Platform Application Center
Version 9 Release 1 Modification 1

Installing Platform Application Center

SC22-5397-02

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Note
Before using this information and the product it supports, read the information in "Notices" on page 87.

First edition

This edition applies to version 9, release 1, modification 1 of IBM Platform Application Center (product number 5725G88) and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Part 1. Introduction

Chapter 1. Differences between IBM Platform Application Center editions

IBM® Platform Application Center(Platform Application Center) is available in two editions: Basic Edition and Standard Edition.

IBM Platform Application Center Basic Edition provides basic job submission, and job and host monitoring.

IBM Platform Application Center Standard Edition provides not only basic job submission and job and host monitoring, but also default application templates, role-based access control, reporting, customization, and remote visualization capabilities.

The following table highlights the differences between the editions.

Feature	IBM Platform Application Center Basic Edition	IBM Platform Application Center Standard Edition
Generic job submission	✓	✓
Job and host monitoring	✓	✓
Built-in reporting		✓
Specific application job submission		✓
Built-in application templates		✓
Custom applications and templates		✓
Custom job data repositories		✓
SDK to extend application templates and create custom pages		✓
Notifications when job status changes		✓
Branding customization capabilities		✓
Support for remote 2D/3D visualization		✓
Web Services API		✓
Role-based access control		✓
LSF® Scheduler Dashboard		✓
Product Usage Statistics	✓	✓
Integration with IBM Platform Process Manager for web-based flow submission, monitoring and control		✓

Feature	IBM Platform Application Center Basic Edition	IBM Platform Application Center Standard Edition
Integration with IBM Platform Analytics reports for advanced web-based analysis and reporting on LSF data		✓
Integration with IBM Platform License Scheduler for web-based license usage monitoring	✓	✓

Part 2. Requirements

Chapter 2. New installation requirements

Determine your installation scenario

Determine your installation scenario and follow the instructions to install for your specific case.

Installation type	Description	Installation location	Database	Failover	MySQL database Failover	Follow the steps in:
New installation	Install Platform Application Center locally on a machine with a local MySQL database. Failover for Platform Application Center is not enabled.	Installation on local disk of Platform Application Center host	Platform Application Center host: local MySQL installation	No	No	Chapter 4, "Install without failover (local MySQL database)," on page 19
New installation	Install Platform Application Center locally on a machine with a remote MySQL or Oracle database. Failover for Platform Application Center is not enabled.	Installation on local disk of Platform Application Center host	MySQL or Oracle, remote installation	No	No	Chapter 5, "Install without failover (remote MySQL or Oracle database)," on page 23
New installation	Install Platform Application Center on a shared file system with failover but no MySQL database failover.	Installation on a shared disk	MySQL or Oracle, remote installation	Yes	No	Chapter 8, "Install with failover and no MySQL failover," on page 35
New installation	Install Platform Application Center on a shared file system with failover and MySQL database failover. The installer automatically creates the MySQL database schema.	Installation on a shared disk	MySQL installed on a shared disk	Yes	Yes	Chapter 9, "Install with failover and MySQL failover," on page 41

Installation location requirements

Access to LSF

The installation location must have access to the IBM Platform LSF environment(LSF). LSF must be installed and accessible. Get the location of LSF and know the value of LSF_ENVDIR.

Memory requirements

Ensure the installation location has enough memory. The following indicates the Minimum recommended hardware for the Platform Application Center web server.

Item	Small cluster (Up to)	Medium cluster (Up to)	Large cluster (Up to)
Active jobs	5000	50,000	500,000
Job throughput	10,000 jobs/day	100,000 jobs/day	1 million jobs/day
Hosts	100	1000	6000
Active users	50	200	1000
Concurrent users	10	40	200
Time to keep job information and data (default)	14 days	14 days	14 days
Minimum recommended hardware for the Platform Application Center web server	1 CPU, 4 cores each Memory: 8 GB Disk type: Normal	2 CPUs, 4 cores each Memory: 16 GB Disk type: Faster	2 CPUs, 8 cores each Memory: 24 GB Disk type: Faster
Tuning required?	No	Yes	Yes

Disk space requirements

Disk size

Each host should have at least 800 MB of local disk space to install. To support ongoing logging of important data, 2 GB or more is recommended.

Job data

Make sure you have enough space for job data. By default, all job data is stored under the directory `/home/`.

Platform Application Center web server host

- For new installations, a requirement is that you do not have any existing versions of Platform Application Center installed.
- For upgrades, you must have installed Platform Application Center 8.0, 8.0.1, 8.0.2, 8.3, or 9.1.0.0
- For best performance, do not use the LSF master host as the Platform Application Center web server host.
- If failover is required, the Platform Application Center host must be one of the LSF master candidates.
- If failover is not required, any LSF server or client host can be the Platform Application Center web server host as long as the host can read the following:
  - $LSF_ENVDIR
  - $LSF_SERVERDIR
  - $LSB_SHAREDIR

Installation location requirements when using Platform Process Manager

If you have IBM Platform Process Manager(Platform Process Manager):

- If Platform Process Manager is locally installed, you must install Platform Application Center on the same host.

- If Platform Process Manager is installed on a shared filesystem, the Platform Application Center must be installed on a host that can access the shared filesystem.

Installation user account

You must be root to install.

Failover requirements

- Get the name of the LSF master and LSF master candidate hosts as indicated with the parameter LSF_MASTER_LIST in `lsf.conf`.
- You have two LSF master candidate hosts to act as failover hosts.
- You have enabled EGO in your cluster. This is required to support failover for Platform Application Center.
- You have a shared file system in which to install Platform Application Center. This is required in case the host on which Platform Application Center is installed goes down.
- If you are enabling MySQL failover:
  - You have MySQL Community Edition or MySQL Enterprise, version 5.5 or higher.
  - MySQL is installed locally on two LSF master candidate hosts, and it is installed in the same local directory on both hosts.
  - Both LSF master candidate hosts have the same MySQL version.

Database requirements

Supported databases

- MySQL 5.0, 5.1, 5.5, 5.6 Community Edition and Enterprise. For better performance, MySQL 5.6 is recommended.
- Oracle 10g, 11.2 Enterprise Edition for production clusters

MySQL requirements

- Check that MySQL is installed and running.
- Get the location of the MySQL JDBC driver. You will need it for installation. Versions 5.1.13 and higher are supported.

  If the MySQL JDBC driver is not installed, you can download it from:

  `http://www.mysql.com/downloads/connector/j/`

  Important: After download, you will need to manually extract the MySQL JDBC driver package to a local directory on the Platform Application Center host.
- Get the MySQL root user password. You will need it for installation. The default for MySQL is no password.

Oracle requirements

- Check your Oracle database is properly configured and running.
- Check you have a user name, password, and URL to access the database.
- Ensure you installed the latest JDBC driver (`ojdbc14.jar` or newer) for the Oracle database. This driver is available from the following URL:

  `http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/index.html`

LSF requirements

LSF and LSF add-ons product versions

Important: If you are using LSF 8.0, 8.0.1 or 8.3, you need to download and install the fix pack.

- Fix pack for LSF 8.3:

  http://www.ibm.com/support/fixcentral/swg/selectFixes?parent=Platform+Computing&product=ibm/Other+software/Platform+LSF&release=All&platform=All&function=fixId&fixids=lsf-8.3-build209549&includeSupersedes=0

- Fix pack for LSF 8.0.1:

  http://www.ibm.com/support/fixcentral/swg/selectFixes?parent=Platform+Computing&product=ibm/Other+software/Platform+LSF&release=All&platform=All&function=fixId&fixids=lsf-8.0.1-build209240&includeSupersedes=0

	Supported with			
	IBM Platform LSF	**IBM Platform Process Manager**	**IBM Platform Analytics**	**IBM Platform License Scheduler**
IBM Platform Application Center Basic Edition	• 9.1, 9.1.1, 9.1.1.1 Express® Edition • 9.1, 9.1.1, 9.1.1.1 Standard Edition • 8.3 Express Edition • 8.3 Standard Edition • 8.0.1 • 8.0	-	-	9.1
IBM Platform Application Center Standard Edition	• 9.1, 9.1.1, 9.1.1.1 Express Edition • 9.1, 9.1.1, 9.1.1.1 Standard Edition • 8.3 Express Edition • 8.3 Standard Edition • 8.0.1 • 8.0	9.1.1	9.1	9.1

Synchronize times between LSF and Platform Application Center

The clock time on both the LSF master and the Platform Application Center web server must be the same. Ensure these times are synchronized.

Ensure the LSF LSB_SHAREDIR is accessible

Platform Application Center requires read access to the LSF `work` directory, defined in the LSF configuration file `$LSF_ENVDIR/lsf.conf` with the parameter LSB_SHAREDIR.

Configure LSF events for Platform Application Center

You need to configure LSF to log events so that Platform Application Center can retrieve job information.

1. Log on to the LSF master host as the LSF administrator.
2. Set the LSF environment.
3. Edit the `$LSF_ENVDIR/lsbatch/cluster_name/configdir/lsb.params` configuration file.
   a. Add the parameter `ALLOW_EVENT_TYPE` and define the following events.

      If you do not plan to use Standard reports, use the following configuration. These are the required events for the **Jobs** page in Platform Application Center to work properly:

```
ALLOW_EVENT_TYPE=JOB_NEW JOB_STATUS JOB_FINISH2 JOB_START JOB_EXECUTE JOB_EXT_MSG JOB_SIGNAL JOB_REQUEUE JOB_MODIFY2
JOB_SWITCH METRIC_LOG
```

      If you plan on using Standard reports, use the following configuration:

```
ALLOW_EVENT_TYPE=JOB_NEW JOB_START JOB_START_ACCEPT JOB_STATUS JOB_FORWARD \
MIG JOB_ACCEPT JOB_SWITCH JOB_FINISH JOB_MODIFY2 UNFULFILL JOB_SIGACT \
JOB_SIGNAL JOB_EXECUTE JOB_REQUEUE JOB_CLEAN JOB_EXCEPTION JOB_EXT_MSG \
JOB_ATTA_DATA JOB_CHUNK SBD_UNREPORTED_STATUS PRE_EXEC_START JOB_FORCE \
JOB_MOVE JOB_RUN_RUSAGE METRIC_LOG
```

   b. Enable event streaming by setting `ENABLE_EVENT_STREAM=Y`.

      Event streaming in your LSF cluster is required so that data can be loaded into the Platform Application Center database.

      Important: The LSF stream file name must be `lsb.stream` to work with Platform Application Center. This is the default name.

   c. Check whether the parameter LSB_QUERY_PORT is set in `lsf.conf`. If LSB_QUERY_PORT is set, then set `NEWJOB_REFRESH=Y` in `lsb.params`.

      This is required because when LSB_QUERY_PORT is set, newly submitted job information is not immediately available, and as a result, Platform Application Center is unable to display job details when a job is submitted.
4. Run **badmin reconfig** to reconfigure mbatchd.

