# Upgrading Platform™ Analytics™

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CHAPTER 1

# Platform Analytics upgrade packages

The Platform Analytics 7.5 upgrade packages allow you to upgrade your Platform Analytics system from version 7.1 to version 7.5. The upgrade packages include updates to the Oracle database schema, the Analytics node, and the Analytics server. The upgrade packages create backups of the previous version, allowing you to roll back the upgrade packages if necessary.

You do not need a separate license for Platform Analytics 7.5 if you already have a license for Platform Analytics 7.1.

The Analytics upgrade packages will help improve the upgrade process:

- The time to migrate the Oracle database schema and Analytics data depends on the performance of your database host and the amount of Analytics-related data in the database. For example, it will take approximately one to two hours to migrate the database schema and data for a cluster with 1.5 million jobs a day, 2000 records per sampling interval, and a data retention period of two weeks for raw data, 26 weeks for hourly data, and 52 weeks for daily data.
- Upgrading the Analytics node will typically take 15 minutes. The data loaders will be down for up to five minutes during this time while being upgraded.
- Upgrading the Analytics server will typically take 15 minutes.

## Customization issues

The Platform Analytics 7.5 upgrade packages can handle certain customizations that you applied to certain built-in files.

Refer to *README for Upgrading Platform Analytics (UNIX)* and *README for Upgrading Platform Analytics (Windows)* to see the lists of files in the UNIX (Linux and Solaris) or Windows hosts that are changed as a result of the upgrade. If you have customizations in any of the files that will be changed in the Analytics upgrade, you need to make note of these files and check them after the upgrade to see if the customizations are still in place. If they are not, you need to restore the customizations to these files.

### Database schema

The following customizations to the database schema will remain in the upgraded database schema:

- New tables added to the Analytics database
- New columns added to built-in tables in the Analytics database

The Platform Analytics database schema upgrade package cannot handle certain customizations to the database schema. After the upgrade, your Analytics node and server hosts may encounter problems, which are sent as events. The following customizations may result in problems after the upgrade:

- Dropped columns in built-in tables
- Modified built-in table names
- Modified column names or types in built-in tables

## Analytics node

Customizations to the following configuration files (all in the `conf` directory) will remain in the upgraded Analytics node:

- `datasource.xml`
- `log4j.properties`
- `plc.xml`
- `perf.conf`
- All `*.properties` files in the `dataloader` subdirectory.
- All `*.xml` files in the `plc` subdirectory.
- `wsm_plc.conf` in the `wsm` subdirectory.

## Analytics server

Customizations to the following configuration files (all in the `conf` directory) will remain in the upgraded Analytics server:

- `datasource.xml`
- `log4j.properties`
- `Config.xml`
- `ItemLists.xml`
- `pi.conf`
- All `*.xml` files in the `purger` subdirectory.
- `Package.xml` in the `packages/workload` subdirectory.

CHAPTER

# 2

# Upgrade Analytics

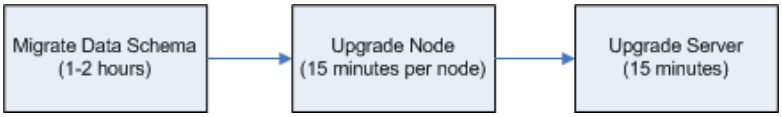
Upgrade Analytics from version 7.1 to version 7.5.

**Prerequisites:** Check the following:

- The Analytics server and node hosts are running Platform Analytics 7.1.

  The Analytics upgrade packages do not work with any other version.
- The Analytics server and node hosts meet the detailed system and software requirements for Platform Analytics 7.5.

  Refer to the *Release Notes for Platform Analytics* for the latest requirements.

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# Obtain the necessary upgrade package files

1 Obtain the necessary files for upgrading Platform Analytics.
   - Platform Analytics server upgrade package
     - UNIX (Solaris or Linux): `analytics`*`version`*`_server_upgrade_`*`platform`*`.bin`
     - Windows: `analytics`*`version`*`_server_upgrade_`*`platform`*`.exe`
   - Platform Analytics node upgrade package
     - UNIX (Solaris or Linux): `analytics`*`version`*`_node_upgrade_`*`platform`*`.bin`
     - Windows: `analytics`*`version`*`_node_upgrade_`*`platform`*`.exe`
   - Platform Analytics database schema upgrade package

     `analytics`*`version`*`_upgrade_dbschema.tar`

# Migrate the database schema

Migrate the Oracle database schema and existing data for Analytics.

