How to migrate archived events after updating the SolutionPack for EMC® Smarts®

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Introduction

The SolutionPack for EMC Smarts consists of following components:

- **EMC Smarts Server Manager (ESM)** - Collects Topology information and data for these reports in EMC M&R (Watch4net): Reports for Hypervisors, VirtualMachines, vCenters, Load Balancers, and so forth.
- **EMC Smarts Events** - The Smarts-listener receives notifications from the EMC Service Assurance Manager (SAM) domain. Since notifications may come from other domain too, it is important to keep all server times in sync (EMC M&R, SAM and each underlying domain server).
- **EMC Smarts Health** - EMC Smarts health collection is now part of the emc-smarts-collect package. It collects information for processors, memory and so forth.
- **EMC Smarts Performance** - Reports the performance of the devices in IP AM-PM and other domains.
- The SolutionPack for EMC Smarts is closely integrated with Service Assurance Manager version 9.3 so that operators can manage Notifications from the underlying Smarts domains from within the EMC M&R (Watch4net) User Interface.

Note: “EMC M&R” replaces the name, “Watch4net” in EMC products that use version 6.4 as their underlying monitoring and reporting platform. This change affects customers using Service Assurance Manager version 9.3 with EMC M&R version 6.4 and associated SolutionPacks.

In the past, different databases were used in Watch4net for active and inactive (archived) events. When you upgrade older Watch4net releases to 6.4, you need to consider which database you want to use to show the event history in the reports. This article provides several use cases to choose from so you can configure your reports to show data from different sources.

Watch4net 6.1 or earlier	Choice of database: - **Legacy datastore database** holds both active and inactive (archived) event data - **MySQL database** holds active and inactive (archived) event data
Watch4net 6.2 and higher	**MySQL database** holds both active and inactive (archived) event data
Watch4net 6.3 and higher	Choice of database: - **MySQL database** holds active and inactive (archived) event data - **Datastor**e database holds inactive (archived) event data. When Datastore is chosen, the MySQL database is still used but it holds only active event data.

The SolutionPack for EMC Smarts, version 2.0, is released as part of EMC M&R (Watch4net) version 6.4. There is an option in the Events screen of the SolutionPack for EMC Smarts that automates the migration of archived event data from the 6.3.x and 6.4 MySQL database to the Datastore database. You may choose to migrate the inactive (archived) data because it no longer shows up in your reports after you switch from MySQL to Datastore in the Database Type field of the Events Configuration window.

To include data from earlier Watch4net releases in your 6.4 reports, you can point the reports to more than one database.

Review the use cases and follow the procedures that apply to your deployment goals.

Prerequisites

- Back up the configuration files that will change before migrating or updating software. You may back up either from the GUI or with CLI commands. The **Reference** section at the end of this article provides more details.
- If you are migrating from an older Watch4net release to 6.4, update core modules and SolutionPackBlocks in the correct order before migrating the archived event data. (A Launch-Update script is available from the EMC Online Support website to help with the upgrade process for software versions 6.3.x and higher.) The *EMC M&R (Watch4net) Version 6.4 Installation and Configuration Guide* provides additional information.
- Obtain the hostnames or IP addresses of the servers where the databases and Default Tomcat servers are running. When you edit configuration files, replace the italic text shown in the examples with the actual host name or IP address. For example, replace *mysql-db-host* with the host name for the MySQL database. For Tomcat :: Default - *hostname-or-IP*, replace *hostname-or-IP* with the Tomcat default server hostname or IP address.

Use Case 1: Install SolutionPack for EMC Smarts 2.0 configured with MySQL database

Installed Software: EMC M&R (Watch4ne)t version 6.4. SolutionPack for EMC Smarts is not installed.

Goal: Install SolutionPack for EMC Smarts 2.0 and use only `MySQL` as the Database Type (In this configuration, the MySQL database holds both the active and inactive (archived) events.)

1. Install EMC M&R (Watch4net) Version 6.4. (The SolutionPack for EMC Smarts is available in Centralized Management > SolutionPack Center after you install or upgrade to version 6.4.) Install the SolutionPack for EMC Smarts. The *SolutionPack for EMC Smarts Summary Sheet* article and the *How to Set Up SAM, EMC Smarts, and the SolutionPack for EMC Smarts* article provide instructions.

2. During installation, choose `MySQL` as the Database Type in the Events section of the SolutionPack configuration window. (`MySQL` is the default entry. With the new reuse configuration feature in 6.4, you may need to choose “Add a new Event database” option and then choose Database Type.)

3. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand the Configuration files and edit: `conf\Catalina\localhost\APG.xml`

    a. Look for `<!-- emc-smarts-events for MySQL -->` and uncomment the Resource Links

```
<!-- emc-smarts-events for MySQL database  -->

<ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />

<ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
table=events_live }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />
```

4. Restart the Tomcat service to make the change effective.

Use Case 2: Installation of SolutionPack for EMC Smarts 2.0 configured with Datastore database

Installed Software: EMC M&R (Watch4net) version 6.4. The SolutionPack for EMC Smarts is not installed.

Goal: Install the SolutionPack for EMC Smarts and configure it to use Datastore for inactive (archived) events. (In this configuration, the MySQL database continues to be used, but it holds only active events.)

1. Install EMC M&R (Watch4net) Version 6.4. (The SolutionPack for EMC Smarts is available in Centralized Management > SolutionPack Center after you install or upgrade to version 6.4.) Install the SolutionPack for EMC Smarts. The *SolutionPack for EMC Smarts Summary Sheet* article and the *How to Set Up SAM, EMC Smarts, and the SolutionPack for EMC Smarts* article provide instructions.

2. During installation choose `Datastore` as the Database Type in the Events section of the SolutionPack configuration window. (With the new reuse configuration feature in 6.4, you may need to choose "Add a new Event database" option and then choose Database Type.)

3. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand the Configuration files and edit: `conf\server.xml`

    a. Look for `<!-- Defines the connection to the Events Archive database for APG Datastore. -->` and uncomment that section:

```
<!-- Defines the connection to the Events Archive database for APG
Datastore. -->

<Resource name="jdbc/FLOW-DS-EVENTS" auth="Container"
type="javax.sql.DataSource" maxActive="10" maxIdle="10"
validationQuery="SELECT 1" testOnBorrow="false" testWhileIdle="true"
```

```
timeBetweenEvictionRunsMillis="10000"
minEvictableIdleTimeMillis="60000" maxWait="10000" username="admin"
password="changeme" driverClassName="com.watch4net.x100.jdbc.Driver"
removeAbandoned="true" removeAbandonedTimeout="60" ogAbandoned="true"
url="jdbc:x100://localhost:48443/Databases/APG-Datastore/Default" />
```

4. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand the Configuration files and edit: `conf\Catalina\localhost\APG.xml`

   a. Comment the Resource Links in this section: `<!-- emc-smarts-events for MySQL -->` so MySQL will not be used.

```
<!-- emc-smarts-events for MySQL -->

<!--
<ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />

<ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
table=events_live }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />
-->
```

   b. Uncomment the Resource Links in this section: `<!-- emc-smarts-events for datastore -->`

```
<!-- emc-smarts-events for datastore  -->

<ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-DS-EVENTS"
type="javax.sql.DataSource" />

<ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
table=events_live }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />
```

5. Restart the Tomcat service to make the change effective

6. Start the Datastore service

   a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Start the APG-Datastore:Default service.

   b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start datastore Default` (for Linux) or `manage-modules.cmd service start datastore Default` (for Windows).

7. Log in to the host running EMC M&R (Watch4net).

8. To configure the Datastore database, connect to Datastore with this command: `/INSTALL_DIR/APG/bin/datastore-client`.

9. From the prompt, copy and paste in the contents of `/INSTALL_DIR/APG/Event-Processing/APG-Datastore-Writer/emc-smarts/ddl/ds-event-x100.sql`. This will create the schema.

10. The Event Processing Manager can now be loaded:

    a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Select **Event-Processor-Manager::*emc-smarts*** and click the **Start** button to start the service. (Replace the instance name with one from your deployment if different from *`emc-smarts`*.)

    b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start event-processing-manager` *`emc-smarts`* (for Linux) or `manage-modules.cmd service start event-processing-manager` *`emc-smarts`* (for Windows). (Replace the instance name with one from your deployment if different from *`emc-smarts`*.)

11. To verify that schema has loaded, type the following from the datastore-client command prompt:

    a. `sql> select count(* ) from events_archive;`

    b. In the resulting output, you will see something similar to 1 row (for example, `query: 0.01 sec; total: 0.01 sec`).

Use Case 3: Show data from both MySQL and Datastore databases in reports

Installed software: EMC M&R (Watch4net) version 6.4 and Smarts SolutionPack installed with `MySQL` as the Database Type.

Goal: Adjust the configuration so that reports show data from both MySQL and APG Datastore databases without migrating archived events that are currently saved in the MySQL Database. Only newly archived events will be written to the APG Datastore. Events that have been archived before APG Datastore was configured will remain in MySQL according to the retention policy.

Steps

1. Install EMC M&R (Watch4net) Version 6.4. (The SolutionPack for EMC Smarts is available in Centralized Management > SolutionPack Center after you install or upgrade to version 6.4.) Install the SolutionPack for EMC Smarts. The *SolutionPack for EMC Smarts Summary Sheet*

article and the *How to Set Up SAM, EMC Smarts, and the SolutionPack for EMC Smarts* article provide instructions.

Note: If you are upgrading SolutionPack for EMC Smarts at a version lower than 1.4, you must add the database block before you can proceed with Events block configuration. To add the block, go to Centralized Management > SolutionPackCenter and select the 2.0 version of the SolutionPack for EMC Smarts. Click the Install button. You will be prompted to install only the database block. Complete the install process and ensure the instance name matches the name used for the other blocks in the installed SolutionPack for EMC Smarts.

2. During the Smarts SolutionPackBlock update process, ensure you select `Datastore` as the Database Type in the Events configuration window. (With the new reuse configuration feature in 6.4, you may need to choose "Add a new Event database" option and then choose Database Type.)
3. Post installation go to **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand configuration files and edit conf/server.xml.
   a. Look for `<!-- Defines the connection to the Events Archive database for APG Datastore. -->` and uncomment the resource link for that section. For example:

```
<!-- Defines the connection to the Events Archive database for APG
Datastore. -->

<Resource name="jdbc/FLOW-DS-EVENTS" auth="Container"
type="javax.sql.DataSource" maxActive="10" maxIdle="10"
validationQuery="SELECT 1" testOnBorrow="false"
testWhileIdle="true" timeBetweenEvictionRunsMillis="10000"
minEvictableIdleTimeMillis="60000" maxWait="10000"
username="admin" password="changeme"
driverClassName="com.watch4net.x100.jdbc.Driver"
removeAbandoned="true" removeAbandonedTimeout="60"
ogAbandoned="true" url="jdbc:x100://localhost:48443/Databases/APG-
Datastore/Default" />
```

   b. Add the following entry to the file: (Add this entry just before the section entitled `<!-- Defines the connection to the Events Archive database for APG Datastore. -->`)

```
<!-- Defines the connections to the MySQL Archived Events database
-->
<Resource name="jdbc/FLOW-MY-EVENTS" auth="Container"
type="javax.sql.DataSource" maxActive="10" maxIdle="10"
validationQuery="SELECT 1" testOnBorrow="false"
testWhileIdle="true" timeBetweenEvictionRunsMillis="10000"
validationQueryTimeout="5" minEvictableIdleTimeMillis="60000"
maxWait="10000" username="apg" password="watch4net"
driverClassName="com.mysql.jdbc.Driver" removeAbandoned="true"
removeAbandonedTimeout="60" logAbandoned="true"
```

```
url="jdbc:mysql://mysql-db-
host:53306/events?autoReconnect=true&amp;tinyInt1isBit=false" />
```

4. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand the Configuration files and edit: `conf\Catalina\localhost\APG.xml`
   a. Comment the Resource Links in this section: `<!-- emc-smarts-events for MySQL -->`, so MySQL will not be used.