LSF and IBM Platform MultiCluster

If using LSF with IBM Platform MultiCluster, ensure the first cluster name listed in the configuration file `lsf.shared` is the local cluster name, as this is used by LSF to detect the `lsb.stream` file location.

Additional requirements for LSF 8.x only

Install the Fix Pack for LSF 8.0.1 and 8.3

Install the fix pack for LSF 8.0.1 and LSF 8.3.

- Fix pack for LSF 8.3:

  http://www.ibm.com/support/fixcentral/swg/selectFixes?parent=Platform+Computing&product=ibm/Other+software/Platform+LSF&release=All&platform=All&function=fixId&fixids=lsf-8.3-build209549&includeSupersedes=0
- Fix pack for LSF 8.0.1:

  http://www.ibm.com/support/fixcentral/swg/selectFixes?parent=Platform+Computing&product=ibm/Other+software/Platform+LSF&release=All&platform=All&function=fixId&fixids=lsf-8.0.1-build209240&includeSupersedes=0

Define how to manage the lsb.stream file for LSF 8.x

1. Log in as LSF administrator to the Platform Application Center web server.
2. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /opt/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . /opt/pac/profile.platform
     ```

3. Edit the `$PERF_CONFDIR/dataloader/lsbevents.properties` file and set:

   ```
   AUTO_DELETE_STREAM_FILE=Y
   REMAINED_STREAM_FILE=10
   ```

   The number in REMAINED_STREAM_FILE represents the number of files and can be smaller or larger depending on your site requirements.

System requirements

Supported operating systems

- Linux 2.6 glibc 2.3 x86 64 bit, Red Hat 5.6, 5.7, 5.8, and 6.0, 6.1, 6.2, 6.3
- Linux 2.6 glibc 2.3 x86 64 bit, SUSE 10.2, SUSE 11.0, 11.1, 11.2
- Linux for Power Systems™ Servers (Linux 2.6, glibc 2.3 or glibc 2.11): Red Hat Enterprise 5.6, 5.7, 5.8, 6.0, 6.1, 6.2, 6.3 and SUSE 11.0, 11.1, 11.2

Supported authentication

- Password File
- NIS
- LDAP
- AD (Active Directory)

Supported web browsers

Linux

- Firefox 3.6, 10.0

Windows

- Internet Explorer 8, 9
- Firefox 16, 17.07, 20, 21, 22
- Google Chrome 26, 27, 28

Important:

Adobe Flash version 8 or later is required to access report charts.

Supported Java Runtime Environment (JRE) in browser

- JRE 1.6.0_10 or higher is required.

  JRE1.6.0_25 or higher is required for Internet Explorer 9.
- For Exceed on Demand integrations, JRE 1.7 or higher is required on the browser for application templates to work properly.
- The JRE add-on must be enabled.

Important: A supported Java™ Runtime Environment(JRE) version must be enabled at the system level on the host on which the browser is running. Otherwise, Platform Application Center will not work properly. Select **Start** > **System** > **Control Panel** > **Java** and check that a supported version of the JRE is enabled.

Tested applications and versions

The following versions of supported applications have been tested with Platform Application Center:

Note: These are tested application versions. Job submission forms can be customized to support other versions.

Application	Tested Versions
ABAQUS	• 6.9-1
ANSYS	• V121 • V120 • V110 • V100
BLAST	• 2.2.20
CATIA	• V5R20 Windows 7
CFX	• CFX-5 (Ansys Suite)
CLUSTALW	• 2.1
CMGL_GEM	• 2008.12 • 2009.13
CMGL_IMEX	• 2008.11 • 2009.11
CMGL_STARS	• 2008.12 • 2009.11
DCV	• NICE DCV Server 2012.0-4557 on LSF compute hosts • RealVNC Visualization Edition (VE) 4.5.1 Viewer on user workstations
ECLIPSE	• 2009.1 • 2010
Exceed	• Exceed on Demand server 13.8 SP1 (Platform Application Center web server) • Exceed on Demand Client 13.8 SP1 **Important:** For Exceed application templates to work properly, JRE 1.7 or higher is required on the browser.
FLUENT	• 12.1.2 • 12.0.16 • 6.3.26
HMMER	• 3.0

Application	Tested Versions
LS-DYNA	• 971 • 970
MATLAB	• R2011a
NASTRAN	• MSC 2008
NWCHEM	• 6.0
RGS	• HP Remote Graphic Software 5.4.7/5.4.8
STAR-CCM+	• 6.02

Download required Platform Application Center binaries

Download the IBM Platform Application Center(Platform Application Center) 9.1.1.0 package.

- If you have Platform Application Center Enterprise version, download IBM Platform Application Center Standard Edition.
- If you have Platform Application Center free version, download IBM Platform Application Center Basic Edition.

Chapter 3. Upgrade requirements

Required installed Platform Application Center version

You must have installed Platform Application Center 8.0, 8.0.1, 8.0.2, 8.3, or 9.1.0.0

Download required Platform Application Center binaries

Download the IBM Platform Application Center(Platform Application Center) 9.1.1.0 package.

- If you have the Platform Application Center Enterprise version, download IBM Platform Application Center Standard Edition.
- If you have the Platform Application Center free version, download IBM Platform Application Center Basic Edition.

Synchronize times between LSF and Platform Application Center

The clock time on both the LSF master and the Platform Application Center web server must be the same. Ensure these times are synchronized.

Ensure the LSF LSB_SHAREDIR is accessible

Platform Application Center requires read access to the LSF `work` directory, defined in the LSF configuration file `$LSF_ENVDIR/lsf.conf` with the parameter LSB_SHAREDIR.

Configure LSF events for Platform Application Center

You need to configure LSF to log events so that Platform Application Center can retrieve job information.

1. Log on to the LSF master host as the LSF administrator.
2. Set the LSF environment.
3. Edit the `$LSF_ENVDIR/lsbatch/`*`cluster_name`*`/configdir/lsb.params` configuration file.
   a. Add the parameter `ALLOW_EVENT_TYPE` and define the following events.

      If you do not plan to use Standard reports, use the following configuration. These are the required events for the **Jobs** page in Platform Application Center to work properly:

```
ALLOW_EVENT_TYPE=JOB_NEW JOB_STATUS JOB_FINISH2 JOB_START JOB_EXECUTE JOB_EXT_MSG JOB_SIGNAL JOB_REQUEUE JOB_MODIFY2
JOB_SWITCH METRIC_LOG
```

      If you plan on using Standard reports, use the following configuration:

```
ALLOW_EVENT_TYPE=JOB_NEW JOB_START JOB_START_ACCEPT JOB_STATUS JOB_FORWARD \
MIG JOB_ACCEPT JOB_SWITCH JOB_FINISH JOB_MODIFY2 UNFULFILL JOB_SIGACT \
JOB_SIGNAL JOB_EXECUTE JOB_REQUEUE JOB_CLEAN JOB_EXCEPTION JOB_EXT_MSG \
JOB_ATTA_DATA JOB_CHUNK SBD_UNREPORTED_STATUS PRE_EXEC_START JOB_FORCE \
JOB_MOVE JOB_RUN_RUSAGE METRIC_LOG
```

   b. Enable event streaming by setting `ENABLE_EVENT_STREAM=Y`.

      Event streaming in your LSF cluster is required so that data can be loaded into the Platform Application Center database.

Important: The LSF stream file name must be `lsb.stream` to work with Platform Application Center. This is the default name.

c. Check whether the parameter LSB_QUERY_PORT is set in `lsf.conf`. If LSB_QUERY_PORT is set, then set `NEWJOB_REFRESH=Y` in `lsb.params`.

This is required because when LSB_QUERY_PORT is set, newly submitted job information is not immediately available, and as a result, Platform Application Center is unable to display job details when a job is submitted.

4. Run **badmin reconfig** to reconfigure mbatchd.

Additional requirements for LSF 8.x only

Install the Fix Pack for LSF 8.0.1 and 8.3

Install the fix pack for LSF 8.0.1 and LSF 8.3.

- Fix pack for LSF 8.3:

  http://www.ibm.com/support/fixcentral/swg/selectFixes?parent=Platform+Computing&product=ibm/Other+software/Platform+LSF&release=All&platform=All&function=fixId&fixids=lsf-8.3-build209549&includeSupersedes=0

- Fix pack for LSF 8.0.1:

  http://www.ibm.com/support/fixcentral/swg/selectFixes?parent=Platform+Computing&product=ibm/Other+software/Platform+LSF&release=All&platform=All&function=fixId&fixids=lsf-8.0.1-build209240&includeSupersedes=0

Define how to manage the lsb.stream file for LSF 8.x

1. Log in as LSF administrator to the Platform Application Center web server.
2. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /opt/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . /opt/pac/profile.platform
     ```

3. Edit the `$PERF_CONFDIR/dataloader/lsbevents.properties` file and set:

   ```
   AUTO_DELETE_STREAM_FILE=Y
   REMAINED_STREAM_FILE=10
   ```

   The number in REMAINED_STREAM_FILE represents the number of files and can be smaller or larger depending on your site requirements.

Part 3. New Installation without Failover

Chapter 4. Install without failover (local MySQL database)

Use these instructions to install Platform Application Center locally on a machine with a local MySQL database. Failover for Platform Application Center is not enabled.

Install

Before you begin

See Chapter 2, "New installation requirements," on page 7

- You do not have any existing versions of Platform Application Center installed.

About this task

The default installation of Platform Application Center installs with the following options. You can change default settings by editing `pacinstall.sh`.

Item	Default
Installation location	/opt/pac
MySQL database	• Location: local to the machine • root database password: none • Database name: `pac` • Database user name: `pacuser` • Database password: `pacuser`
Job data location	`/home` When jobs run, output data is created for each job. By default, job data is stored in `/home/`*`user_name`* of each user that is running jobs.
Failover	There is no failover configured for Platform Application Center.

Note:

Installation of multiple instances of Platform Application Center on the same host is not supported.

Procedure

1. As root, log on to the host on which you have selected to install Platform Application Center.
2. Untar the Platform Application Center package you downloaded and navigate to that directory.

   For example:

   ```
   tar -xzvf pac9.1.1_standard_linux-x64.tar.Z
   cd pac9.1.1_standard_linux-x64
   ```
3. Edit `pacinstall.sh` to set your installation variables.

   The required variables are:

- LSF_ENVDIR
- MYSQL_JDBC_DRIVER_JAR

4. Run `pacinstall.sh` to set your environment variables and run rpm.

```
# ./pacinstall.sh
```

Install in Silent mode

Procedure

1. If you have a password for your MySQL database, set the MySQL password as an environment variable on the host.

   If you do not have a password for your MySQL database, you do not need to set the environment variable as the installation script assumes a blank password by default.