**Prerequisites:** The user on the database must have the following:

- ❏ Roles: Connect and resource.
- ❏ System privileges: Create view.

Migrate the Oracle database schema and the data to prepare the database host for the Analytics upgrade. The typical data migration may take one to two hours, depending on the performance of your database host and the amount of Analytics-related data in the database.

1. Log into any host with access to the database host.
2. Extract the database schema upgrade package (`analytics`*`version`*`_upgrade_dbschema.tar`).
3. Navigate to the directory containing your database schema scripts.
4. Run the script using `sqlplus` to update the database schema and migrate the existing data.

   `sqlplus` *user_name*`/`*password*`@`*connect_string* `@pa`*version_number*`upd.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.
   - *version_number* is the version of Analytics to which you are upgrading.
   - *data_tablespace* is the name of the tablespace where you intend to store the data. This must be the same tablespace as the previous version of Analytics.
   - *index_tablespace* is the name of the tablespace where you intend to store the index. This must be the same tablespace as the previous version of Analytics.
5. Verify that you migrated the database schema successfully.
   a. Verify that there were no errors in the `sqlplus` output.
   b. Verify that the OBJECT_VERSION columns in the SYS_OBJECT_INFO table all have a value of 7.5.

# Upgrade the Analytics server

Upgrade the Analytics server on a UNIX (Solaris or Linux) or Windows host.

**Prerequisites:** Check the following:

- ❏ You migrated the Oracle database schema to Analytics 7.5.

IMPORTANT: The Analytics upgrade package cannot detect whether you updated the database schema. If you proceed with the upgrade without migrating the database schema, some Analytics server tasks will encounter problems and send events.

- ❏ If you are upgrading on a UNIX (Solaris or Linux) host, your host must have access to the X-Windows environment:
  - ❏ If you are connected to the Analytics server host locally, the host must be running X-Windows.
  - ❏ If you are connected to the Analytics server host via `telnet`, you must be running `xserver` on your local host.

Upgrade the Analytics server using the Analytics server upgrade package. The upgrade package will make backups of the previous version of Analytics before upgrading your server to the latest version.

1. Log into the Analytics server host with the same account that you used to install the previous version of Analytics.
2. If you connected to the UNIX (Solaris or Linux) 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`:

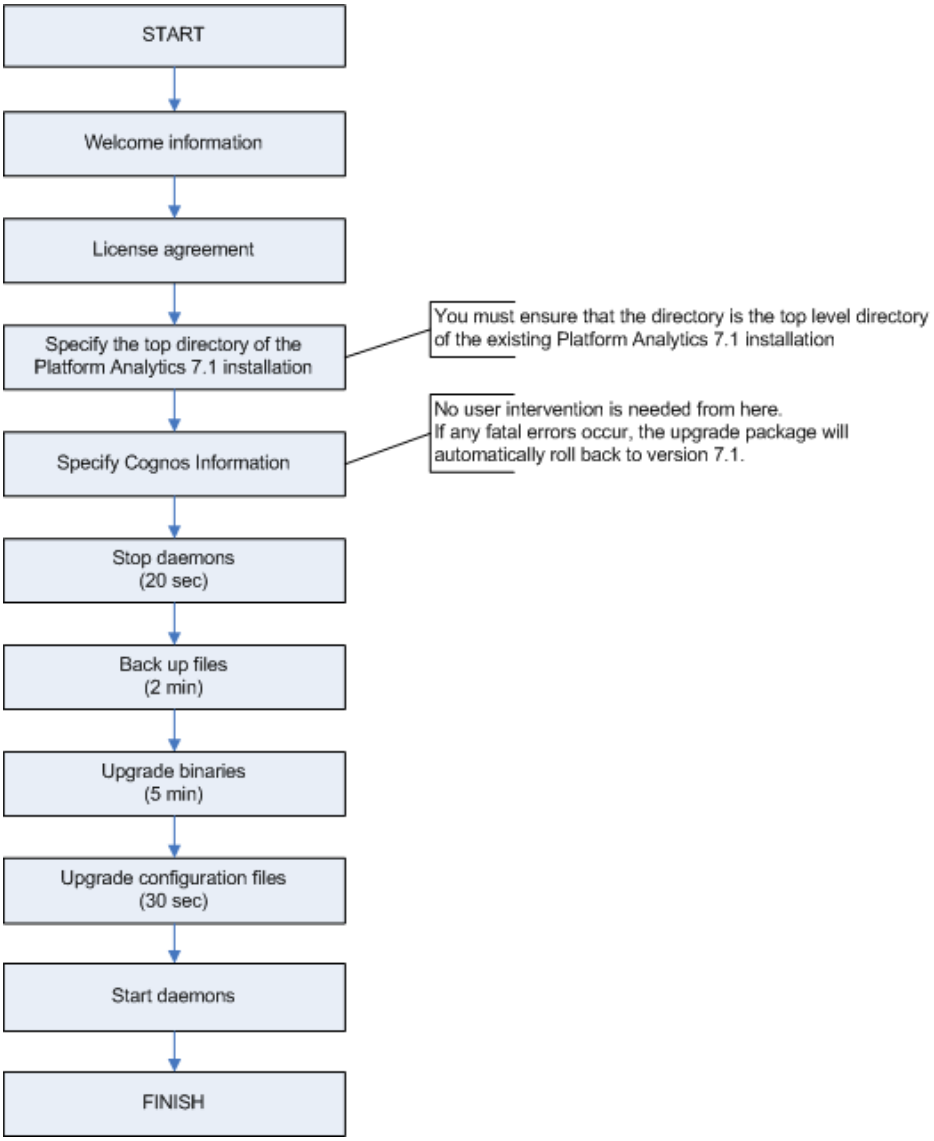
     ```
     setenv DISPLAY hostname:0.0
     ```