      ```
      <!-- emc-smarts-events for MySQL -->

      <!--
      <ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
      table=events_archive }" global="jdbc/FLOW-EVENTS"
      type="javax.sql.DataSource" />

      <ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
      table=events_live }" global="jdbc/FLOW-EVENTS"
      type="javax.sql.DataSource" />
      -->
      ```

   b. Uncomment the Resource Links in this section: `<!-- emc-smarts-events for datastore -->`

      ```
      <!-- emc-smarts-events for datastore  -->

      <ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
      table=events_archive }" global="jdbc/FLOW-DS-EVENTS"
      type="javax.sql.DataSource" />

      <ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
      table=events_live }" global="jdbc/FLOW-EVENTS"
      type="javax.sql.DataSource" />
      ```

   c. Copy-paste this entry:

      ```
      <!-- emc-smarts archived events for MySQL database  -->

      <ResourceLink name="jdbc/FLOW-RPE2-MYARCH:{ mapping=FLOW-RPE2.xml,
      table=events_archive }" global="jdbc/FLOW-MY-EVENTS"
      type="javax.sql.DataSource" />
      ```

5. Restart the Tomcat service to make the change effective.

6. Start the Datastore service.

   a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Start the APG-Datastore:Default service.

   b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start`

`datastore Default` (for Linux) or `\manage-modules.cmd service start datastore Default` (for Windows).

7. Log in to the host running EMC M&R (Watch4net).

8. To configure the Datastore database, connect to Datastore with this command: `/INSTALL_DIR/APG/bin/datastore-client`.

9. From the prompt, copy and paste in the contents of `/INSTALL_DIR/APG/Event-Processing/APG-Datastore-Writer/emc-smarts/ddl/ds-event-x100.sql`. This will create the schema.

10. The Event Processing Manager can now be loaded:

    a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Select **Event-Processor-Manager::*emc-smarts*** and click the **Start** button to start the service. (Replace the instance name with one from your deployment if different from *`emc-smarts`*.)

    b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start event-processing-manager` *`emc-smarts`* (for Linux) or `manage-modules.cmd service start event-processing-manager` *`emc-smarts`* (for Windows). (Replace the instance name with one from your deployment if different from *`emc-smarts`*.)

11. To verify that schema has loaded, type the following from the datastore-client command prompt:

    a. `sql> select count(* ) from events_archive;`

    b. In the resulting output, you will see something similar to 1 row (for example, `query: 0.01 sec; total: 0.01 sec`).

12. Ensure the SolutionPack for EMC Smarts reports include this filter: #RPE2:ALL. Use the Edit mode to add the filter if it is not available in the report. (The **Reference** section provides a screen shot of RPE2:ALL.)
13. View Smarts SolutionPack reports. Confirm the reports include notifications from the time before and after the Datastore Database Type was enabled.

    Note: Datastore holds inactive (archived) events. By default, there is a delay of one day after an event becomes inactive before it moves into the Datastore database.

Use Case 4: Migrate archived events from MySQL to Datastore so reports display archived event data from one source only

Installed software: EMC M&R (Watch4net) version 6.4 and SolutionPack for EMC Smarts 1.4.2 or later installed with MySQL as the Database Type.

Goal: Adjust the configuration in the SolutionPack for EMC Smarts Database Type field from `MySQL` to `Datastore`. Migrate existing archived notifications to the Datastore database so that reports pull archived events from only one source.

Steps

1. From **Centralized Management > SolutionPacks > Infrastructure**, click the **EMC Smarts SolutionPack**.
2. Click the Pencil icon by the Events SolutionPackBlock to edit the entries:

    a. In the Database Type field, choose `Datastore`.
    b. Click **Reconfigure.**

3. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default - hostname-or-IP**, expand the Configuration files and edit: `conf\server.xml`

4. Look for `<!-- Defines the connection to the Events Archive database for APG Datastore. -->` and uncomment that section:

```
<!-- Defines the connection to the Events Archive database for APG
Datastore. -->

<Resource name="jdbc/FLOW-DS-EVENTS" auth="Container"
type="javax.sql.DataSource" maxActive="10" maxIdle="10"
validationQuery="SELECT 1" testOnBorrow="false" testWhileIdle="true"
timeBetweenEvictionRunsMillis="10000"
minEvictableIdleTimeMillis="60000" maxWait="10000" username="admin"
password="changeme" driverClassName="com.watch4net.x100.jdbc.Driver"
removeAbandoned="true" removeAbandonedTimeout="60" ogAbandoned="true"
url="jdbc:x100://localhost:48443/Databases/APG-Datastore/Default" />
```

5. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand the Configuration files and edit: `conf\Catalina\localhost\APG.xml`

    a. Comment the Resource Links in this section: `<!-- emc-smarts-events for MySQL -->` so MySQL will not be used.

```
<!-- emc-smarts-events for MySQL -->

<!--
<ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />

<ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
table=events_live }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />
-->
```

b. Uncomment the Resource Links in this section: `<!-- emc-smarts-events for datastore -->`

```
<!-- emc-smarts-events for datastore  -->

<ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-DS-EVENTS"
type="javax.sql.DataSource" />

<ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
table=events_live }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />
```

6. Restart the Tomcat service to make the change effective

7. Start the Datastore service

   a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Start the APG-Datastore:Default service.

   b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start datastore Default` (for Linux) or `manage-modules.cmd service start datastore Default` (for Windows).