   For example:

   For csh or tcsh:

```
# setenv MYSQL_ROOT_PASSWORD "test"
```

   For sh, ksh, or bash:

```
# export MYSQL_ROOT_PASSWORD="test"
```

2. Run `pacinstall.sh` to set your environment variables and run rpm.

   The -s option installs silently and the -y option accepts the license agreement.

```
# ./pacinstall.sh -s -y
```

Check your installation

Procedure

Go to the location in which you installed Platform Application Center and check that all files have been installed.
You should see the following directory structure:

```
# cd /opt/pac
# ls -l
total 40
drwxr-xr-x 2 root     root  4096 May  9 00:29 LA
-rwxr-xr-x 1 lsfadmin wheel  139 May  9 00:29 cshrc.platform
drw-rw---- 2 mysql    mysql 4096 May  8 07:44 data
drwxr-xr-x 8 root     root  4096 May  9 00:29 gui
-rw-rw-rw- 1 root     root  5150 May  9 00:29 install.log
drwxrwxr-x 3 root     root  4096 May  9 00:29 jre
drwxr-xr-x 9 root     root  4096 May  9 00:29 perf
-rwxr-xr-x 1 lsfadmin wheel  211 May  9 00:29 profile.platform
drwxr-xr-x 3 root     root  4096 May  9 00:29 properties
```

If you installed in silent mode, you can also check the installation log file `install.log` created in the same directory as Platform Application Center was installed, such as for example, `/opt/pac`.

Increase data loader memory for medium and large clusters

About this task

Ensure the Platform Application Center web server and loader have enough memory assigned.

Procedure

1. Log on to the Platform Application Center web server host as root.
2. Set the Platform Application Center environment.
3. Open `$PERF_CONFDIR/wsm/wsm_plc.conf`
4. Set the memory in the parameter JAVA_OPTS to a number larger than the default.

   Change the `-Xms` and `-Xmx` numbers to a higher number. These numbers are in MB and set the minimum and maximum memory that the loader can use. If you reach the maximum number, Java throws an exception.

   - For medium clusters, 50,000 active jobs and a throughput of 10 jobs/second, a maximum memory of 6 GB is required.
   - For large clusters, 500,00 active jobs, and a throughput of 30 jobs/second, a maximum memory of 14 GB is required.

   For example:

   ```
   JAVA_OPTS=-Xms1024m -Xmx14336m -Dcom.sun.management.jmxremote=true
   ```

Start Platform Application Center (no failover)

Procedure

1. As root, set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /opt/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . opt/pac/profile.platform
     ```

2. Start Platform Application Center services.

   ```
   perfadmin start all
   pmcadmin start
   ```

3. Check services have started.

   ```
   perfadmin list
   pmcadmin list
   ```

   You should be able to see the **WEBGUI**, **jobdt**, **plc**, and **purger** services started.

4. Log in to Platform Application Center.

   Browse to the web server URL and log in to the Platform Application Center using the LSF administrator name and password.

   The web server URL is:

   `http://`*`host_name`*`:8080/platform`

   The host name is the Platform Application Center host you specified.

Chapter 5. Install without failover (remote MySQL or Oracle database)

Use these instructions to install Platform Application Center locally on a machine with a remote MySQL or Oracle database. Failover for Platform Application Center is not enabled.

Install

Use these instructions to install Platform Application Center locally on a machine with a remote MySQL or Oracle database. Failover for Platform Application Center is not enabled.

Before you begin

See Chapter 2, "New installation requirements," on page 7

- You do not have any existing versions of Platform Application Center installed.

About this task

The default installation of Platform Application Center installs with the following options. You can change default settings by editing `pacinstall.sh`.

Item	Default
Installation location	/opt/pac
MySQL database	• Location: remote • root database password: none • Database name: `pac` • Database user name: `pacuser` • Database password: `pacuser`
Job data location	`/home` When jobs run, output data is created for each job. By default, job data is stored in `/home/`*`user_name`* of each user that is running jobs.
Failover	There is no failover configured for Platform Application Center.

Note:

Installation of multiple instances of Platform Application Center on the same host is not supported.

Procedure

1. As root, log on to the host on which you have selected to install Platform Application Center.
2. Untar the Platform Application Center package you downloaded and navigate to that directory.

For example:

```
tar -xzvf pac9.1.1_standard_linux-x64.tar.Z
cd pac9.1.1_standard_linux-x64
```

3. Edit `pacinstall.sh` to set your installation variables.

   The required variables are:

   - LSF_ENVDIR
   - MYSQL_JDBC_DRIVER_JAR
   - USE_REMOTE_DB="Y"

4. Run `pacinstall.sh` to set your environment variables and run rpm.

   ```
   # ./pacinstall.sh
   ```

Install in Silent mode

Procedure

1. If you have a password for your MySQL database, set the MySQL password as an environment variable on the host.

   If you do not have a password for your MySQL database, you do not need to set the environment variable as the installation script assumes a blank password by default.

   For example:

   For csh or tcsh:

   ```
   # setenv MYSQL_ROOT_PASSWORD "test"
   ```

   For sh, ksh, or bash:

   ```
   # export MYSQL_ROOT_PASSWORD="test"
   ```

2. Run `pacinstall.sh` to set your environment variables and run rpm.

   The -s option installs silently and the -y option accepts the license agreement.

   ```
   # ./pacinstall.sh -s -y
   ```

Check your installation

Procedure

Go to the location in which you installed Platform Application Center and check that all files have been installed.
You should see the following directory structure:

```
# cd /opt/pac
# ls -l
total 40
drwxr-xr-x 2 root     root  4096 May  9 00:29 LA
-rwxr-xr-x 1 lsfadmin wheel  139 May  9 00:29 cshrc.platform
drw-rw---- 2 mysql    mysql 4096 May  8 07:44 data
drwxr-xr-x 8 root     root  4096 May  9 00:29 gui
-rw-rw-rw- 1 root     root  5150 May  9 00:29 install.log
drwxrwxr-x 3 root     root  4096 May  9 00:29 jre
drwxr-xr-x 9 root     root  4096 May  9 00:29 perf
-rwxr-xr-x 1 lsfadmin wheel  211 May  9 00:29 profile.platform
drwxr-xr-x 3 root     root  4096 May  9 00:29 properties
```

If you installed in silent mode, you can also check the installation log file `install.log` created in the same directory as Platform Application Center was installed, such as for example, `/opt/pac`.

Create the database schema

You can create either a MySQL database or an Oracle database for Platform Application Center. Follow the related steps for your database type.

Create a MySQL database schema

About this task

Follow these instructions to:

- Create a MySQL database named pac
- Create a database user named pacuser, with database password pacuser
- Grant this user all privileges on the pac database
- Ensure this database can be connected to from any host

Note:

It is not required to use the pac database name and pacuser user name. Use different names as desired.

Procedure

1. Log on to the host that contains your MySQL database.
2. Log on to MySQL as the root database user.

   The default MySQL root database password is blank.

   For example:

   ```
   mysql -u root -p$rootpassword
   ```
3. Create a database named pac.

   ```
   mysql> create database pac default character set utf8 default collate utf8_bin;
   ```
4. Create a user named pacuser with the password pacuser and grant this user all privileges on the pac database.

   Ensure the database can be connected to from any host (%).

   For example:

   ```
   mysql> GRANT ALL PRIVILEGES ON pac.* to pacuser@'%' IDENTIFIED BY 'pacuser';
   ```
5. Untar the schema package.

   ```
   tar -xvf pcc-appcenter-9.1.1-dbschema.tar
   ```
6. Run the schema files for the database that has the name pac.

   ```
   mysql>use pac;
   mysql>source DBschema/MySQL/egodata.sql;
   mysql>source DBschema/MySQL/lsfdata.sql;
   mysql>source DBschema/MySQL/lsf_sql.sql;
   mysql>source DBschema/MySQL/create_schema.sql;
   mysql>source DBschema/MySQL/create_pac_schema.sql;
   mysql>source DBschema/MySQL/init.sql;
   ```

Create an Oracle database schema

About this task

Follow these instructions to create database schemas in Oracle for Platform Application Center data.

Procedure

1. Untar the schema package.

   ```
   tar -xvf pcc-appcenter-9.1.1-dbschema.tar
   ```

2. Go to the Oracle directory.

   ```
   cd DBschema/Oracle
   ```

3. In the command console, run the script to create the EGO database schema.

```
sqlplus user_name/password@connect_string @create_egobasic_rawdata_schema.sql data_tablespace index_tablespace
```

   where

   - *user_name* is the user name on the database.
   - *password* is the password for this user name on the database.
   - *connect_string* is the named SQLNet connection for this database.
   - *data_tablespace* is the name of the tablespace where you intend to store the table schema.
   - *index_tablespace* is the name of the tablespace where you intend to store the index.

4. Run the script to create the LSF database schema.

```
sqlplus user_name/password@connect_string @create_lsfbasic_rawdata_schema.sql data_tablespace index_tablespace
```

   where

   - *user_name* is the user name on the database.
   - *password* is the password for this user name on the database.
   - *connect_string* is the named SQLNet connection for this database.
   - *data_tablespace* is the name of the tablespace where you intend to store the table schema.
   - *index_tablespace* is the name of the tablespace where you intend to store the index.

5. Run the scripts to create the Platform Application Center database schema.

```
sqlplus user_name/password@connect_string @create_pac_schema.sql data_tablespace index_tablespace
sqlplus user_name/password@connect_string @create_schema.sql data_tablespace index_tablespace
sqlplus user_name/password@connect_string @init.sql data_tablespace index_tablespace
```

Configure the database connection

Follow these instructions to write the database connection string in the Platform Application Center configuration file `$PERF_TOP/conf/datasource.xml` with encrypted passwords.

Before you begin

You have a user name, password, and URL to access the database.

Procedure

1. If you connected to the UNIX host via **telnet** and are running **xserver** on a local host, set your display environment.

   Test your display by running **xclock** or another X-Windows application.

   If the application displays, your display environment is already set correctly; otherwise, you need to set your display environment.

   - For **csh** or **tcsh**:

     ```
     setenv DISPLAY hostname:0.0
     ```

   - For **sh**, **ksh**, or **bash**:

```
DISPLAY=hostname:0.0
export DISPLAY
```

where *hostname* is your local host.

2. Launch the database configuration tool.

   Run `$PERF_TOP/1.2/bin/dbconfig.sh`.

3. In the **User ID** and **Password** fields, specify the user account name and password with which to connect to the database.
4. In the **JDBC driver** field, select the driver for your database.
5. In the **JDBC URL** field, enter the URL for your database.

   This should be similar to the format given in **Example URL format**.

6. In the **Maximum connections** field, specify the maximum allowed number of concurrent connections to the database server.
7. Click **Test** to test your database connection.
8. Click **OK** to save your settings.

Increase data loader memory for medium and large clusters

About this task

Ensure the Platform Application Center web server and loader have enough memory assigned.

Procedure

1. Log on to the Platform Application Center web server host as root.
2. Set the Platform Application Center environment.
3. Open `$PERF_CONFDIR/wsm/wsm_plc.conf`
4. Set the memory in the parameter JAVA_OPTS to a number larger than the default.

