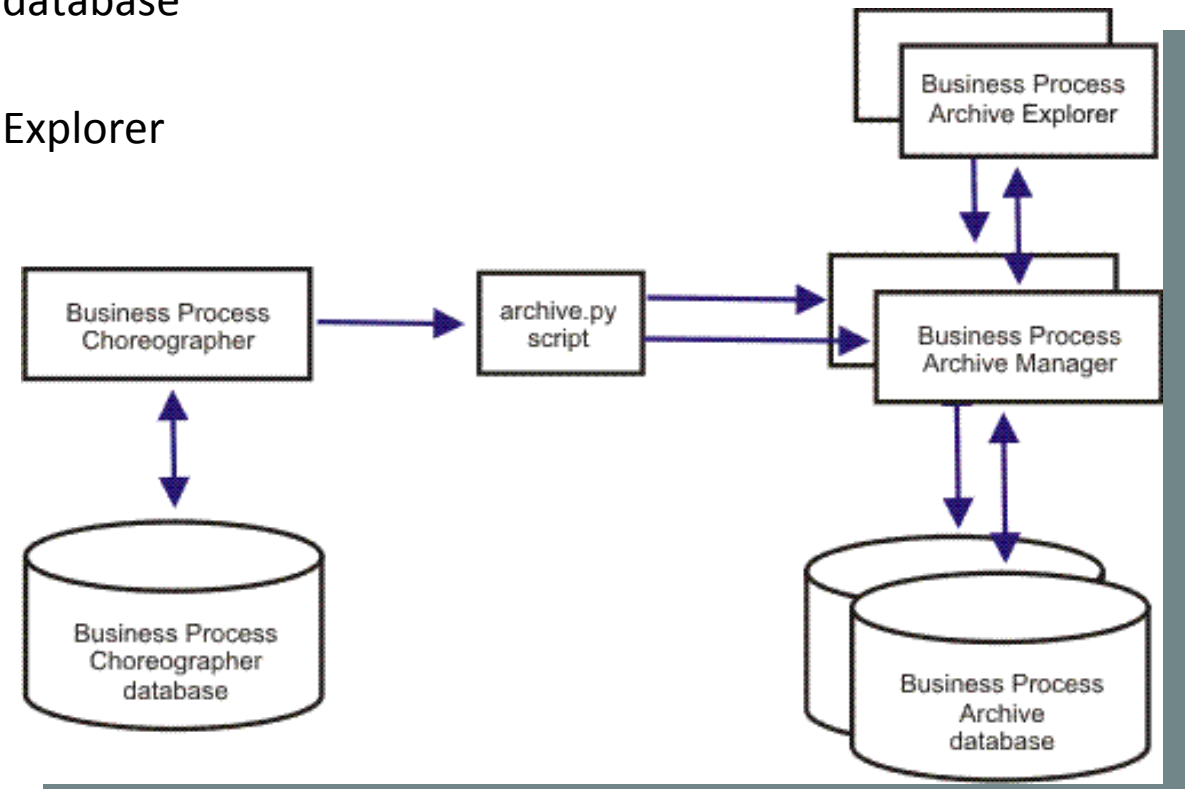
Purging Process Instances – BPM Standard *Continued*

- **Purging of Process Instances removes**:
  - Process Instances:
    - In state of COMPLETED or FAILED or TERMINATED
    - Optionally that finished within a given time range
  - Task Instances:
    - Associated with the deleted process instances
  - Attachments:
    - Associated with the instances
  - Dynamic Groups:
    - Associated with the instances

Archiving Process Instances in BPM *Advanced* -

http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r0m1/index.jsp?topic=%2Fcom.ibm.wbpm.imuc.doc%2Ftopics%2Fc5_archive.html

- The business process archiving facility consists of :
  - **Business Process Archive Manager** and **Business Process Archive Manager API**
  - Business Process Archive database
  - The archive.py script
  - Business Process Archive Explorer



Purging Process and Task Instances in BPM *Advanced* : BPEL Processes in WPS 6.1

- Options for deleting completed process instances in WPS 6.1 ...
  - Deletion of completed instances can be specified when defining business process or human task time in WID.
  - Completed process instances can be deleted administratively either using the ***deleteCompletedProcessInstances*** script, or using the corresponding MBean interface.
  - Administrators can use the WPS BPC Explorer to delete selected instances (not ideal for handle large numbers of instances).
  - BPC APIs (EJB/JMS/Web Services/REST) allow deleting instances.

