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How to Restore a Galaxy if the Galaxy Repository is Lost

LEGACY TECH NOTE

675

SUMMARY

This Tech Note outlines how to restore a Galaxy if the Galaxy Repository (GR) is lost, without having to redeploy the entire Galaxy.

SITUATION

Application Versions

- Industrial Application Server 2.1 and later.
- Wonderware Application Server 3.0 and later.

Prerequisites

It is IMPORTANT to NOTE that this *Tech Note* only applies when the following conditions are true:

- You must have a current Galaxy backup (.cab file) to restore from.
- All objects are in the same state of deployment.
- No modifications have been applied to the objects, i.e. no new script changes, no new objects.

Note: While the system is at a known good state, create a backup of the Galaxy in its running state (Deployed). If your backup objects that are in a different state, you will be required to re-deploy any Platforms that have objects in a mis-matched state.

It is also very important to note that the version of the Galaxy that is restored after a GR failure must be EXACTLY the same version that is currently deployed. If objects have been changed and redeployed after a backup has been made and that backup is restored, Galaxy corruption will result.

Important Terms and Concepts

- **GR Node:** Galaxy Repository, The node that contains the Galaxy Database.
- **Platform ID:** Unique number given to each Platform in the Galaxy.
- **PlatformMapping.xml:** XML file that is used to coordinate with each Platform in the galaxy.

How Platform Mapping Works

The remote Platform IDs are kept in two locations: the Registry, and in **PlatformMapping.xml**.

PlatformMapping.xml is updated when the GR Node notices a change in the registry
[HKEY_LOCAL_MACHINE\SOFTWARE\Archestra\Framework\Platform\PlatformNodes] (32 bit OS)
 or **[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432\Archestra\Framework\Platform\PlatformNodes]** (64 bit OS). Registry changes occur when a Platform is deployed/undeployed. The GR Node updates PlatformMapping.xml locally and then sends it out to all deployed Platforms, which updates the remote Platforms' registry.

Backing Up a Galaxy and Gathering Platform Information

This section covers how to perform a Galaxy Backup from the Galaxy Database Manager. These steps can be found in the System Management Console Help files but are included in this *Tech Note* in case the GR node is unavailable.

It is not necessary to undeploy the Galaxy before the backup is performed. Keep in mind that the deployment status of each object will be included in the backup. So if an object is deployed when the backup is performed, it will be displayed as Deployed when it is restored.

Once changes are made to a Galaxy, a Galaxy Backup should be performed. This will ensure that the most recent version of a Galaxy is restored in the event that the GR is lost.

Backing Up the Galaxy

1. In the console tree of the System Management Console (SMC), click **Galaxy Database Manager**. The **Details** pane displays all galaxies and the nodes on which they reside.
2. In the Details pane, select the Galaxy you want to back up.
3. Select **Action** from the main menu, then **Backup**.
4. Read the warning message. Note that no Write operations are allowed to the GR while the backup process occurs. If write activity is occurring, you should back up the Galaxy at a later time.
5. Click **Yes** to continue backing up or **No** to terminate the backup function. If you click Yes, continue with Step 6 (below).
6. Enter the path and filename (.cab extension) of the backup file you want to create. You can also use the browse button to explore for a file and/or location.
7. To continue, click **Backup**. To terminate the backup function, click **Cancel**. If you click Backup, continue with step 8 (below).
8. When the Backup operation is finished, click **OK**.

Gathering Platform Information

This *Tech Note* includes the following methods to gather Platform Mapping information. You can select any of the following methods.

Method 1: Gathering Platform Information from the GR Node

1. Open a blank document in Notepad.
2. Copy the following lines and paste them into Notepad. (For 64 bit OS, enter "HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ArchestrA\Framework\Platform\PlatformNode"s below)

```
Windows Registry Editor Version 5.00
regedit /E c:\PFMapIDs%date:~4,2%%date:~7,2%%date:~10,4%.reg
"HKEY_LOCAL_MACHINE\SOFTWARE\ArchestrA\Framework\Platform\PlatformNodes"
```

Note: This file creates a .reg file with the name of **PFMapIDsMMDDYYYY.reg**. It will create it on the C: drive. You can change the location by modifying the highlighted area of the script to a different location.

3. Select **File/Save as** from the Notepad menu.
4. In the **Save as type** field, select **All Files**.
5. In the **File name** field, type **BackupPF.bat**.
6. Run the .bat file to create and put the **PFMapIDsMMDDYYYY.reg** file in the directory contained in the .bat file.

Method 2: Use Application Server Script to Gather Platform Information

Do the following *on the GR Node*:

1. Create the BackupPF.bat (Method 1 steps 1-5).
2. Create an **Integer UDA** with the name of **MyHour**.
3. Create a **Execute** script with the Trigger Type of **Periodic** and a Trigger period of **00:01:00.000000** (1 hour) .
4. Copy the following into the script editor:

```
dim currenttime as system.datetime;
currenttime = now();
me.MyHour = currenttime.hour;
```

5. Create an **Execute** script with the Trigger Type of **Data Change Script** and an expression of **me.MyHour == 1**. Trigger type is **On True**.

Note: This will run at 1:00 a.m. each day.

6. Copy the following into the script editor:

```
Dim StartObj as System.Diagnostics.Process;

StartObj= new System.Diagnostics.Process;
StartObj.StartInfo.FileName = "c:\BackupPF.bat";
StartObj.StartInfo.WindowStyle = System.Diagnostics.ProcessWindowStyle.Normal;
StartObj.Start();
```

Now the **PFMapIDsMMDDYYYY.reg** file will be created on the c:\ location contained in the .bat file.