   Change the `-Xms` and `-Xmx` numbers to a higher number. These numbers are in MB and set the minimum and maximum memory that the loader can use. If you reach the maximum number, Java throws an exception.

   - For medium clusters, 50,000 active jobs and a throughput of 10 jobs/second, a maximum memory of 6 GB is required.
   - For large clusters, 500,00 active jobs, and a throughput of 30 jobs/second, a maximum memory of 14 GB is required.

   For example:

   ```
   JAVA_OPTS=-Xms1024m -Xmx14336m -Dcom.sun.management.jmxremote=true
   ```

Start Platform Application Center (no failover)

Procedure

1. As root, set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /opt/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . opt/pac/profile.platform
     ```

2. Start Platform Application Center services.

```
perfadmin start all
pmcadmin start
```

3. Check services have started.

   ```
   perfadmin list
   ```

   ```
   pmcadmin list
   ```

   You should be able to see the **WEBGUI**, **jobdt**, **plc**, and **purger** services started.

4. Log in to Platform Application Center.

   Browse to the web server URL and log in to the Platform Application Center using the LSF administrator name and password.

   The web server URL is:

   `http://`*`host_name`*`:8080/platform`

   The host name is the Platform Application Center host you specified.

Part 4. New Installation with Failover

Chapter 6. About Platform Application Center failover

Platform Application Center failover includes the web server, reporting services, and optionally, the MySQL database.

Configuration files and binaries are stored on the shared filesystem, and failover services are provided by EGO.

Two LSF master candidate hosts are used for failover. Should the primary host on which Platform Application Center is running fail, EGO can start Platform Application Center services and MySQL on the backup host.

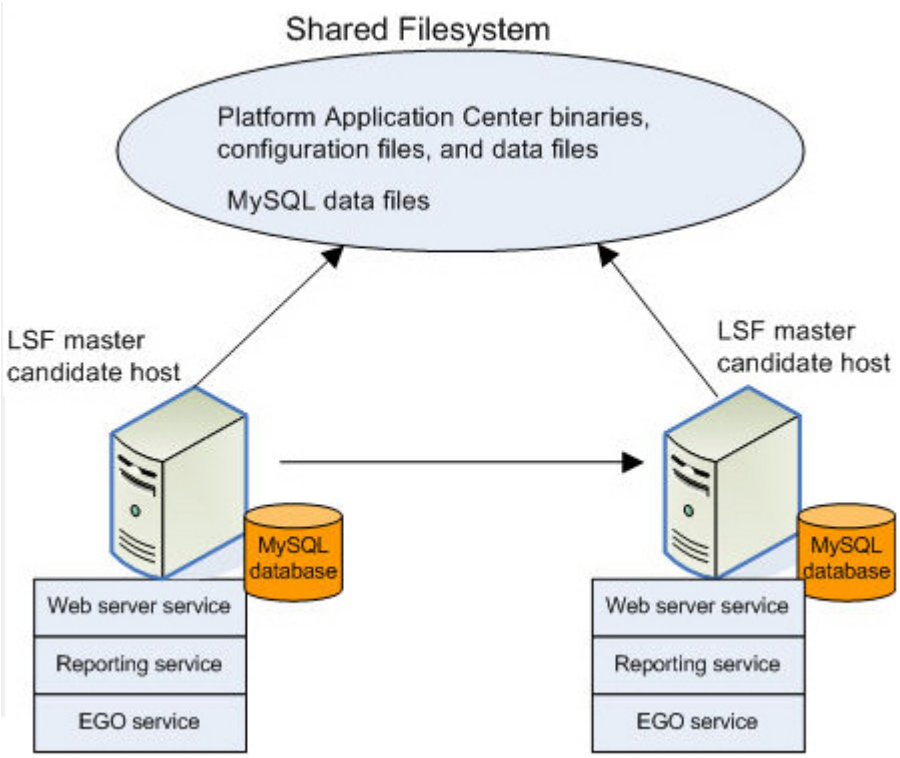
When you select failover with failover of the MySQL database

The following is stored on the shared filesystem:

- Platform Application Center binaries, configuration files, and data files
- MySQL data files

The following is installed on two LSF master candidate hosts:

- Platform Application Center web server and reporting services
- MySQL database and services
- EGO service (which manages failover)



When you select failover without MySQL failover

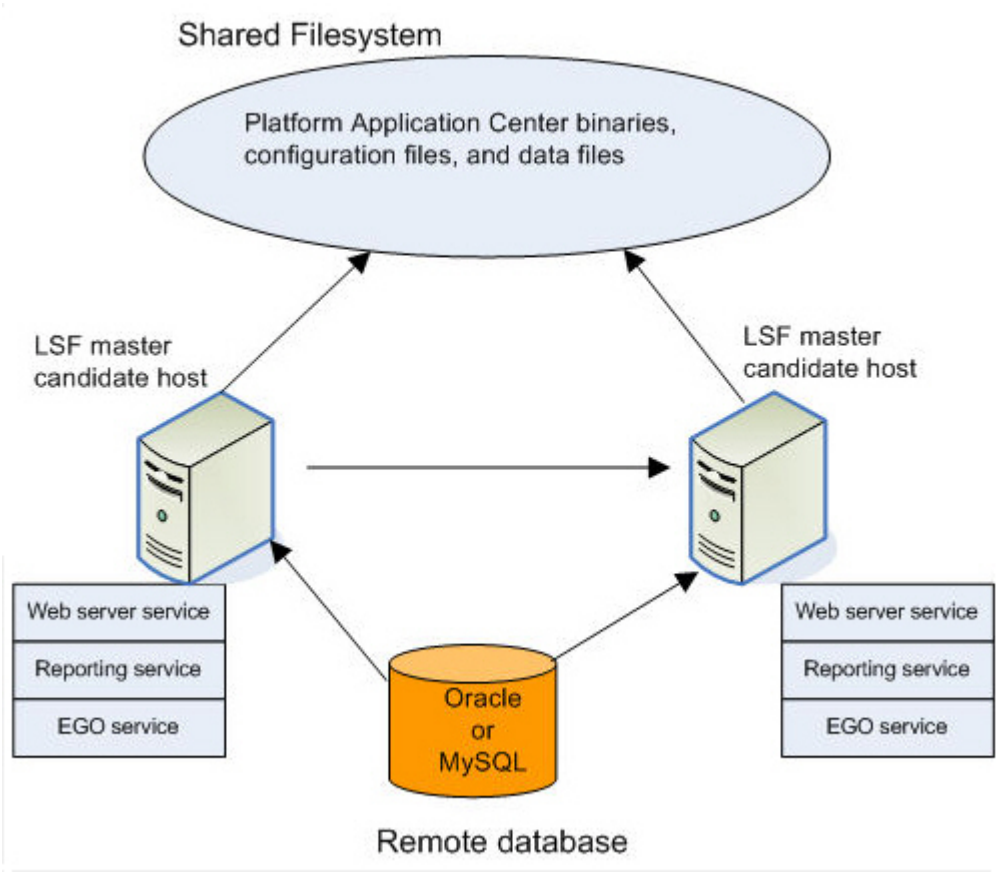
You would use this type of failover installation when you have an Oracle database, or a remote MySQL installation for which you do not want failover.

The following is stored on the shared filesystem:

- Platform Application Center binaries, configuration files, and data files

The following is installed on two LSF master candidate hosts:

- Platform Application Center web server and reporting services
- EGO service (which manages failover)



Chapter 7. Before Installing: Enable EGO in your LSF cluster

About this task

For failover support for Platform Application Center, you must enable EGO in your cluster. EGO will manage Platform Application Center services.

Procedure

1. Log on to the master host as `root`.
2. Edit `lsf.conf` and enable EGO in your LSF cluster:
   ```
   LSF_ENABLE_EGO=Y
   ```
3. Save `lsf.conf`.
4. Copy the entitlement file to the EGO configuration directory.
   ```
   cp $LSF_ENVDIR/lsf.entitlement $EGO_CONFDIR
   ```
5. Run **lsadmin reconfig** to reconfigure LIM.
6. Run **badmin mbdrestart** to restart **mbatchd**.
7. Run **lsfstartup** to restart all daemons in the cluster.

Chapter 8. Install with failover and no MySQL failover

Install

Use these instructions to install Platform Application Center on a shared file system with failover but no MySQL database failover. Oracle database failover is not supported.

Before you begin

See Chapter 2, “New installation requirements,” on page 7

Note:

Installation of multiple instances of Platform Application Center in the same location is not supported.

Procedure

1. As root, log on to any host that has access to the LSF environment and the shared file system.
2. Untar the Platform Application Center package you downloaded and navigate to that directory.

   For example:

   ```
   tar -xzvf pac9.1.1_standard_linux-x64.tar.Z
   cd pac9.1.1_standard_linux-x64
   ```
3. Edit `pacinstall.sh` to set your installation parameters.
   - The following are required parameters to install Platform Application Center with failover, using a remote MySQL or Oracle database. No database failover is enabled:
     - PAC_TOP
     - LSF_ENVDIR
     - MYSQL_JDBC_DRIVER_JAR
     - FAILOVER_HOST
     - PAC_EGO_CONTROL="Y"
     - USE_REMOTE_DB="Y"

   Remember:

   You must specify PAC_TOP as a shared directory for failover. The default installation directory is locally on the machine in /opt/pac.
4. Run `pacinstall.sh` to set your environment variables and run **rpm**.

   ```
   # ./pacinstall.sh
   ```

Install in Silent mode

Procedure

1. If you have a password for your MySQL database, set the MySQL password as an environment variable on the host.

If you do not have a password for your MySQL database, you do not need to sent the environment variable as the installation script assumes a blank password by default.

For example:

For csh or tcsh:

```
# setenv MYSQL_ROOT_PASSWORD "test"
```

For sh, ksh, or bash:

```
# export MYSQL_ROOT_PASSWORD="test"
```

2. Run `pacinstall.sh` to set your environment variables and run rpm.

   The -s option installs silently and the -y option accepts the license agreement.

   ```
   # ./pacinstall.sh -s -y
   ```

Check your installation

Procedure

Go to the location in which you installed Platform Application Center and check that all files have been installed.

```
# cd /share/pac
# ls -l
total 40
drwxr-xr-x 2 root     root  4096 May  9 00:29 LA
-rwxr-xr-x 1 lsfadmin wheel  139 May  9 00:29 cshrc.platform
drw-rw---- 2 mysql    mysql 4096 May  8 07:44 data
drwxr-xr-x 8 root     root  4096 May  9 00:29 gui
-rw-rw-rw- 1 root     root  5150 May  9 00:29 install.log
drwxrwxr-x 3 root     root  4096 May  9 00:29 jre
drwxr-xr-x 9 root     root  4096 May  9 00:29 perf
-rwxr-xr-x 1 lsfadmin wheel  211 May  9 00:29 profile.platform
drwxr-xr-x 3 root     root  4096 May  9 00:29 properties
```

If you installed in silent mode, you can also check the installation log file `install.log` created in the same directory as Platform Application Center was installed, such as for example, `/share/pac`.