8. Log in to the host running EMC M&R (Watch4net).

9. To configure the Datastore database, connect to Datastore with this command: `/INSTALL_DIR/APG/bin/datastore-client`.

10. From the prompt, copy and paste in the contents of `/INSTALL_DIR/APG/Event-Processing/APG-Datastore-Writer/emc-smarts/ddl/ds-event-x100.sql`. This will create the schema.

11. The Event Processing Manager can now be loaded:

    a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Select **Event-Processor-Manager::*emc-smarts*** and click the **Start** button to start the service. (Replace the instance name with one from your deployment if different from *`emc-smarts`*.)

    b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start event-processing-manager` *`emc-smarts`* (for Linux) or `manage-modules.cmd service start event-processing-manager` *`emc-smarts`* (for Windows). (Replace the instance name with one from your deployment if different from *`emc-smarts`*.)

12. To verify that schema has loaded, type the following from the datastore-client command prompt:

    a. `sql> select count(* ) from events_archive;`

       In the resulting output, you will see something similar to 1 row (for example, `query: 0.01 sec; total: 0.01 sec`).

13. Now you are ready to migrate the archived event data from MySQL to Datastore. From **Centralized Management > SolutionPacks > Infrastructure**, click the **EMC Smarts SolutionPack**.
14. Click the Pencil icon by the Events SolutionPackBlock to edit the entries:

    a. Select the checkbox for **Do you want to configure advanced setting**
    b. Select checkbox for **Enable archived events migration**
    c. Click **Reconfigure**

15. After one hour, verify the migration is complete by checking the MySQL events database. If the events_archive table row count is 0 in the MySQL events database, all of the archived events have migrated to the Datastore database.
16. Using mysql-client, issue this command to verify migration is complete:

    ```
    mysql> select count(* ) from events_archive;
    ```

    Look for row count of zero:

    ```
    +-----------+
    | count(* ) |
    +-----------+
    |       0 |
    +-----------+
    1 row in set (0.00 sec)
    ```

17. Using datastore-client, run the below command and verify that the archived events are added to datastore. Here is an example:

```
./datastore-client.sh
Welcome to APG-Datastore 5.0u1 CLI (Ctrl+D to exit).

Connected to jdbc:x100://localhost:56683/ !

sql> select count(* ) from events_archive;
+-------------------------+
| _aggregatenode_7215fb38 |
| BIGINT                  |
+-------------------------+
| 1345                      |
+-------------------------+
1 row(s) in result (query: 0.10 sec; total: 0.11 sec)
sql>
```

Note: Datastore holds inactive (archived) events. By default, there is a delay of one day after an event becomes inactive before it moves into the Datastore database.

18. After all of the events have migrated, deselect the **Migration enable** checkbox to disable migration.

Use Case 5: Install EMC M&R (Watch4net) 6.4 and display (6.1.x) archived event data in the 6.4 SolutionPack for EMC Smarts reports

Installed software: Watch4net version 6.1.x. Customer installs EMC M&R (Watch4net) version 6.4.

Goal: Point 6.4 SolutionPack for EMC Smarts reports to show data from two datastores (6.1.x Datastore and 6.4 Datastore) for archived event reporting.

Steps

1. Install EMC M&R (Watch4net) Version 6.4. (The SolutionPack for EMC Smarts is available in Centralized Management > SolutionPack Center after you install or upgrade to version 6.4.) Install the SolutionPack for EMC Smarts. The *SolutionPack for EMC Smarts Summary Sheet* article and the *How to Set Up SAM, EMC Smarts, and the SolutionPack for EMC Smarts* article provide instructions.
2. During the Smarts SolutionPackBlock update process, ensure you select `Datastore` as the Database Type in the Events configuration window. Refer to Use Case 2 for details.
3. Post installation go to **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand configuration files and edit conf/server.xml.
    a. Look for `<!-- Defines the connection to the Events Archive database for APG Datastore. -->` and uncomment the resource link for that section.
    b. Add the following entry to the file: (Add this entry just before the section entitled `<!-- Defines the connection to the Events Archive database for APG Datastore. -->`)

    Note: In the entry shown below, replace *`localhost`* with the hostname of the 6.1.x legacy datastore server

```
<!-- Defines the connections to the legacy Datastore Event
database -->
<Resource name="jdbc/FLOW-DS61-EVENTS" auth="Container"
type="javax.sql.DataSource" maxActive="10" maxIdle="10"
validationQuery="SELECT 1" testOnBorrow="false"
 testWhileIdle="true" timeBetweenEvictionRunsMillis="10000"
validationQueryTimeout="5" minEvictableIdleTimeMillis="60000"
maxWait="10000" username="apg" password="watch4net"
driverClassName="com.mysql.jdbc.Driver" removeAbandoned="true"
removeAbandonedTimeout="60" logAbandoned="true"
url="jdbc:mysql://localhost:53307/events?autoReconnect=true&amp;ti
nyInt1isBit=false"/>
```

4. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand the Configuration files and edit: `conf\Catalina\localhost\APG.xml`

```
<!-- emc-smarts-events for legacy datastore  -->
<ResourceLink name="jdbc/FLOW-RPE2-ARCH61:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-DS61-EVENTS"
type="javax.sql.DataSource" />
```

5. Restart the Tomcat service to make the change effective.

6. Start the Datastore service

   a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Start the APG-Datastore:Default service.

   b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start datastore Default` (for Linux) or `manage-modules.cmd service start datastore Default` (for Windows).