Purging Process and Task Instances in BPM *Advanced* : BPEL Processes in 7.0 +

*Scheduled deletion of completed instances via **Cleanup Service***

http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r0m1/topic/com.ibm.wbpm.bpc.doc/topics/tadmin_cleanup.html

- With WPS 6.2 + and IBM BPM 7.5.0 or above…
  - The ***Cleanup Service*** first introduced in 6.2 for scheduled deletion of instances
  - It simplifies maintenance of *business processes* and *human tasks* by allowing to specify administratively which instances should be deleted and when
  - Enhanced in 7.0 such that it can be changed at runtime without server restart
  - Completed task instances can also be deleted either using the ***deleteCompletedTaskInstances*** script, or using the corresponding MBean interface.

Scheduled deletion of completed instances

Configuration of Cleanup Service

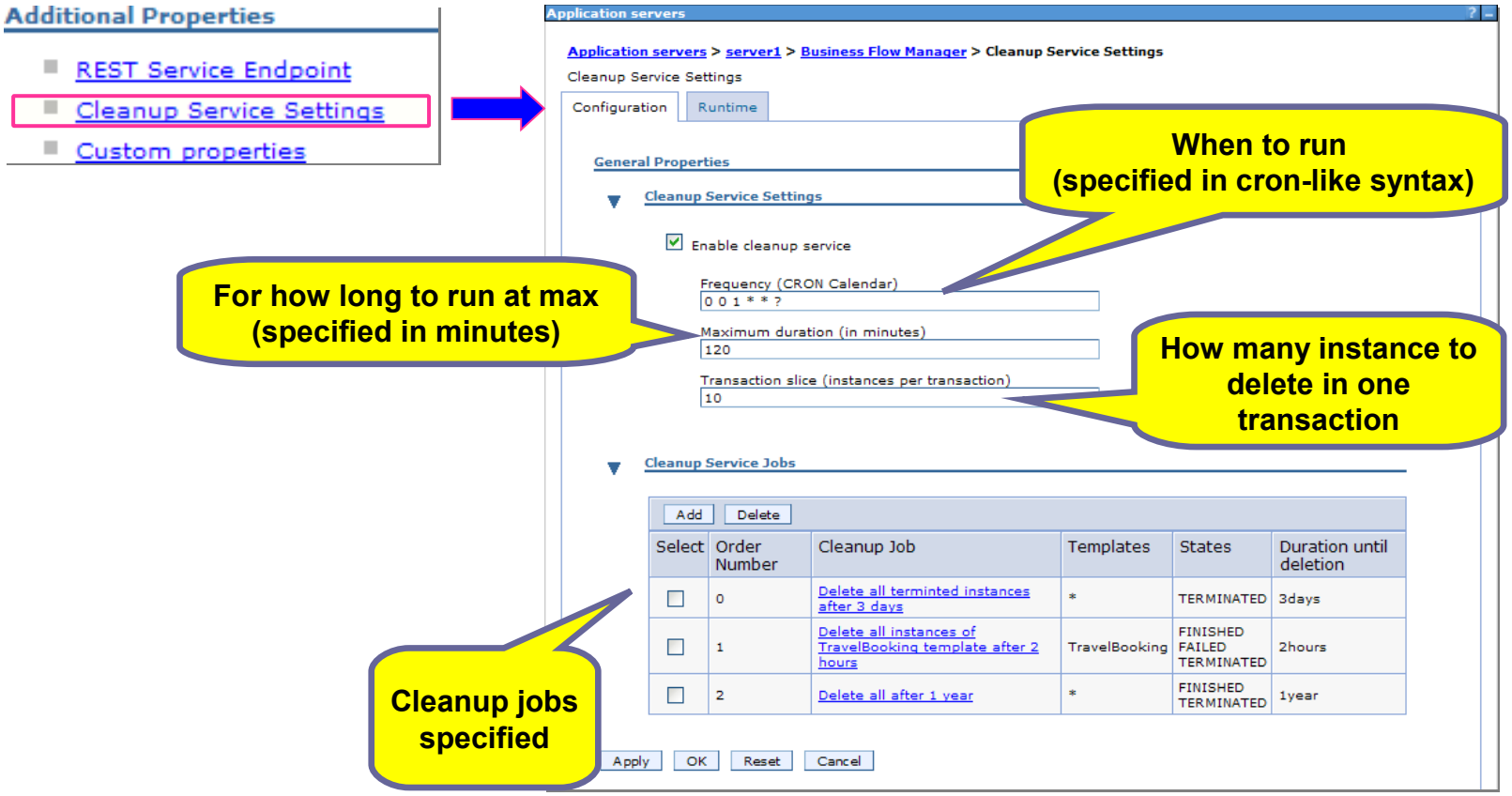
- Cleanup Service configuration specifies:
  - **When** the cleanup service should run
  - For **how long** the cleanup service should run
  - **How many** instances it should delete within one transaction
  - **Which instances** are to be deleted – specified via cleanup jobs