Create the database schema

You can create either a MySQL database or an Oracle database for Platform Application Center. Follow the related steps for your database type.

Create a MySQL database schema

About this task

Follow these instructions to:

- Create a MySQL database named pac
- Create a database user named pacuser, with database password pacuser
- Grant this user all privileges on the pac database
- Ensure this database can be connected to from any host

Note:

It is not required to use the pac database name and pacuser user name. Use different names as desired.

Procedure

1. Log on to the host that contains your MySQL database.
2. Log on to MySQL as the root database user.

   The default MySQL root database password is blank.

   For example:

   ```
   mysql -u root -p$rootpassword
   ```
3. Create a database named pac.

   ```
   mysql> create database pac default character set utf8 default collate utf8_bin;
   ```
4. Create a user named pacuser with the password pacuser and grant this user all privileges on the pac database.

   Ensure the database can be connected to from any host (%).

   For example:

   ```
   mysql> GRANT ALL PRIVILEGES ON pac.* to pacuser@'%' IDENTIFIED BY 'pacuser';
   ```
5. Untar the schema package.

   ```
   tar -xvf pcc-appcenter-9.1.1-dbschema.tar
   ```
6. Run the schema files for the database that has the name pac.

   ```
   mysql>use pac;
   mysql>source DBschema/MySQL/egodata.sql;
   mysql>source DBschema/MySQL/lsfdata.sql;
   mysql>source DBschema/MySQL/lsf_sql.sql;
   mysql>source DBschema/MySQL/create_schema.sql;
   mysql>source DBschema/MySQL/create_pac_schema.sql;
   mysql>source DBschema/MySQL/init.sql;
   ```

Create an Oracle database schema

About this task

Follow these instructions to create database schemas in Oracle for Platform Application Center data.

Procedure

1. Untar the schema package.

   ```
   tar -xvf pcc-appcenter-9.1.1-dbschema.tar
   ```
2. Go to the Oracle directory.

   ```
   cd DBschema/Oracle
   ```
3. In the command console, run the script to create the EGO database schema.

```
sqlplus user_name/password@connect_string @create_egobasic_rawdata_schema.sql data_tablespace index_tablespace
```

   where

   - *user_name* is the user name on the database.
   - *password* is the password for this user name on the database.
   - *connect_string* is the named SQLNet connection for this database.
   - *data_tablespace* is the name of the tablespace where you intend to store the table schema.
   - *index_tablespace* is the name of the tablespace where you intend to store the index.
4. Run the script to create the LSF database schema.

```
sqlplus user_name/password@connect_string @create_lsfbasic_rawdata_schema.sql data_tablespace index_tablespace
```

where

- *user_name* is the user name on the database.
- *password* is the password for this user name on the database.
- *connect_string* is the named SQLNet connection for this database.
- *data_tablespace* is the name of the tablespace where you intend to store the table schema.
- *index_tablespace* is the name of the tablespace where you intend to store the index.

5. Run the scripts to create the Platform Application Center database schema.

```
sqlplus user_name/password@connect_string @create_pac_schema.sql data_tablespace index_tablespace
sqlplus user_name/password@connect_string @create_schema.sql data_tablespace index_tablespace
sqlplus user_name/password@connect_string @init.sql data_tablespace index_tablespace
```

Configure the database connection

Follow these instructions to write the database connection string in the Platform Application Center configuration file `$PERF_TOP/conf/datasource.xml` with encrypted passwords.

Before you begin

You have a user name, password, and URL to access the database.

Procedure

1. If you connected to the UNIX host via **telnet** and are running **xserver** on a local host, set your display environment.

   Test your display by running **xclock** or another X-Windows application.

   If the application displays, your display environment is already set correctly; otherwise, you need to set your display environment.

   - For **csh** or **tcsh**:

     ```
     setenv DISPLAY hostname:0.0
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     DISPLAY=hostname:0.0
     export DISPLAY
     ```

   where *hostname* is your local host.
2. Launch the database configuration tool.

   Run `$PERF_TOP/1.2/bin/dbconfig.sh`.
3. In the **User ID** and **Password** fields, specify the user account name and password with which to connect to the database.
4. In the **JDBC driver** field, select the driver for your database.
5. In the **JDBC URL** field, enter the URL for your database.

   This should be similar to the format given in **Example URL format**.
6. In the **Maximum connections** field, specify the maximum allowed number of concurrent connections to the database server.
7. Click **Test** to test your database connection.
8. Click **OK** to save your settings.

Increase data loader memory for medium and large clusters

About this task

Ensure the Platform Application Center web server and loader have enough memory assigned.

Procedure

1. Log on to the Platform Application Center web server host as root.
2. Set the Platform Application Center environment.
3. Open `$PERF_CONFDIR/wsm/wsm_plc.conf`
4. Set the memory in the parameter JAVA_OPTS to a number larger than the default.

   Change the `-Xms` and `-Xmx` numbers to a higher number. These numbers are in MB and set the minimum and maximum memory that the loader can use. If you reach the maximum number, Java throws an exception.

   - For medium clusters, 50,000 active jobs and a throughput of 10 jobs/second, a maximum memory of 6 GB is required.
   - For large clusters, 500,00 active jobs, and a throughput of 30 jobs/second, a maximum memory of 14 GB is required.

   For example:

   ```
   JAVA_OPTS=-Xms1024m -Xmx14336m -Dcom.sun.management.jmxremote=true
   ```

Start Platform Application Center (with failover)

About this task

When failover is enabled, you must use EGO commands to start Platform Application Center, since EGO services manage Platform Application Center.

Procedure

1. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /share/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . share/pac/profile.platform
     ```

2. Log in to EGO.

   ```
   egosh user logon -u Admin -x Admin
   ```

3. Restart MySQL if you have MySQL failover.

   ```
   egosh service start mysql
   ```

4. Restart Platform Application Center services.

   ```
   egosh service start  WEBGUI jobdt plc purger
   ```

5. Check services have started.

   ```
   egosh service list
   ```

   You should be able to see the `WEBGUI`, `jobdt`, `plc`, `purger` services started.

6. Find the Platform Application Center URL.

   ```
   egosh client view GUIURL_1
   ```

   Make note of the URL. You will need the URL to log in to Platform Application Center.

7. Log in to Platform Application Center.

   Browse to the web server URL and log in to the Platform Application Center using the LSF administrator name and password.

Chapter 9. Install with failover and MySQL failover

Use these instructions to install Platform Application Center on a shared file system with failover and MySQL database failover. The installer automatically creates the MySQL database schema. Oracle database failover is not supported.

Install

Before you begin

See Chapter 2, "New installation requirements," on page 7

Note:

Installation of multiple instances of Platform Application Center in the same location is not supported.

Procedure

1. As root, log on to any host that has access to the LSF environment and the shared file system.
2. Untar the Platform Application Center package you downloaded and navigate to that directory.

   For example:

   ```
   tar -xzvf pac9.1.1_standard_linux-x64.tar.Z
   cd pac9.1.1_standard_linux-x64
   ```
3. Edit `pacinstall.sh` to set your installation parameters.

   The following are required parameters to install Platform Application Center with failover and also enable MySQL database failover:

   - PAC_TOP
   - LSF_ENVDIR
   - MYSQL_JDBC_DRIVER_JAR
   - FAILOVER_HOST
   - PAC_EGO_CONTROL="Y"
   - USE_REMOTE_DB="N"
   - ENABLE_MYSQL_FAILOVER="Y"
   - MYSQL_DATA_DIR
   - MYSQLD_DIR
   - MYSQL_DIR

   Remember:

   You must specify PAC_TOP as a shared directory for failover. The default installation directory is locally on the machine in /opt/pac.
4. Run `pacinstall.sh` to set your environment variables and run **rpm**.

   ```
   # ./pacinstall.sh
   ```

Install in Silent mode

Procedure

1. If you have a password for your MySQL database, set the MySQL password as an environment variable on the host.

   If you do not have a password for your MySQL database, you do not need to sent the environment variable as the installation script assumes a blank password by default.

   For example:

   For csh or tcsh:

   ```
   # setenv MYSQL_ROOT_PASSWORD "test"
   ```

   For sh, ksh, or bash:

   ```
   # export MYSQL_ROOT_PASSWORD="test"
   ```

2. Run `pacinstall.sh` to set your environment variables and run rpm.

   The -s option installs silently and the -y option accepts the license agreement.

   ```
   # ./pacinstall.sh -s -y
   ```

Check your installation

Procedure

Go to the location in which you installed Platform Application Center and check that all files have been installed.

```
# cd /share/pac
# ls -l
total 40
drwxr-xr-x 2 root     root  4096 May  9 00:29 LA
-rwxr-xr-x 1 lsfadmin wheel  139 May  9 00:29 cshrc.platform
drw-rw---- 2 mysql    mysql 4096 May  8 07:44 data
drwxr-xr-x 8 root     root  4096 May  9 00:29 gui
-rw-rw-rw- 1 root     root  5150 May  9 00:29 install.log
drwxrwxr-x 3 root     root  4096 May  9 00:29 jre
drwxr-xr-x 9 root     root  4096 May  9 00:29 perf
-rwxr-xr-x 1 lsfadmin wheel  211 May  9 00:29 profile.platform
drwxr-xr-x 3 root     root  4096 May  9 00:29 properties
```

If you installed in silent mode, you can also check the installation log file `install.log` created in the same directory as Platform Application Center was installed, such as for example, `/share/pac`.

Increase data loader memory for medium and large clusters

About this task

Ensure the Platform Application Center web server and loader have enough memory assigned.

Procedure

1. Log on to the Platform Application Center web server host as root.
2. Set the Platform Application Center environment.
3. Open `$PERF_CONFDIR/wsm/wsm_plc.conf`
4. Set the memory in the parameter JAVA_OPTS to a number larger than the default.

Change the `-Xms` and `-Xmx` numbers to a higher number. These numbers are in MB and set the minimum and maximum memory that the loader can use. If you reach the maximum number, Java throws an exception.

- For medium clusters, 50,000 active jobs and a throughput of 10 jobs/second, a maximum memory of 6 GB is required.
- For large clusters, 500,00 active jobs, and a throughput of 30 jobs/second, a maximum memory of 14 GB is required.

For example:

```
JAVA_OPTS=-Xms1024m -Xmx14336m -Dcom.sun.management.jmxremote=true
```

Start Platform Application Center (with failover and MySQL failover)

About this task

When failover is enabled, you must use EGO commands to start Platform Application Center, since EGO services manage Platform Application Center.

Procedure

1. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /share/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . share/pac/profile.platform
     ```

2. Log in to EGO.

   ```
   egosh user logon -u Admin -x Admin
   ```

3. Restart EGO on the master host.

   Replace *host_name* with the name of your master host.

   ```
   egosh ego restart host_name
   ```

4. Check services have started.

   ```
   egosh service list
   ```

   You should be able to see the `WEBGUI`, `jobdt`, `plc`, `mysql` and `purger` services started.