7. Log in to the host running EMC M&R (Watch4net).

8. To configure the Datastore database, connect to Datastore with this command: `/INSTALL_DIR/APG/bin/datastore-client`.

9. From the prompt, copy and paste in the contents of `/INSTALL_DIR/APG/Event-Processing/APG-Datastore-Writer/emc-smarts/ddl/ds-event-x100.sql`. This will create the schema.

10. The Event Processing Manager can now be loaded:

a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Select **Event-Processor-Manager::*emc-smarts*** and click the **Start** button to start the service. (Replace the instance name with one from your deployment if different from *emc-smarts*.)

b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start event-processing-manager` *emc-smarts* (for Linux) or `manage-modules.cmd service start event-processing-manager` *emc-smarts* (for Windows). (Replace the instance name with one from your deployment if different from *emc-smarts*.)

11. To verify that schema has loaded, type the following from the datastore-client command prompt:

    a. `sql> select count(* ) from events_archive;`

    b. In the resulting output, you will see something similar to 1 row (for example, `query: 0.01 sec; total: 0.01 sec`).

12. Ensure the SolutionPack for EMC Smarts reports include this filter: #RPE2:ALL. Use the Edit mode to add the filter if it is not available in the report. (The **Reference** section provides a screen shot of RPE2:ALL.)
13. View the SolutionPack for EMC Smarts reports. Confirm the reports include archived events from the old and new databases.

    Note: Datastore holds inactive (archived) events. By default, there is a delay of one day after an event becomes inactive before it moves into the Datastore database.

Use Case 6: Migrate from Watch4net 6.2.x to 6.4 and display (6.2.x) archived event data in the 6.4 SolutionPack for EMC Smarts reports

Installed software: Watch4net 6.2.x with installed SolutionPack for EMC Smarts at a version lower than 1.4.

Goal: Migrate to EMC M&R (Watch4net) 6.4 and update to version 2.0 of SolutionPack for EMC Smarts. Configure reports one of two ways:

- Option 1: Point the 6.4 SolutionPack for EMC Smarts reports to MySQL (for the 6.2 archived event history) and to Datastore (for 6.4 archived events)
- Option 2: Migrate the archived event data from MySQL to Datastore. Ensure the 6.4 SolutionPack for EMC Smarts reports show archived event data only from Datastore. (See Use Case 4 to review the detailed steps.)

Steps

1. Migrate core modules and SolutionPackBlocks from Watch4net 6.2.x to Watch4net 6.3.x and then upgrade to version 6.4. The *Watch4Net 6.3 Installation and Configuration Guide* provides instructions for migrating to 6.3.x. The *EMC M&R (Watch4net) Version 6.4 Installation and Configuration Guide* provides instructions on upgrading from 6.3.x to 6.4. (The SolutionPack for EMC Smarts is available in Centralized Management > SolutionPack Center after you install or upgrade to version 6.4.) Install the SolutionPack for EMC Smarts. The *SolutionPack for EMC Smarts Summary Sheet* article and the *How to Set Up SAM, EMC Smarts, and the SolutionPack for EMC Smarts* article provide instructions

   Note: You must add a new database block to the SolutionPack for EMC Smarts before you can proceed. To add the block, go to Centralized Management > SolutionPackCenter and select the 2.0 version of the SolutionPack for EMC Smarts. Click the Install button. You will be prompted to install only the database block. Complete the install process and ensure the instance name matches the name used for the other blocks in the installed SolutionPack for EMC Smarts.

2. Update the SolutionPackBlocks associated with the SolutionPack for EMC Smarts. During the Smarts SolutionPackBlock update process, ensure you select `Datastore` as the Database Type in the Events configuration window.
3. Reconfigure each of the Smarts SolutionPackBlocks.

Option 1: Point reports to both databases

1. After completing the update and reconfigure process, go to **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand Configuration files and edit `conf/Catalina/localhost/APG.xml`.
   a. Add a new data source to access old archived events from MySQL. Here is the new entry to add to the file for the archived MySQL database:

```
<!-- emc-smarts-events for MySQL database  -->

 <ResourceLink name="jdbc/FLOW-RPE2-MYARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-MY-EVENTS"
type="javax.sql.DataSource" />
```

   b. Comment the Resource Links in this section, `<!-- emc-smarts-events for MySQL -->`, so the 6.4.x version of MySQL will not be used.

```
<!-- emc-smarts-events for MySQL -->

<!--
<ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />

<ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
table=events_live }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />
-->
```

c. Add or uncomment the Resource Links in this section:

```
<! -- emc-smarts-events for datastore -->

<ResourceLink name="jdbc/FLOW-RPE2-ARCH:{ mapping=FLOW-RPE2.xml,
table=events_archive }" global="jdbc/FLOW-DS-EVENTS"
type="javax.sql.DataSource" />

<ResourceLink name="jdbc/FLOW-RPE2-LIVE:{ mapping=FLOW-RPE2.xml,
table=events_live }" global="jdbc/FLOW-EVENTS"
type="javax.sql.DataSource" />
```

2. From **Centralized Management > Logical Overview > Miscellaneous > Web-Servers (1) > Tomcat :: Default -** *hostname-or-IP*, expand Configuration files and edit `conf/server.xml`.

```
<!-- Defines the connection to the Events Archive database for APG
Datastore. -->

<Resource name="jdbc/FLOW-DS-EVENTS" auth="Container"
type="javax.sql.DataSource" maxActive="10" maxIdle="10"
validationQuery="SELECT 1" testOnBorrow="false" testWhileIdle="true"
timeBetweenEvictionRunsMillis="10000" minEvictableIdleTimeMillis="60000"
maxWait="10000" username="admin" password="changeme"
driverClassName="com.watch4net.x100.jdbc.Driver" removeAbandoned="true"
removeAbandonedTimeout="60" ogAbandoned="true"
url="jdbc:x100://localhost:48443/Databases/APG-Datastore/Default" />
```