- A single Cleanup Job configuration specifies:
  - Template name(s) of instances to be deleted by this job
    - "*" means any templates
  - End state(s) the instances need to be in to apply to this cleanup job
  - For how long instances should be kept after completion before becoming eligible for deletion by the cleanup service

Scheduled deletion of completed instances

Configuration of Cleanup Service

- Specified in the Admin Console on the Business Flow Manager configuration pane for process instances, and on the Human Task Manager configuration pane for human tasks



Scheduled deletion of completed instances

Configuration of Cleanup Jobs

Cleanup Service Jobs

Add | Delete

Select	Order Number	Cleanup Job	Templates	States	Duration until deletion
☐	0	Delete all terminted instances after 3 days	*	TERMINATED	3days
☐	1	Delete all instances of TravelBooking template after 2 hours	TravelBooking	FINISHED FAILED TERMINATED	2hours
☐	2	Delete all after 1 year	*	FINISHED TERMINATED	1year

Apply | OK | Reset | Cancel

List of all Cleanup Jobs

During a Cleanup Service run, these jobs are executed in the order as specified in the list.

Application servers

Application servers > server1 > Business Flow Manager > Cleanup Service Settings > Cleanup Service Jobs

Configuration

General Properties

Order Number: 0

Cleanup Job: Delete all terminted instances after 3 days

Templates: *

Template name(s) of instances to delete. (* = any templates)

Cleanup States

Restrict cleanup to instances in the following states:

- ☐ FINISHED
- ☑ TERMINATED
- ☐ FAILED

End state(s) of the instances

Duration Until Deletion

Minutes: 0
Hours: 0
Days: 3
Months: 0
Years: 0

Apply | OK | Reset | Cancel

Age of the instance until deleted

In this example, instances are kept for three days after their termination.

Archiving & Purging BPEL Instances – Links into InfoCenters

Archiving :

- WPS 7.0 BPEL Process Archiving:
  http://publib.boulder.ibm.com/infocenter/dmndhelp/v7r0mx/topic/com.ibm.websphere.bpc.doc/doc/bpc/c5_archive.html
- IBM BPM Advanced 7.5.1 BPEL Process Archiving:
  http://publib.boulder.ibm.com/infocenter/dmndhelp/v7r5m1/topic/com.ibm.wbpm.imuc.doc/topics/c5_archive.html
- IBM BPM Advanced 8.0.1 BPEL Process Archiving:
  http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r0m1/index.jsp?topic=%2Fcom.ibm.wbpm.imuc.doc%2Ftopics%2Fc5_archive.html
- IBM BPM Advanced 8.5.0 BPEL Process Archiving:
  http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r5m0/topic/com.ibm.wbpm.imuc.doc/topics/c5_archive.html

Purging :

- IBM BPM Advanced 7.0 BPEL Process Purging:
  http://pic.dhe.ibm.com/infocenter/dmndhelp/v7r0mx/topic/com.ibm.wbpm.bpc.doc/topics/tadmin_cleanup.html
- IBM BPM Advanced 7.5.1 BPEL Process Purging:
  http://pic.dhe.ibm.com/infocenter/dmndhelp/v7r5m1/topic/com.ibm.wbpm.bpc.doc/topics/tadmin_cleanup.html
- IBM BPM Advanced 8.0.1 BPEL Process Purging:
  http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r0m1/topic/com.ibm.wbpm.bpc.doc/topics/tadmin_cleanup.html
- IBM BPM Advanced 8.5.0 BPEL Process Purging:
  http://pic.dhe.ibm.com/infocenter/dmndhelp/v8r5m0/topic/com.ibm.wbpm.bpc.doc/topics/tadmin_cleanup.html