5. Find the Platform Application Center URL.

   ```
   egosh client view GUIURL_1
   ```

   Make note of the URL. You will need the URL to log in to Platform Application Center.

6. Log in to Platform Application Center.

   Browse to the web server URL and log in to the Platform Application Center using the LSF administrator name and password.

Part 5. Upgrade

Chapter 10. Upgrade when no failover is enabled

Before you begin

See Chapter 3, “Upgrade requirements,” on page 15

About this task

The following steps assume Platform Application Center is installed in `/opt/pac`. Replace with your actual installation directory.

Procedure

1. As root, log on to your existing Platform Application Center host.
2. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /opt/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . /opt/pac/profile.platform
     ```

3. Stop Platform Application Center services.

   ```
   pmcadmin stop
   perfadmin stop all
   ```

4. Check services have stopped.

   ```
   pmcadmin list
   perfadmin list
   ```

   You should be able to see the **WEBGUI**, **jobdt**, **plc**, and **purger** services stopped.

5. Back up your Platform Application Center directory.

   For example:

   ```
   cp -rp /opt/pac /opt/pacbackup
   ```

   This is so that if you ever want to roll back, you can.

6. Back up your database.

   This is so that if you ever want to roll back, you can.

   ```
   mysqldump -u root pac >/share/backup/pac.data
   ```

7. Untar the Platform Application Center package you downloaded.

   For example:

   ```
   tar -xzvf pac9.1.1_standard_linux-x64.tar.Z
   ```

8. Run RPM.

   - Use `--prefix` to install in a directory other than the default `/opt/pac`.
   - MySQL databases only. If a root password is set on the database, set the environment variable `MYSQL_ROOT_PASSWORD=`*yourpassword* before running **rpm -Uvh**

   For example:

   ```
   rpm -Uvh pcc-appcenter-9.1.1-220718.x86_64.rpm
   ```

What to do next

Complete your upgrade by following the steps in Chapter 13, “Post-upgrade configuration,” on page 55

Chapter 11. Upgrade when failover is enabled with a remote database

Before you begin

See Chapter 3, “Upgrade requirements,” on page 15

About this task

Follow these instructions to upgrade when you have failover enabled with a remote MySQL or Oracle database. The following steps assume Platform Application Center is installed in `/share/pac`. Replace with your actual installation directory.

Procedure

1. As root, log on to your existing Platform Application Center host.
2. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /share/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . /share/pac/profile.platform
     ```

3. Stop Platform Application Center services.

   a. Log in to EGO.

      ```
      egosh user logon -u Admin -x Admin
      ```

   b. Stop Platform Application Center services.

      ```
      egosh service stop WEBGUI jobdt plc purger
      ```

   c. Check services have stopped.

      ```
      egosh service list
      ```

      You should be able to see the `WEBGUI`, `jobdt`, `plc`, and `purger` services stopped.

4. Back up your Platform Application Center directory.

   For example:

   ```
   cp -rp /share/pac /share/pacbackup
   ```

   This is so that if you ever want to roll back, you can.

5. Log on to the MySQL host and back up your database.

   This is so that if you ever want to roll back, you can.

   For example:

   ```
   mysqldump -u root pac >/share/backup/pac.data
   ```

6. Untar the Platform Application Center package you downloaded.

   For example:

   ```
   tar -xzvf pac9.1.1_standard_linux-x64.tar.Z
   ```

7. Set USE_REMOTE_DB=Y and run RPM.

   For example:

   ```
   export USE_REMOTE_DB="Y"
   rpm -Uvh pcc-appcenter-9.1.1-220718.x86_64.rpm --prefix /share/pac
   ```

Update your database schema

About this task

Applies to upgrades from Platform Application Center 8.x and 9.1.

Perform this step ONLY if your MySQL database is remotely installed or if you have an Oracle database.

Procedure

1. Untar the schema package.

   ```
   tar -xvf pcc-appcenter-9.1.1-dbschema.tar
   ```

2. Apply changes to your database schema.
   - If you have a MySQL database, run the script in `DBschema/MySQL/Patch/`. Connect to your MySQL database with your existing user name and password.

To upgrade	Run
From 9.1 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`
From 8.3 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;` `mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

From 8.0.2 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac802_to_83.sql;`
	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;`
	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

From 8.0.1 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac801_to_802.sql;`
	`mysql>source DBschema/MySQL/Patch/pac802_to_83.sql;`
	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;`
	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

From 8.0 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac80_to_801.sql;`
	`mysql>source DBschema/MySQL/Patch/pac801_to_802.sql;`
	`mysql>source DBschema/MySQL/Patch/pac802_to_83.sql;`
	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;`
	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

   - If you have an Oracle database, run the script in `/DBschema/Oracle/Patch/`. where
     - *user_name* is the user name on the database.
     - *password* is the password for this user name on the database.
     - *connect_string* is the named SQLNet connection for this database.

To upgrade	Run
From 9.1 to 9.1.1	`sqlplus` *user_name/password@connect_string* `@DBschema/Oracle/Patch/pac91_to_911.sql`
From 8.3 to 9.1.1	`sqlplus` *user_name/password@connect_string* `@DBschema/Oracle/Patch/pac83_to_91.sql` `sqlplus` *user_name/password@connect_string* `@DBschema/Oracle/Patch/pac91_to_911.sql`

To upgrade	Run
From 8.0.2 to 9.1.1	sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac802_to_83.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac83_to_91.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac91_to_911.sql
From 8.0.1 to 9.1.1	sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac801_to_802.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac802_to_83.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac83_to_91.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac91_to_911.sql
From 8.0 to 9.1.1	sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac80_to_801.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac801_to_802.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac802_to_83.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac83_to_91.sql sqlplus *user_name/password@connect_string* @DBschema/Oracle/Patch/pac91_to_911.sql

What to do next

Complete your upgrade by following the steps in Chapter 13, “Post-upgrade configuration,” on page 55

Chapter 12. Upgrade when failover and MySQL failover are enabled

Before you begin

See Chapter 3, “Upgrade requirements,” on page 15

About this task

Follow these instructions to upgrade when you have failover and MySQL failover enabled. The following steps assume Platform Application Center is installed in `/share/pac`. Replace with your actual installation directory.

Procedure

1. As root, log on to your existing Platform Application Center host.
2. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /share/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . /share/pac/profile.platform
     ```

3. Make a copy of your Platform Application Center directory.

   For example:

   ```
   cp -rp /share/pac /share/pacbackup
   ```

   This is so that if you want to roll back, you can.
4. Log on to the MySQL host and back up your database.

   This is so that if you ever want to roll back, you can.

   For example:

   ```
   mysqldump -u root pac >/share/backup/pac.data
   ```

5. Stop Platform Application Center services, including the `mysql` service
   a. Log in to EGO.

      ```
      egosh user logon -u Admin -x Admin
      ```

   b. Stop Platform Application Center services, including `mysql`.

      ```
      egosh service stop WEBGUI jobdt plc purger mysql
      ```

   c. Check services have stopped.

      ```
      egosh service list
      ```

      You should be able to see the `WEBGUI`, `jobdt`, `plc`, `purger`, and `mysql` services stopped.
6. Untar the Platform Application Center package you downloaded.

   For example:

   ```
   tar -xzvf pac9.1.1_standard_linux-x64.tar.Z
   ```

7. Set USE_REMOTE_DB="Y" and run RPM.

   For example:

   ```
   export USE_REMOTE_DB="Y"
   rpm -Uvh --prefix /share/pac pcc-appcenter-9.1.1-220718.x86_64.rpm
   ```

Update your MySQL database schema

About this task

Perform this step ONLY if your MySQL database is remotely installed.

Procedure

1. Untar the schema package.

   ```
   tar -xvf pcc-appcenter-9.1.1-dbschema.tar
   ```

2. Apply changes to your database schema.
   - Run the script in `DBschema/MySQL/Patch/`.

     Connect to your MySQL database with your existing user name and password.

To upgrade	Run
From 9.1 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`
From 8.3 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;` `mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

From 8.0.2 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac802_to_83.sql;`
	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;`
	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

From 8.0.1 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac801_to_802.sql;`
	`mysql>source DBschema/MySQL/Patch/pac802_to_83.sql;`
	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;`
	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

From 8.0 to 9.1.1	`mysql>source DBschema/MySQL/Patch/pac80_to_801.sql;`
	`mysql>source DBschema/MySQL/Patch/pac801_to_802.sql;`
	`mysql>source DBschema/MySQL/Patch/pac802_to_83.sql;`
	`mysql>source DBschema/MySQL/Patch/pac83_to_91.sql;`
	`mysql>source DBschema/MySQL/Patch/pac91_to_911.sql;`

What to do next

Complete your upgrade by following the steps in Chapter 13, “Post-upgrade configuration,” on page 55

Chapter 13. Post-upgrade configuration

Copy entitlement files

Procedure

Copy the Platform Application Center entitlement file into your upgraded installation.

```
cp pac.entitlement $GUI_CONFDIR
```

Additional post-upgrade configuration depending on your version

The following configurations may be required depending on your Platform Application Center version. Look at the list below and complete the steps that apply to your environment.

Applies to	Configuration	Category	Complete this step only...
Upgrades from Platform Application Center 9.1 Upgrades from Platform Application Center 8.x	"Configure HTTPS"	HTTPS	If you were using a secure HTTP connection before upgrading. You will need to re-enable HTTPS.
Upgrades from Platform Application Center 8.x only	"Copy JAVA_OPTS to your existing wsm_plc.conf" on page 57	Data loader memory	If you had manually modified the file `$PERF_CONFDIR/wsm/wsm_plc.conf`.
Upgrades from Platform Application Center 8.x only	"Merge modified configuration files" on page 57	Configuration files	If you had made any modifications to the following configuration files, merge with the new ones: • `$GUI_CONFDIR/pmc.conf` • `$GUI_CONFDIR/navigation` • `$GUI_CONFDIR/wsm_webgui.conf`
Upgrades from Platform Application Center 8.x only	"Migrate job information and job data for done and exited jobs" on page 57	Database	If you want to see information about done and exited jobs in Platform Application Center after the upgrade.
Upgrades from Platform Application Center 8.x only	"Configure your custom reports" on page 58	Standard reports	If you created custom reports. This is so that you can access your custom reports through **Reports** > **Job Reports** or **Reports** > **Resource Reports**

Configure HTTPS

About this task

Applies to upgrades from Platform Application Center 8.x and 9.1.

Perform this step ONLY if you were using a secure HTTP connection before upgrading.

Procedure

1. Log on to your Platform Application Center host as root.
2. Open your `$GUI_CONFDIR/server.xml` file to find out whether you are using Platform Application Center's default keystore and take the appropriate steps depending on your configuration.