Add this section to `server.xml`.

```
  <!-- Defines the connections to the MySQL Event database -->

  <Resource name="jdbc/FLOW-MY-EVENTS" auth="Container"
type="javax.sql.DataSource" maxActive="10" maxIdle="10"
validationQuery="SELECT 1" testOnBorrow="false" testWhileIdle="true"
timeBetweenEvictionRunsMillis="10000" validationQueryTimeout="5"
minEvictableIdleTimeMillis="60000" maxWait="10000" username="apg"
password="watch4net" driverClassName="com.mysql.jdbc.Driver"
removeAbandoned="true" removeAbandonedTimeout="60" logAbandoned="true"
url="jdbc:mysql://localhost:53306/events?autoReconnect=true&amp;tinyInt1
isBit=false" />
```

3. Ensure the Smarts SolutionPack reports include this filter: #RPE2:ALL. Use the Edit mode to add the filter if it is not available in the report. (The **Reference** section provides a screen shot of RPE2:ALL.)
4. Restart the Tomcat service to make the change effective.

5. Start the Datastore service.

   a. If starting from Centralized Management, navigate to Physical Overview and select the Backend server hosting the Datastore database. Start the APG-Datastore:Default service.

b. If using CLI commands, navigate to the installation `bin` folder (for example, `/opt/APG/bin`) and issue the `./manage-modules.sh service start datastore Default` (for Linux) or `manage-modules.cmd service start datastore Default` (for Windows).

6. Log in to the host running Watch4net

7. To configure the Datastore database, connect to the Watch4net Datastore with this command: `/INSTALL_DIR/APG/bin/datastore-client`.

8. From the prompt, copy and paste in the contents of `/INSTALL_DIR/APG/Event-Processing/APG-Datastore-Writer/emc-smarts/ddl/ds-event-x100.sql`. This will create the schema. The Event Processing Manager can now be loaded.

9. To verify the schema has loaded, type the following from the datastore-client command prompt:

   a. `sql> select count(* ) from events_archive;`

   b. In the resulting output, you will see something similar to 1 row (for example, `query: 0.01 sec; total: 0.01 sec`).

10. View Smarts SolutionPack reports. Confirm the reports include archived events from the time before and after the Datastore Database Type was enabled.

Option 2: Migrate archived events from MySQL to APG Datastore database

Use Case 4 provides the necessary steps.