Note: If this script ran on a remote Platform and you wish to use its **PFMapIDsMMDDYYYY.reg** file on the GR Restore, you must follow steps 4-5

in Method #3. Failure to do so will result may result in galaxy corruption.

Method 3: Gathering Platform Information from a Remote Platform

You can encounter a situation where the Platform mapping file was *not* backed up on the GR node when the Galaxy backup was done. You can run the BackupPF.bat file on the remote Platform in the Galaxy, but you will need to modify the file before you can restore it on the GR node.

1. Run the **BackupPF.bat** (Method 1 steps 1-5).
2. Locate the **PFMapIDsMMDDYYYY.reg** file that was created.
3. Right-click it and click **Open with Notepad**.
4. Delete the area that is marked in red (Figure 1 below):

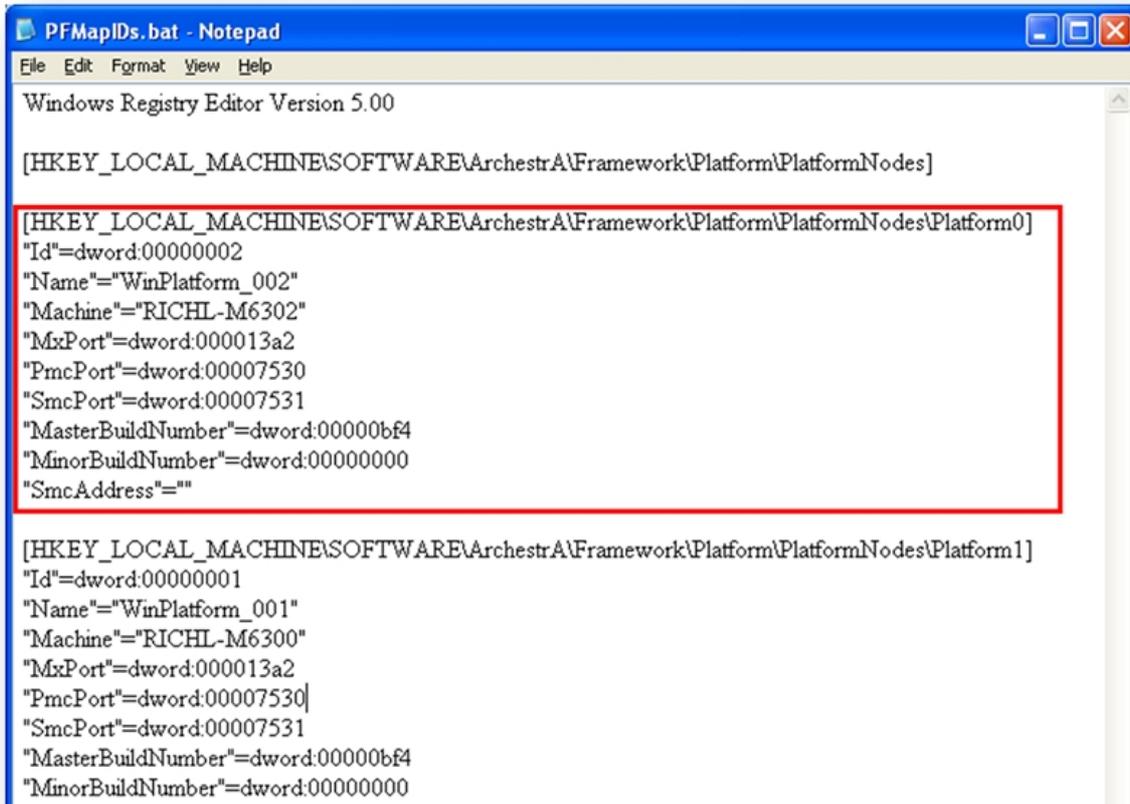


Figure 1: Delete the Registry Entry

Note: Platform0 holds the local Platform information. This information must be different for each Platform in the Galaxy. When you restore the GR node this entry will already be there with the local GR node information. If you forget to remove this area before running in on the GR node, it will cause corruptions.

5. Save and close the file.

Restoring the Galaxy After the GR is Lost

This section explains bringing a Galaxy back to a good state in the event the Galaxy Repository is lost.

Install Wonderware Application Server

1. Start the new GR machine with the same machine name as the original GR node.
2. Install Wonderware Application Server.
 - Make sure that the aaAdminUser (entered in the Change Network Account utility) is the same across the Galaxy.
 - Ensure the Patch level is the same as the other machines in the Galaxy.
3. Install the license file on the new GR machine.
4. **CRITICAL: Disconnect the network cable or disable the network adapter on the GR machine.**
5. Create the Galaxy on this machine making sure that the name is exactly the same as the original.
 - a. This can be made simpler by making sure that the file name of the backup is the Galaxy name.

b. If you are unsure of the Galaxy name, you can open the cab file with various compression utilities and open the file "__GalaxyInfo.txt". It is located in the GalaxyName= field.

Restore the Galaxy via the SMC

1. Open the System Management Console.
2. Expand **Galaxy Database Manager**.
3. In the **Details** pane, select the Galaxy you just created.
4. Select **Action** from the main menu, then **Restore**.
5. Read the notification and click **Yes**.
6. Browse to the backup file and click **Open**.
7. Run the IDE and connect to the newly-restored Galaxy.
8. Deploy the GR Platform with the default options.

The Deploy window will display the following error message:

Error: Failed to undeploy GR : Platform not registered on target node.

This is expected.

9. Click **OK** to acknowledge the message and continue.
10. Run the **PfMapIDsMMDDYYYY.reg** file.
11. **Reconnect the network cable or enable the network adapter on the GR node.**
12. Check the Wonderware logger in the SMC for any error messages.

Note: If you see *any* error or warning message please contact [Wonderware Technical Support](#).

The GR Restore process is now complete.