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

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

   where *`hostname`* is your local host.
3. Run the Analytics server upgrade package.
   - UNIX (Solaris or Linux):
     `./analytics`*`version`*`_server_upgrade_`*`platform`*`.bin`
   - Windows: `analytics`*`version`*`_server_upgrade_`*`platform`*`.exe`
4. Follow the dialog prompts to complete the upgrade.

   The following diagram illustrates the dialog for the Analytics server upgrade package:




5 If you are upgrading on a UNIX (Solaris or Linux) host, start the Analytics server.

Run `daemons.sh start` from the *ANALYTICS_TOP*`/bin` directory.

The changed files from your previous version of Analytics are backed up to the following location:

- UNIX (Solaris or Linux): *ANALYTICS_TOP*`/upgrade_backup/`*version_number*
- Windows: *ANALYTICS_TOP*`\upgrade_backup\`*version_number*

**Postrequisites:** Verify that you have successfully upgraded the Analytics server.

# Verify the Analytics server upgrade

Verify that you have successfully upgraded the Analytics server on a UNIX (Solaris or Linux) or Windows host.

**Prerequisites:** You upgraded the Analytics server and are still logged into the host.

1. Verify that there are no errors generated in the event log file after the upgrade.

   The event log file is named `event.log.`*`host_name`* and is located in the PERF log directory:

   - UNIX (Solaris or Linux): *`ANALYTICS_TOP`*`/log`
   - Windows: *`ANALYTICS_TOP`*`\log`

2. Start the Analytics Console.

   - UNIX (Solaris or Linux): *`ANALYTICS_TOP`*`/bin/runconsole.sh`
   - Windows: **Start > Programs > Platform Analytics *version_number* Server> Platform Analytics *version_number* Console**

3. Click **Scheduled Tasks** in the navigation tree and verify that there are no failed tasks.

4. After at least an hour, verify that the relevant cubes are successfuly upgraded.

   You need to wait at least one hour for Analytics to perform aggregation at least once after the upgrade.

   a. Access the Cognos server web interface by entering the `/cognos` subdirectory of your Analytics server domain name in your browser.

      For example, if your Analytics server host is `hostA` in the `domain.example.com` domain, enter `http://hostA.domain.example.com/cognos` in your browser. If this does not work, try using the web server port number. For the default port of 80, try `http://hostA.domain.example.com:80/cognos`.

   b. In the navigation tree, select **NewsIndex > Platform Analytics > Cubes**.

   c. Click **Hourly Hardware cube** and verify the upgrade.

      The cube should open without errors and show the following new dimensions in the navigation tree:

      - # of CPUs per Host
      - # of Cores per CPU
      - # of Threads per Core

      When expanded in the navigation tree, each dimension should show values that are relevant to your LSF cluster.

   d. Click **Return to Source**, then click **Hourly Workload cube** and verify the upgrade.