Archiving & Purging BPEL Instances – Good article series on DeveloperWorks

Good article series on DW:

http://www.ibm.com/developerworks/websphere/library/techarticles/1105_weiser/1105_weiser.html

developerWorks Technical topics Evaluation software Community Events Search developerWorks

developerWorks > Technical topics > WebSphere > Technical library >

Operating a WebSphere Process Server environment, Part 4: Archiving considerations for WebSphere Process Server

Andre Weiser (aweiser@de.ibm.com), Software Developer, IBM

Summary: Part 4 of this 4-part article series on "Operating a WebSphere Process Server environment" explains different aspects of archiving for WebSphere® Process Server. It outlines the differences between archiving, monitoring, and auditing and discusses different solutions. The article also provides best practices on how to implement archiving in special user scenarios and usage patterns, and what and how process instance and task data can be archived, copied, or held prior to instance deletion.

View more content in this series

Date: 11 May 2011
Level: Intermediate
PDF: A4 and Letter (973KB | 22 pages) Get Adobe® Reader®
Also available in: Portuguese

Activity: 5763 views
Comments: View | Add comment - Sign in)

Average rating (4 votes)
Rate this article

AGENDA

- Introduction
- Process Center
- Process Apps and Toolkits Lifecycle
- Process Instances
- **Performance Data Warehouse**
- IBM Business Monitor
- Secondary Data
- WebSphere Logs
- Summary

Archiving Performance Data Warehouse

- No product support for archiving PDW data
  - Not in any release at this time

- There is a tool to “Archive” data, which just updates a column to exclude data from queries (similar to Process Center’s snapshot “archive” action). This form of archive / unarchive is done using the **perfDWTool** as documented in the Information Center:
  - http://publib.boulder.ibm.com/infocenter/dmndhelp/v7r5m1/index.jsp?topic=%2Fcom.ibm.wbpm.admin.doc

Purging Performance Data Warehouse

- No product support for purging PDW data
  - Not in any release at this time

- There is a tech note describing how to drop the PDW tables and recreate them, applicable up to WLE 7.2 :
  - http://www-01.ibm.com/support/docview.wss?uid=swg21497392
- There is a tech note for IBM BPM 7.5.0 or later, on how to drop *all* the tracking data in the PDW tables:
  - http://www-01.ibm.com/support/docview.wss?uid=swg21612755

… watch this space …

AGENDA

- Introduction
- Process Center
- Process Apps and Toolkits Lifecycle
- Process Instances
- Performance Data Warehouse
- **IBM Business Monitor**
- Secondary Data
- WebSphere Logs
- Summary

Archiving & Purging in IBM Monitor

- IBM Business Monitor has a scheduled service to purge and archive instances older than specified value

WebSphere. software | Welcome admin | Help | Logout | IBM.

View: All tasks

- Welcome
- Guided Activities
- Servers
- Applications
  - New Application
  - Application Types
  - Monitor Models
  - Monitor Services
    - Monitor Action Services
    - Recorded Event Management
    - Monitor Scheduled Services
  - Global deployment settings
- Services
- Resources
- Security
- Environment
- System administration
- Users and Groups
- Monitoring and Tuning
- Troubleshooting
- Service integration
- UDDI

Cell=jalcorn-w530Cell, Profile=MonBPM | Close page

Monitor Scheduled Services

Monitor Scheduled Services > MortgageLendingBAMShowcase > Scheduled Services > Purge and Archive Instance Data > Versions > MortgageLendingBAMShowcase (2008-09-18T06:00:00)

Use this page to specify the end time span for purging instances. You can also indicate that you want to archive the purged instances and in which directory to store them on the server. You can also specify whether to append to an existing file and the maximum file size.

General

General Properties

Time Filter

How do you want to specify which monitor instance data to purge?

Purge instances with a termination time older than

365 Days 0 Hours 0 Minutes

Archive

☑ Archive purged instance to a directory on the server (CSV files).