Your configuration	What you see in server.xml	Steps to take
You are using Platform Application Center's default keystore and certificate	You are using Platform Application Center's default keystore and certificate if: • The parameter `keystoreFile` is not present in the `server.xml` file OR • The parameter `keystoreFile` points to the default keystore. For example, if you installed Platform Application Center in `/opt/pac`, you would see `keystoreFile="/opt/pac/jre/linux-x86_64/lib/security/cacerts"`	Enable HTTPS: `pmcadmin https enable`
You are using Platform Application Center's default keystore and your own custom certificate	You are using Platform Application Center's default keystore, but you generate your own certificate file and insert into the default keystore if: • The parameter `keystoreFile` is not present in the `server.xml` file OR • The parameter `keystoreFile` points to the default keystore. For example, if you installed Platform Application Center in `/opt/pac`, you would see `keystoreFile="/opt/pac/jre/linux-x86_64/lib/security/cacerts"`	1. Regenerate a new certificate. 2. Import the new certificate into the default keystore.
You are using a custom keystore and certificate	You are using a custom keystore and certificate if: the parameter `keystoreFile` points to your own custom path.	Edit the `server.xml` file and ensure the parameter `keystoreFile` points to your custom keystore path.

Copy JAVA_OPTS to your existing wsm_plc.conf

About this task

Applies to upgrades from Platform Application Center 8.x only.

Perform this step ONLY if you had modified the file `$PERF_CONFDIR/wsm/wsm_plc.conf`.

You will need to copy the parameter JAVA_OPTS from `wsm_plc.conf.rpmnew` to your file.

Procedure

Open `wsm_plc.conf.rpmnew`, copy the JAVA_OPTS parameter and add it to your file `wsm_plc.conf`.

Merge modified configuration files

About this task

Applies to upgrades from Platform Application Center 8.x only.

Procedure

In the configuration directories, ,if you had made any modifications to your configuration files, merge your changes to the new files.
The following is a list of configurations and notes on whether you need to do anything.

Configuration File	Notes®
`$GUI_CONFDIR/pmc.conf`	The upgrade script does not modify your existing file. Check the newly installed file `pmc.conf.new` and add any new parameters to your existing file.
`$GUI_CONFDIR/navigation`	The upgrade script replaces all files under `$GUI_CONFDIR/navigation` and renames files that have been modified from the standard Platform Application Center installation with the suffix `.old`. If you have made any customizations to files under `$GUI_CONFDIR/navigation`, manually merge your changes to the new files.
`$GUI_CONFDIR/wsm_webgui.conf`	If you had made modifications to this file, merge your changes from the `.old` file to the new file.

Migrate job information and job data for done and exited jobs

About this task

Applies to upgrades from Platform Application Center 8.x only.

Information for running, pending, and suspended jobs is retrieved from LSF. For done and exited jobs, however, you need to manually migrate the data if you want to see that information after the upgrade in Platform Application Center.

Procedure

1. Find the Epoch format in milliseconds for the date and time to start retrieving job data.

   Go to http://www.epochconverter.com/ and note down the Epoch timestamp in milliseconds for your start date and time.
2. Log on to the Platform Application Center web server as root.
3. Run the following SQL statement on your database, replacing *timestamp_milliseconds* with your own Epoch value, and replacing *cluster_name* with the name of your actual cluster:

```
insert into CDI_STATUS (CLUSTER_NAME,RECOVER_START_TIME) values ("cluster_name",timestamp_milliseconds);
```

   For example, if your cluster name is cluster1 and your timestamp in milliseconds is 1347740716000, you would enter:

```
insert into CDI_STATUS (CLUSTER_NAME,RECOVER_START_TIME) values ("cluster1",1347740716000);
```

4. Check that your change was made by running the SQL statement:

   ```
   select * from CDI_STATUS;
   ```

   You should be able to see the date you set under RECOVER_START_TIME. For example:

```
+--------------------------+-------------------------------------+
| CLUSTER_NAME | LOADER_START_TIME | RECOVER_START_TIME |
+--------------------------+-------------------------------------+
| CLUSTER1     |     1358264890153 | 1347740716000      |
+--------------------------+-------------------------------------+
```

Configure your custom reports

About this task

Applies to upgrades from Platform Application Center 8.x only.

Perform this step ONLY if you created custom reports. This is required so that you can access your custom reports through **Reports** > **Job Reports** or **Reports** > **Resource Reports**.

Procedure

1. In `$GUI_CONFDIR/custom_reports`, edit each custom report file.
2. Modify the `<Category>` value and specify `job` to organize the custom report under **Job Reports** or `resource` to organize the custom report under **Resource Reports**.

   For example:

   ```
   <Category>job</Category>
   ```

Chapter 14. Start Platform Application Center

Start Platform Application Center (no failover)

Procedure

1. As root, set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /opt/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . opt/pac/profile.platform
     ```

2. Start Platform Application Center services.

   ```
   perfadmin start all
   pmcadmin start
   ```

3. Check services have started.

   ```
   perfadmin list
   ```

   ```
   pmcadmin list
   ```

   You should be able to see the **WEBGUI**, **jobdt**, **plc**, and **purger** services started.

4. Log in to Platform Application Center.

   Browse to the web server URL and log in to the Platform Application Center using the LSF administrator name and password.

   The web server URL is:

   `http://`*`host_name`*`:8080/platform`

   The host name is the Platform Application Center host you specified.

Start Platform Application Center (with failover)

About this task

When failover is enabled, you must use EGO commands to start Platform Application Center, since EGO services manage Platform Application Center.

Procedure

1. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /share/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . share/pac/profile.platform
     ```

2. Log in to EGO.

   ```
   egosh user logon -u Admin -x Admin
   ```

3. Restart MySQL if you have MySQL failover.

   ```
   egosh service start mysql
   ```

4. Restart Platform Application Center services.

   ```
   egosh service start  WEBGUI jobdt plc purger
   ```

5. Check services have started.

```
egosh service list
```

You should be able to see the `WEBGUI`, `jobdt`, `plc`, `purger` services started.

6. Find the Platform Application Center URL.

   ```
   egosh client view GUIURL_1
   ```

   Make note of the URL. You will need the URL to log in to Platform Application Center.

7. Log in to Platform Application Center.

   Browse to the web server URL and log in to the Platform Application Center using the LSF administrator name and password.

Part 6. Tuning

Chapter 15. When is tuning required?

The default Platform Application Center configuration works for small clusters. If you have a medium or large cluster, you will need to tune Platform Application Center for optimal performance.

The cluster sizes outlined below describe the maximum number of jobs, hosts, users for a specific cluster size category.

Item	Small cluster (Up to)	Medium cluster (Up to)	Large cluster (Up to)
Active jobs	5000	50,000	500,000
Job throughput	10,000 jobs/day	100,000 jobs/day	1 million jobs/day
Hosts	100	1000	6000
Active users	50	200	1000
Concurrent users	10	40	200
Time to keep job information and data (default)	14 days	14 days	14 days
Minimum recommended hardware for the Platform Application Center web server	1 CPU, 4 cores each Memory: 8 GB Disk type: Normal	2 CPUs, 4 cores each Memory: 16 GB Disk type: Faster	2 CPUs, 8 cores each Memory: 24 GB Disk type: Faster
Tuning required?	No	Yes	Yes

Chapter 16. Tuning MySQL

At installation

- If the file `etc/my.cnf` exists on the Platform Application web server, nothing is changed in that file.

  Refer to the file `PAC_TOP/gui/3.0/etc/my.cnf.mysql_tuned` and make the appropriate changes to your `etc/my.cnf` file. The file `PAC_TOP/gui/3.0/etc/my.cnf.mysql_tuned` is tuned for medium clusters.
- If the file `etc/my.cnf` does not exist on the Platform Application web server, the new file `/etc/my.cnf` is added. This file is tuned for medium clusters.

Chapter 17. Tuning data loaders

The amount of data logged and loaded into the database from LSF affects how quickly a job is displayed in the **Jobs** page after it is submitted and job information querying.

The following settings reduce the number of events that need to be loaded, and as such increase the speed at which data is displayed in the web interface.

Increase data loader memory so that the loader works properly

1. Log on to the Platform Application Center web server host as root.
2. Set the Platform Application Center environment.
3. Open `$PERF_CONFDIR/wsm/wsm_plc.conf`.
4. Set the memory in the parameter JAVA_OPTS to a number larger than the default.

   Change the `-Xms` and `-Xmx` numbers to a higher number. These numbers are in MB and set the minimum and maximum memory that the loader can use. If you reach the maximum number, Java throws an exception.

   - For medium clusters, 50,000 active jobs and a throughput of 10 jobs/second, a maximum memory of 6 GB is required.
   - For large clusters, 500,00 active jobs, and a throughput of 30 jobs/second, a maximum memory of 14 GB is required.

   For example:

   ```
   JAVA_OPTS=-Xms1024m -Xmx14336m -Dcom.sun.management.jmxremote=true
   ```
5. Restart the plc service.

   If EGO is not enabled:

   a. In the command console, stop the plc service.

      ```
      perfadmin stop plc
      ```

   b. Start the plc service.

      ```
      perfadmin start plc
      ```

   If failover with EGO is enabled:

   a. In the command console, stop the plc service.

      ```
      egosh service stop plc
      ```

   b. Start the plc service.

      ```
      egosh service start plc
      ```

Reduce the number of LSF events logged

If you are not planning on using Standard reports, follow these steps. Standard reports will not work after this configuration is done.

If you are using Platform Analytics for reporting, check the Platform Analytics documentation for additional event types that you may need to add to the ALLOW_EVENT_TYPE parameter.

1. Log on to the LSF master host as the LSF administrator.
2. Set the LSF environment.
3. Edit `lsb.params`.

4. For the parameter ALLOW_EVENT_TYPE, only define the following events. LSF will only log these events.

```
ALLOW_EVENT_TYPE=JOB_NEW JOB_STATUS JOB_FINISH2 JOB_START JOB_EXECUTE JOB_EXT_MSG JOB_SIGNAL JOB_REQUEUE JOB_MODIFY2
JOB_SWITCH METRIC_LOG
```

5. Run **badmin reconfig** to reconfigure mbatchd.

Disable loaders for both Standard reports and Scheduler Dashboard

If you are not planning on using Standard reports or the Scheduler Dashboard, you can disable the LSF event loader.

Neither Standard reports nor the Scheduler Dashboard will work after this configuration is done.

1. Log on to the Platform Application Center web server host as root.
2. Set the Platform Application Center environment.
3. Open `$PERF_CONFDIR/plc/plc_lsf.xml`
4. Set the `lsfeventloader` to `Enable="false"`:

```
<DataLoader Name="lsfeventsloader" Interval="60" Enable="false" LoadXML="dataloader/lsbevents.xml"/>
```

5. Restart the plc service.

   If EGO is not enabled:

   a. In the command console, stop the plc service.
      ```
      perfadmin stop plc
      ```
   b. Start the plc service.
      ```
      perfadmin start plc
      ```

   If failover with EGO is enabled:

   a. In the command console, stop the plc service.
      ```
      egosh service stop plc
      ```
   b. Start the plc service.
      ```
      egosh service start plc
      ```

Disable loaders only for Standard reports

If you want to use the Scheduler Dashboard but do not need Standard reports, complete these steps.