      The cube should open without errors and show the following new dimensions in the navigation tree:

      - Application Tag
      - # of CPUs per Host

- # of Cores per CPU
- # of Threads per Core

When expanded in the navigation tree, each dimension should show values that are relevant to your LSF cluster.

e Click **Return to Source**, then click **Hourly License Utilization cube** and verify the upgrade.

The cube should open without errors. Clicking **MEASURES** in the navigation tree should show the new measure "# of reserved licenses by server". If you have reserved licenses for a feature, this measure should show a relevant value.

f Open various cube views and verify that the data is correct.

5 If your Analytics installation has customizations, check that the customizations are still present.

# Upgrade the Analytics node

Upgrade the Analytics node on a UNIX (Solaris or Linux) or Windows host.

**Prerequisites:** Check the following:

- ❏ You migrated the Oracle database schema to Analytics 7.5.

  IMPORTANT: The Analytics upgrade package cannot detect whether you updated the database schema. If you proceed with the upgrade without migrating the database schema, the Analytics data loaders will encounter problems and send events.

- ❏ If you are upgrading on a UNIX (Solaris or Linux) host, your host must have access to the X-Windows environment:
  - ❏ If you are connected to the intended Analytics node host locally, the host must be running X-Windows.
  - ❏ If you are connected to the intended Analytics node host via `telnet`, you must be running `xserver` on your local host.

Upgrade the Analytics node using the Analytics node upgrade package. The upgrade package will make backups of the previous version of Analytics before upgrading your node to the latest version.

The upgrade package stops the Analytics data loaders to upgrade these components. These data loaders will not be stopped for longer than five minutes under normal circumstances.

1. Log into the Analytics node host with the same account that you used to install the previous version of Analytics.

   Log in with the same account that you used to install the previous version of Analytics

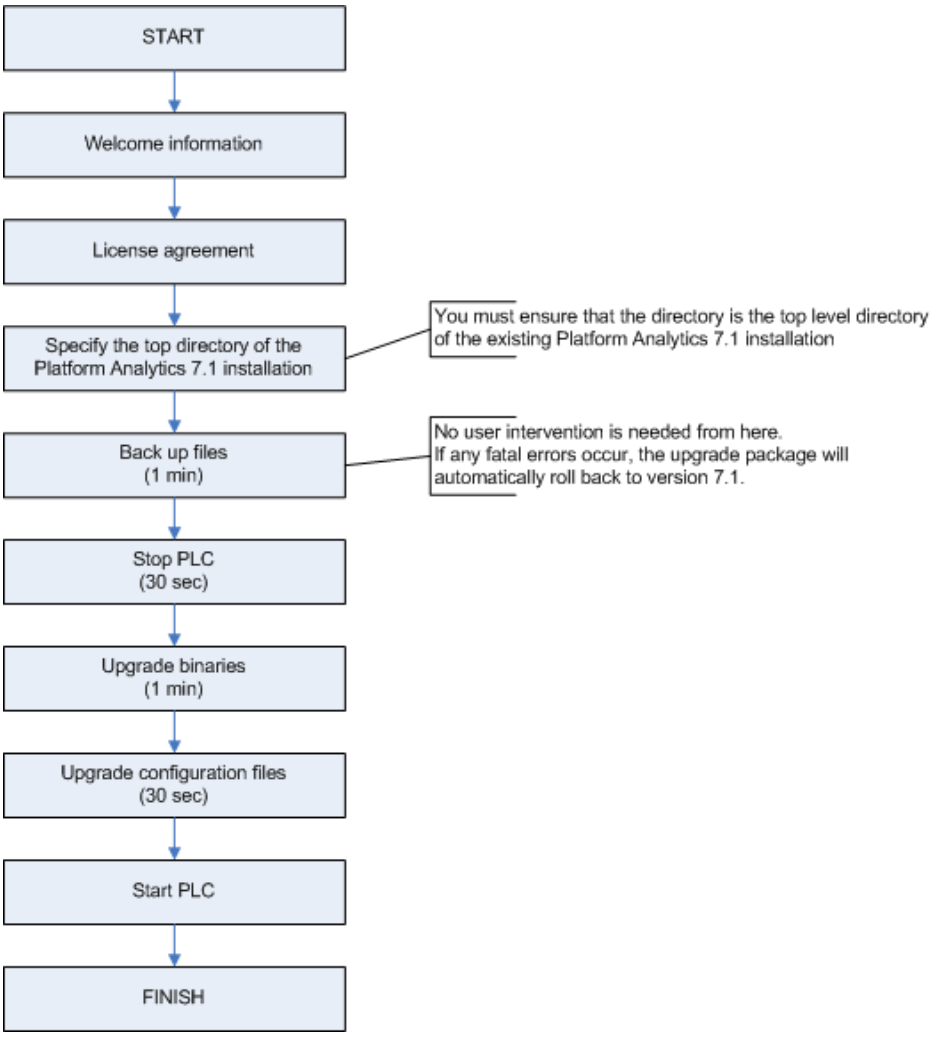
2. If the Analytics node is running multiple loader controllers, manually shut down all loader controllers except for the one named "`plc`", which is the original loader controller service.