Full path

Browse...

Maximum File Size 20 MB

☑ Append to existing file

Apply | OK | Reset | Cancel

Archiving & Purging in IBM Monitor

- Scheduled service (*run, say, at 3 AM each day*) will remove instances older than your specified data retention policy (*available since Monitor 6.1*) :
  - Archives to CSV files (that you could import to a data warehouse), then purges
  - Only archives/purges terminated instances – never removes in-flight instances, regardless of age
  - Doesn't offer policies other than time, such as keeping data for gold customers forever, but purging data for bronze customers after 3 months
    - Would require a custom script/stored procedure to do this

Business Monitor Data Considerations

- The Monitor database grows proportionally to the number of instances of the thing being monitored (such as BPD instances)
  - Roughly: (# of instances per day) * (sum of all metric sizes) * (# of days)
    - With a million process instances per day, and 5K of data tracked per instance on average, and a 90 day retention policy, that's 450 GB
    - <company A> processes millions of instances per hour – one per customer transaction (a WMB flow for each – events sent over MQ)
  - Dashboards get slower to load as more data piles up
    - Starts around 10 million rows in the table

AGENDA

- Introduction
- Process Center
- Process Apps and Toolkits Lifecycle
- Process Instances
- Performance Data Warehouse
- IBM Business Monitor
- **Secondary Data**
- WebSphere Logs
- Summary

Internal Document Store

for heritage coach attachments

- Heritage Coach document attachments store :
  - **No *separate* archiving/purging story today.**

- Documents associated with a process instance are deleted together with the process instance

- You can also use the **TWDocument** javascript method **deleteAllVersions()** to delete a given document.

Internal Document Store 8.5

for NG coach attachments

- New embedded content store added in IBM BPM 8.5.0 :
  - Replaces the old document store (except on z) and supports both heritage and NG coaches
  - **No *separate* archiving / purging story today**

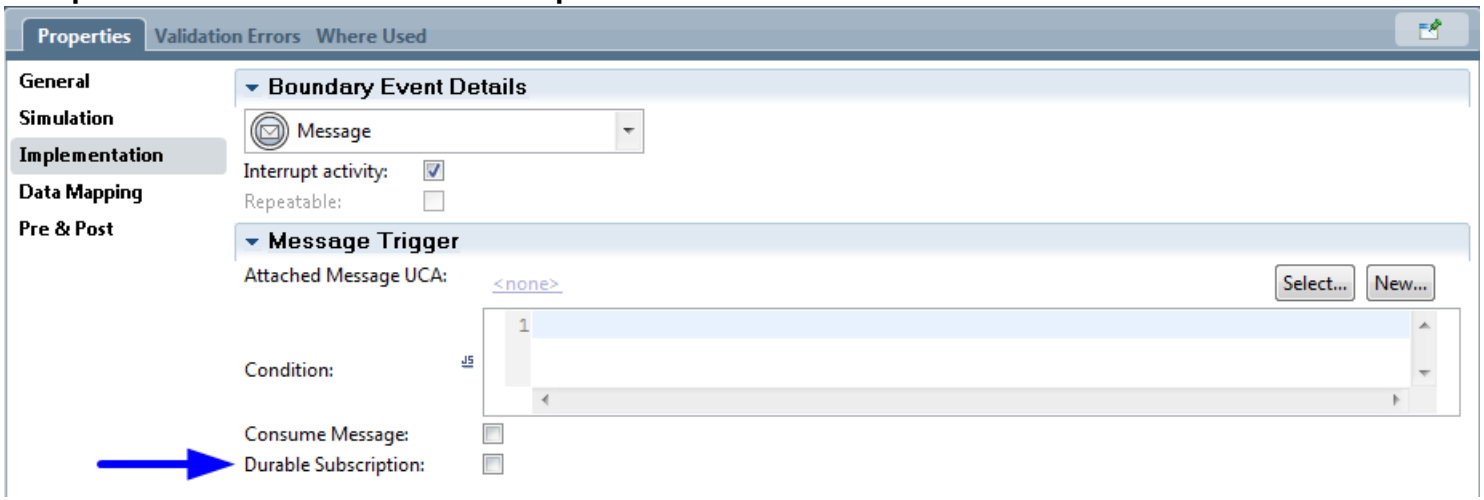
- Note that documents associated with a process instance are deleted together with the process instance.