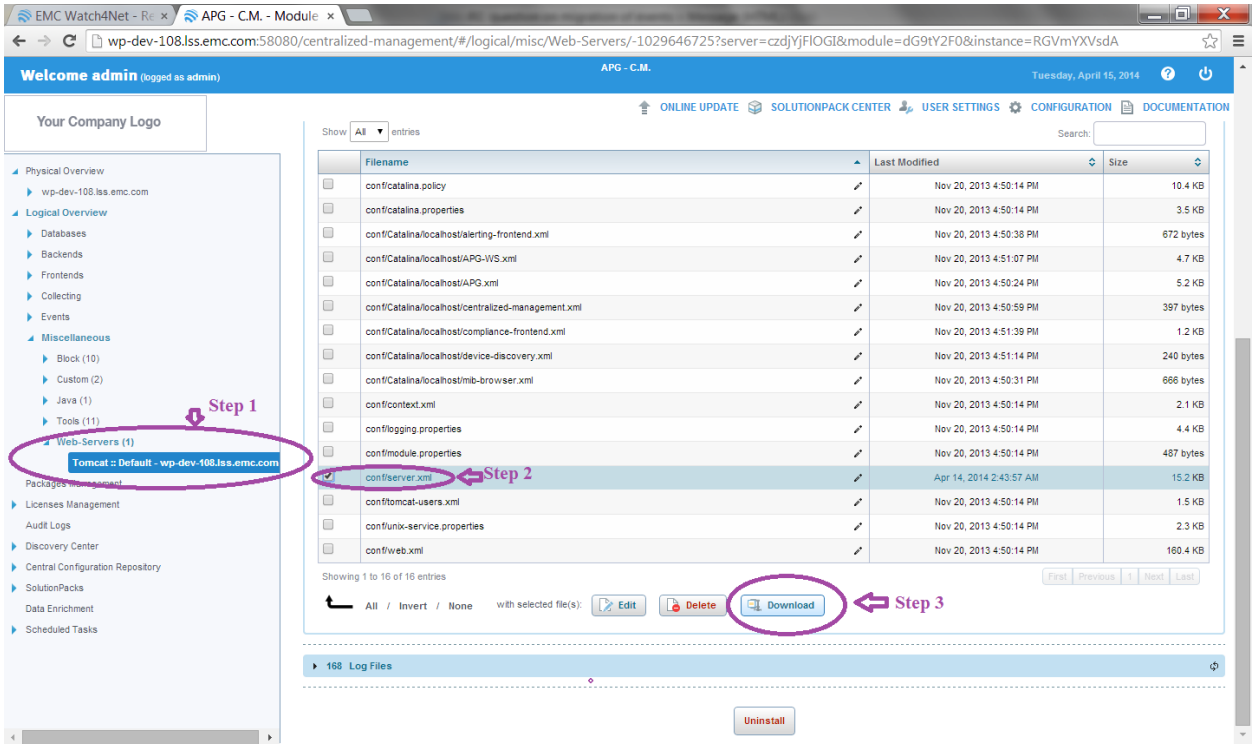
Reference

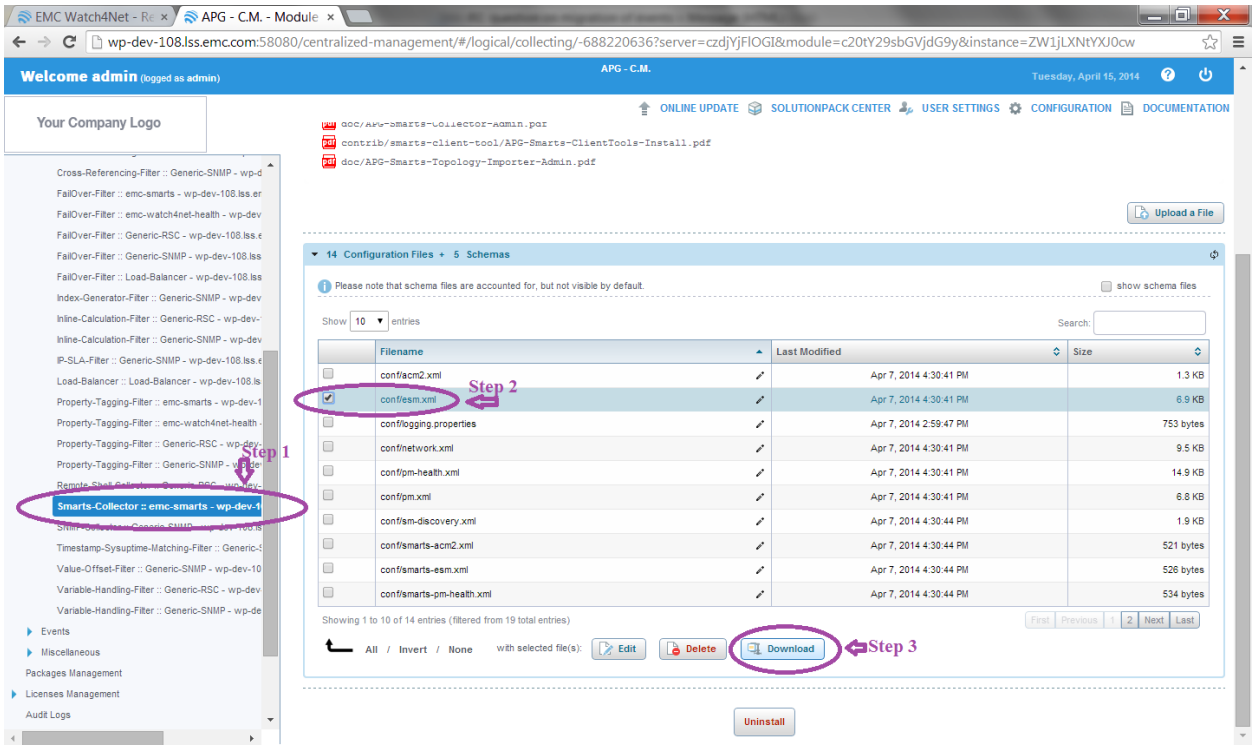
This section provides

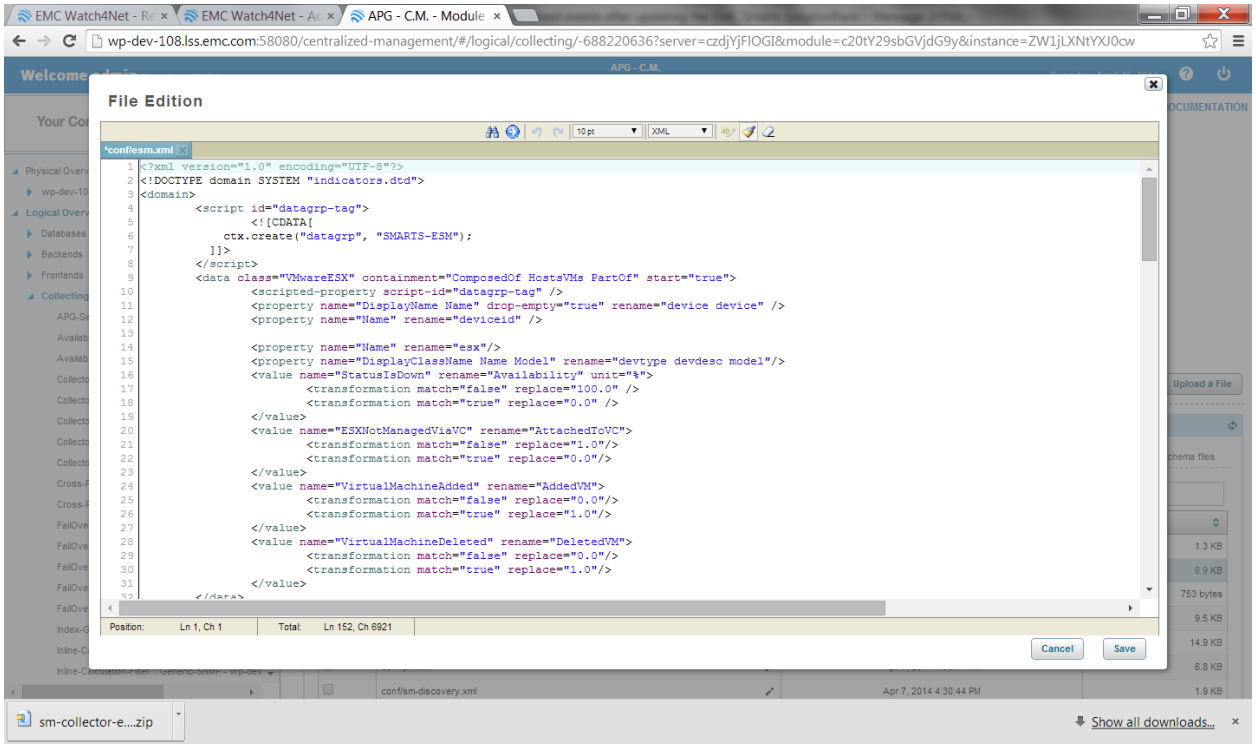
- Suggestions for backing up configuration files before you start the event migration process.
- Screen snap of the #RPE2ALL filter that has to be added to SolutionPack for EMC Smarts reports when migrating from older configurations to version 2.0.
- Screen snap of Archived Events migration window

Back up files from Centralized Management

Select the configuration file(s) that will be edited in Centralized Management and download them as a zip file. Name the zip file after the instance name (Example: sm-collector-emc-smarts-files.zip). Move the zip file to a known folder (such as \tmp\backup). The file(s) in the zip have the content at that point of time and the saved content can be copied or pasted into the File Edition window and Saved.