   `perfadmin stop` *`loader_controller_name`*

3. Run the Analytics node upgrade package.
   - UNIX (Solaris or Linux): `./analytics`*`version`*`_node_upgrade_`*`platform`*`.bin`
   - Windows: `analytics`*`version`*`_node_upgrade_`*`platform`*`.exe`

4. Follow the dialog prompts to complete the upgrade.

   The following diagram illustrates the dialog for the Analytics node upgrade package:




5 If you are upgrading on a UNIX (Solaris or Linux) host, source the PERF environment.

- For `csh` or `tcsh`: `source` *`ANALYTICS_TOP`*`/conf/cshrc.perf`
- For `sh`, `ksh`, or `bash`: `.` *`ANALYTICS_TOP`*`/conf/profile.perf`

6 Verify that the `plc` service has started.

Run `perfadmin list` and verify that `plc` is running.

7 If the `plc` service has not already started, manually start the `plc` service.

```
perfadmin start plc
```

8 If the Analytics node is running multiple loader controllers, manually start all loader controllers except for "`plc`", which is the original loader controller service.

```
perfadmin start loader_controller_name
```

9 Verify that you upgraded the Analytics node successfully.

a Verify that the data loaders are running.

- UNIX (Solaris or Linux): `plcclient.sh -s`

- Windows: `plcclient -s`

b Verify that there are no errors in the loader controller log file.

The loader controller log file is named `plc.log.`*`host_name`* and is located in the PERF log directory:

- UNIX (Solaris or Linux): *`ANALYTICS_TOP`*`/log`
- Windows: *`ANALYTICS_TOP`*`\log`

c After at least one hour, verify that there are no errors in any of the data loader log files.

You need to wait at least one hour because this is the longest data sampling interval of the data loaders.

The data loader log files are located in the `dataloader` subdirectory of the PERF log directory:

- UNIX (Solaris or Linux): *`ANALYTICS_TOP`*`/log/dataloader`
- Windows: *`ANALYTICS_TOP`*`\log\dataloader`

The changed files from your previous version of Analytics are backed up to the following location:

- UNIX (Solaris or Linux): *`ANALYTICS_TOP`*`/upgrade_backup/`*`version_number`*
- Windows: *`ANALYTICS_TOP`*`\upgrade_backup\`*`version_number`*

**Postrequisites:** Verify that you have successfully upgraded the Analytics node.

# Verify the Analytics node upgrade

Verify that you have successfully upgraded the Analytics node on a UNIX (Solaris or Linux) or Windows host.

**Prerequisites:** You upgraded the Analytics node and are still logged into the host.

1. Verify that the data loaders are running.
   - UNIX (Solaris or Linux): `plcclient.sh -s`
   - Windows: `plcclient -s`
2. After at least one hour, verify that there are no errors in any of the data loader log files.

   You need to wait at least one hour because this is the longest data sampling interval of the data loaders.

   The data loader log files are located in the `dataloader` subdirectory of the PERF log directory:
   - UNIX (Solaris or Linux): *ANALYTICS_TOP*`/log/dataloader`
   - Windows: *ANALYTICS_TOP*`\log\dataloader`
3. Verify that there are no errors in the loader controller log file.

   The loader controller log file is named `plc.log.`*host_name* and is located in the PERF log directory:
   - UNIX (Solaris or Linux): *ANALYTICS_TOP*`/log`
   - Windows: *ANALYTICS_TOP*`\log`