- You can also use the **TWDocument** javascript method **deleteAllVersions()** to delete a given document.

- **Bottom line: this behavior has not changed with the new embedded content store in 8.5**

Deleting Durable Subscription Events

- Message events in an intermediate message activity of a BPD can be “durable”. If so specified in Process Designer, then these durable messages will accumulate and require occasional cleanup.



- There is no product support for purging durable events today.

… but watch this space …

Temp Directory

- The system temp directory (%temp%) is used for a number of purposes by IBM BPM, especially during install but also during use for example of the Quick Start in 8.5.0.x, and it will accumulate files.
- It is strongly suggested the folder be purged occasionally.
- Note you may desire to archive the .log files in there to a .zip or .tar file, prior to purge

AGENDA

- Introduction
- Process Center
- Process Apps and Toolkits Lifecycle
- Process Instances
- Performance Data Warehouse
- IBM Business Monitor
- Secondary Data
- **WebSphere Logs**
- Summary

WebSphere Logs

- WebSphere `SystemOut.log` contains messages indicating significant events in the life of a JVM process
  - Ensure there is sufficient disk space for your log file configuration
  - Log files automatically roll over and purge the oldest data
  - Implement custom or 3rd-party background batch process to capture oldest logs before roll over
  - The use of HPEL log format is recommended
  - See http://websphereprof.blogspot.ca/2013/04/ibm-was-log-files-and-its-pa for useful overview of log file function and location

WebSphere Transaction Logs

- Transaction log
  - Never delete this log, it is self cleaning
  - Ensure it is on a highly available shared filesystem to facilitate server failover
  - Log sizing: http://pic.dhe.ibm.com/infocenter/wasinfo/v8r5/topic/com.ibm.websphe
  - HA considerations for transactions: http://pic.dhe.ibm.com/infocenter/wasinfo/v8r5/index.jsp?topic=%2Fco

WebSphere Transaction Logs

- Wrt transaction logs, WebSphere recently added support for storing these in a database versus the file system.
  - This can be considerably useful for BPM users to simplify replication of data to a DR site.
  - Note it requires WAS 8.0.0.7 and WAS 8.5.5.0, neither of which BPM ships on *yet*, but BPM customers can upgrade their underlying WAS to a new fixpack level before BPM does.
- For more information:
  - http://pic.dhe.ibm.com/infocenter/wasinfo/v8r0/index.jsp?topic=/com.ibm.websphere.nd.doc/info/ae/ae/tjta_store_logs_in_rdb.html
  - http://pic.dhe.ibm.com/infocenter/wasinfo/v8r5/index.jsp?topic=/com.ibm.websphere.base.doc/ae/tjta_store_logs_in_rdb.html

AGENDA

- Introduction
- Process Center
- Process Apps and Toolkits Lifecycle
- Process Instances
- Performance Data Warehouse
- IBM Business Monitor
- Secondary Data
- WebSphere Logs
- **Summary**

Archiving Summary : Today

	Archiving 7.5.0	Archiving 7.5.1.x	Archiving 8.0.0	Archiving 8.0.1	Archiving 8.5.0
Process Center	Sort of (twx export)	Sort of (twx export)	Sort of (twx export)	Sort of (twx export)	Sort of (twx export)
BPD Instances	none	none	none	none	none
BPEL Instances	supported	supported	supported	supported	supported
PDW	none	none	none	none	none
Business Monitor	supported	supported	supported	supported	supported

Purging Summary : Today

	Purging 7.5.0	Purging 7.5.1	Purging 8.0.0	Purging 8.0.1	Purging 8.5.0
PC Snapshots	none	none	none	none ★	Supported (Named and Unnamed Snapshots) ★
Deployed Snapshots	none	none	none	supported	supported
BPD Instances	LSW_BPD_INSTANCE_DELETE – stored proc	LSW_BPD_INSTANCE_DELETE – stored proc	supported	supported ★	supported ★
BPEL Instances	supported	supported	supported	supported	supported
PDW	none	none	none	none ★	none ★
Durable Events	none	none	none	none ★	none ★
Temp Folder	none	none	none	none	none
Business Monitor	supported	supported	supported	supported	supported

★ *Stay tuned for news coming soon…*