Standard reports will not work after this configuration is done.

1. Log on to the Platform Application Center web server host as root.
2. Set the Platform Application Center environment.
3. Open `$PERF_CONFDIR/dataloader/lsbevents.properties`.
4. For ALLOW_EVENT_TYPE, remove everything and only enable the metric log:
   ```
   ALLOW_EVENT_TYPE=METRIC_LOG
   ```
5. Restart the plc service.

   If EGO is not enabled:

   a. In the command console, stop the plc service.
      ```
      perfadmin stop plc
      ```
   b. Start the plc service.
      ```
      perfadmin start plc
      ```

   If failover with EGO is enabled:

a. In the command console, stop the plc service.
   ```
   egosh service stop plc
   ```
b. Start the plc service.
   ```
   egosh service start plc
   ```

Chapter 18. Tuning the Web server

Increase the memory on the web server

1. Open `$GUI_CONFDIR/wsm_webgui.conf` and set MEM_HIGH_MARK and JAVA_OPTS.
   a. Set MEM_HIGH_MARK to a number higher than 3000 if you have a large number of jobs.

      This parameter indicates the maximum memory the web server can reach in MB, before the process is terminated.

      - For medium clusters, the default 3 GB is adequate.
      - For large clusters, set this parameter to 8 GB.

   b. If you change MEM_HIGH_MARK to a higher number, you must set a higher number for JAVA_OPTS.

   For example, if you change HIGH_MEM_MARK to 8 GB, you need to change the JAVA_OPTS maximum memory -Xmx to 8 GB.

```
MEM_HIGH_MARK=8000
JAVA_OPTS="-server -Xms2048m -Xmx8000m -XX:NewSize=128m -XX:MaxNewSize=256m -XX:PermSize=128m -XX:MaxPermSize=256m
-Xgcpolicy:gencon"
```

2. Restart Platform Application Center.
   - If EGO is disabled, run **pmcadmin stop** then **pmcadmin start** from the command line.
   - If EGO is enabled, run **egosh service stop WEBGUI** then **egosh service start WEBGUI** from the command line.

Set the number of concurrent users

The default configuration of 500 threads, set with the parameter CATALINA_MAX_THREADS in `$GUI_CONFDIR/wsm_webgui.conf`, is adequate for 200 concurrent users.

If you have more users that are going to log on to Platform Application Center, you need to increase the value of this parameter so that new connections do not fail.

As a rule of thumb, each user uses 2 to 3 threads, so set the parameter CATALINA_MAX_THREADS to serve the number of concurrent users at your site. For example, if you have 300 concurrent users, you would set CATALINA_MAX_THREADS=600.

1. Open `$GUI_CONFDIR/wsm_webgui.conf`.
2. Set the number of concurrent users with CATALINA_MAX_THREADS.

   For example:

   ```
   CATALINA_MAX_THREADS=600
   ```

3. Restart Platform Application Center.
   - If EGO is disabled, run **pmcadmin stop** then **pmcadmin start** from the command line.
   - If EGO is enabled, run **egosh service stop WEBGUI** then **egosh service start WEBGUI** from the command line.

Purge data more often

How much data is in the database affects job querying performance.

The parameter that controls job information and data purging for done and exited jobs is FINISH_JOB_TIME_TO_LIVE in `$GUI_CONFDIR/pmc.conf`.

The default for FINISH_JOB_TIME_TO_LIVE is 14 days. Make it smaller to reduce the database table size and speed up job querying.

Note that the value of FINISH_JOB_TIME_TO_LIVE must be larger than 1 day and larger than the parameter MOVE_FINISHED_JOBS_AFTER in `$PERF_CONFDIR/dataloader/commonjobloader.properties`.

The value you set for FINISH_JOB_TIME_TO_LIVE depends on your users' expectations and for how long users need to keep information and data for done and exited jobs.

If in doubt, set this parameter to a higher number because after the FINISH_JOB_TIME_TO_LIVE time period is reached, job information and data is permanently removed and cannot be recovered.

1. Open `$GUI_CONFDIR/pmc.conf`.
2. Reduce the number of days from 14 to any desired number.

   For example:

   ```
   FINISH_JOB_TIME_TO_LIVE=10
   ```
3. Restart Platform Application Center.
   - If EGO is disabled, run **pmcadmin stop** then **pmcadmin start** from the command line.
   - If EGO is enabled, run **egosh service stop WEBGUI** then **egosh service start WEBGUI** from the command line.

Disable job status change notifications

By default, job status change notifications are disabled. If you enable job status change notifications, the system periodically checks the job status, making the database and the web server very busy. It is best to disable job status change notifications if you do not use this feature.

1. Open `$GUI_CONFDIR/pmc.conf`.
2. Set the parameter ENABLE_JOB_NOTIFICATION=N.
3. Restart Platform Application Center.
   - If EGO is disabled, run **pmcadmin stop** then **pmcadmin start** from the command line.
   - If EGO is enabled, run **egosh service stop WEBGUI** then **egosh service start WEBGUI** from the command line.

Disable loading of LSF user groups

By default, Platform Application Center automatically loads user groups defined in LSF. This is controlled with the parameter ENABLE_USERGROUP in `$GUI_CONFDIR/pmc.conf`.

LSF user groups are loaded when Platform Application Center is started up.

If LSF has complex user groups, this information can take a long time to load into Platform Application Center.

If you are not using LSF user groups to control job permissions in Platform Application Center, you can disable automatic loading of LSF user groups.

Note that after you disable this feature, you will no longer be able to manage access to Platform Application Center pages and features by using user groups in Platform Application Center.

1. Open `$GUI_CONFDIR/pmc.conf`.
2. Set ENABLE_USERGROUP=N.
3. Restart Platform Application Center.
   - If EGO is disabled, run **pmcadmin stop** then **pmcadmin start** from the command line.
   - If EGO is enabled, run **egosh service stop WEBGUI** then **egosh service start WEBGUI** from the command line.

Increase the number of file descriptors for the web server

To meet the performance requirements of a large cluster, increase the maximum number of open files for the web server.

1. Open `PAC_TOP/gui/3.0/bin/pmcadmin`.
2. Add ulimit -n 65535 before CATALINA_OPTS:

```
# ------------------------------------------------------------------------------
#set the init environment
#-------------------------------------
#show report without x11
ulimit -n 65535
CATALINA_OPTS="-Djava.awt.headless=true"
```

3. Restart Platform Application Center.
   - If EGO is disabled, run **pmcadmin stop** then **pmcadmin start** from the command line.
   - If EGO is enabled, run **egosh service stop WEBGUI** then **egosh service start WEBGUI** from the command line.

Part 7. Using an Oracle database

Chapter 19. Create an Oracle database schema

About this task

Follow these instructions to create a database schema in Oracle for Platform Application Center data.

Procedure

1. Untar the schema package.

   ```
   tar -xvf pcc-appcenter-9.1.1-dbschema.tar
   ```

2. Go to the Oracle directory.

   ```
   cd DBschema/Oracle
   ```

3. In the command console, run the script to create the EGO database schema.

```
sqlplus user_name/password@connect_string @create_egobasic_rawdata_schema.sql
data_tablespace index_tablespace
```

   where

   - *user_name* is the user name on the database.
   - *password* is the password for this user name on the database.
   - *connect_string* is the named SQLNet connection for this database.
   - *data_tablespace* is the name of the tablespace where you intend to store the table schema.
   - *index_tablespace* is the name of the tablespace where you intend to store the index.

4. Run the script to create the LSF database schema.

```
sqlplus user_name/password@connect_string @create_lsfbasic_rawdata_schema.sql
data_tablespace index_tablespace
```

   where

   - *user_name* is the user name on the database.
   - *password* is the password for this user name on the database.
   - *connect_string* is the named SQLNet connection for this database.
   - *data_tablespace* is the name of the tablespace where you intend to store the table schema.
   - *index_tablespace* is the name of the tablespace where you intend to store the index.

5. Run the scripts to create the Platform Application Center database schema.

```
sqlplus user_name/password@connect_string @create_pac_schema.sql data_tablespace index_tablespace
sqlplus user_name/password@connect_string @create_schema.sql data_tablespace index_tablespace

sqlplus user_name/password@connect_string @init.sql data_tablespace index_tablespace
```

6. If you are migrating your Platform Application Center MySQL database to Oracle, follow the data migration instructions at:

   ```
   http://www.oracle.com/technetwork/developer-tools/sql-developer/omwb-getstarted-093461.html
   ```

Chapter 20. Configure the database connection

Follow these instructions to write the database connection string in the Platform Application Center configuration file `$PERF_TOP/conf/datasource.xml` with encrypted passwords.

Before you begin

You have a user name, password, and URL to access the database.

Procedure

1. If you connected to the UNIX host via **telnet** and are running **xserver** on a local host, set your display environment.

   Test your display by running **xclock** or another X-Windows application.

   If the application displays, your display environment is already set correctly; otherwise, you need to set your display environment.

   - For **csh** or **tcsh**:

     `setenv DISPLAY hostname:0.0`

   - For **sh**, **ksh**, or **bash**:

     ```
     DISPLAY=hostname:0.0
     export DISPLAY
     ```

   where *hostname* is your local host.
2. Launch the database configuration tool.

   Run `$PERF_TOP/1.2/bin/dbconfig.sh`.
3. In the **User ID** and **Password** fields, specify the user account name and password with which to connect to the database.
4. In the **JDBC driver** field, select the driver for your database.
5. In the **JDBC URL** field, enter the URL for your database.

   This should be similar to the format given in **Example URL format**.
6. In the **Maximum connections** field, specify the maximum allowed number of concurrent connections to the database server.
7. Click **Test** to test your database connection.
8. Click **OK** to save your settings.

Part 8. Uninstall Platform Application Center

Chapter 21. Uninstall

Follow these instructions to uninstall Platform Application Center.

About this task

Prerequisites:

- You must be root.
- You must have the root MySQL database password.

When you uninstall, binaries are uninstalled as well as the MySQL database(if it was locally installed on the host). If you installed Platform Application Center with failover, files will also be uninstalled from the shared file system and failover hosts.

Important:

If you have a remote MySQL database or an Oracle database, you will need to manually remove those databases.

Procedure

1. As root, log on to the host on which you have installed Platform Application Center.
2. Set your Platform Application Center environment:

   For example:

   - For **csh** or **tcsh**:

     ```
     % source /opt/pac/cshrc.platform
     ```

   - For **sh**, **ksh**, or **bash**:

     ```
     $ . /opt/pac/profile.platform
     ```

3. Run `pacuninstall.sh` to uninstall Platform Application Center.

   ```
   # pacuninstall.sh
   ```

   To perform a silent uninstallation, use `pacuninstall.sh -s`.

Part 9. Appendixes

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