EMC Watch4Net - Re
APG - C.M. - Module
wp-dev-108.lss.emc.com:58080/centralized-management/#/logical/misc/Web-Servers/-1029646725?server=czdjYjFlOGI&module=dG9tY2F0&instance=RGVmYXVsdA
Welcome admin (logged as admin)
APG - C.M.
Tuesday, April 15, 2014
ONLINE UPDATE
SOLUTIONPACK CENTER
USER SETTINGS
CONFIGURATION
DOCUMENTATION
Your Company Logo
Physical Overview
wp-dev-108.lss.emc.com
Logical Overview
Databases
Backends
Frontends
Collecting
Events
Miscellaneous
Block (10)
Custom (2)
Java (1)
Tools (11)
Web-Servers (1)
Tomcat :: Default - wp-dev-108.lss.emc.com
Licenses Management
Audit Logs
Discovery Center
Central Configuration Repository
SolutionPacks
Data Enrichment
Scheduled Tasks
Step 1
Step 2
Step 3
Filename
Last Modified
Size
conf/catalina.policy
conf/catalina.properties
conf/Catalina/localhost/alerting-frontend.xml
conf/Catalina/localhost/APG-WS.xml
conf/Catalina/localhost/APG.xml
conf/Catalina/localhost/centralized-management.xml
conf/Catalina/localhost/compliance-frontend.xml
conf/Catalina/localhost/device-discovery.xml
conf/Catalina/localhost/mib-browser.xml
conf/context.xml
conf/logging.properties
conf/module.properties
conf/server.xml
conf/tomcat-users.xml
conf/unix-service.properties
conf/web.xml
Showing 1 to 16 of 16 entries
Edit
Delete
Download
168 Log Files
Uninstall

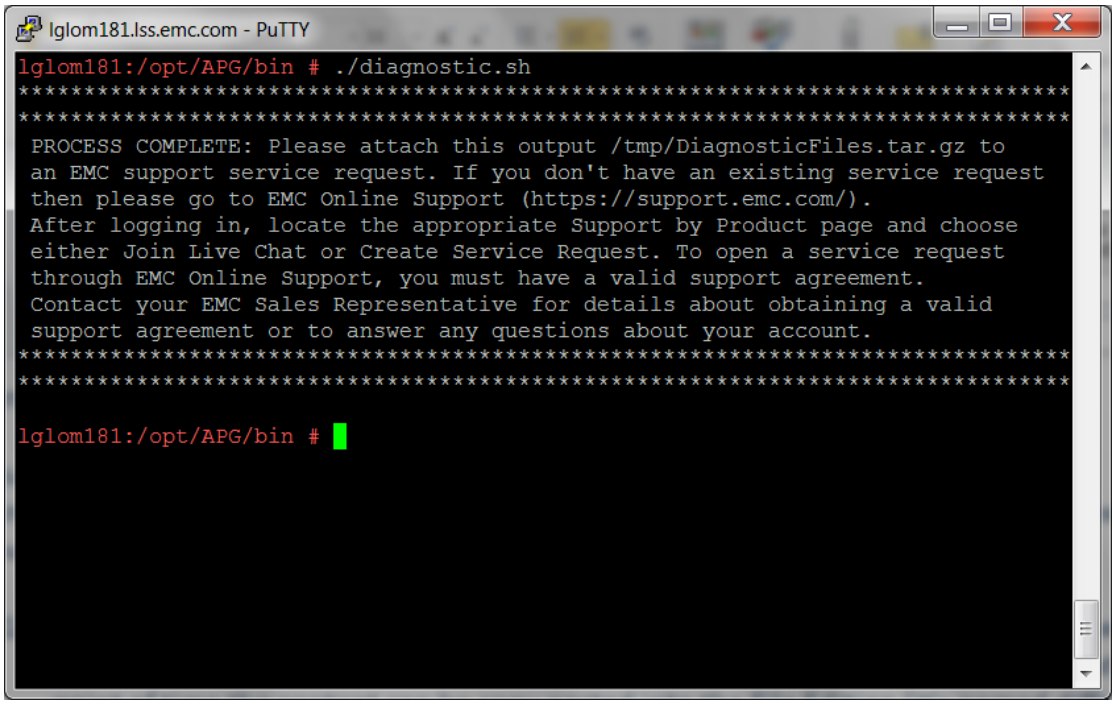

EMC Watch4Net - Re
APG - C.M. - Module
wp-dev-108.lss.emc.com:58080/centralized-management/#/logical/collecting/-688220636?server=czdjYjFlOGI&module=c20tY29sbGVjdG9y&instance=ZW1jLXNtYXJ0cw
Welcome admin (logged as admin)
APG - C.M.
Tuesday, April 15, 2014
ONLINE UPDATE
SOLUTIONPACK CENTER
USER SETTINGS
CONFIGURATION
DOCUMENTATION
Your Company Logo
contrib/smarts-client-tool/APG-Smarts-ClientTools-Install.pdf
doc/APG-Smarts-Topology-Importer-Admin.pdf
Upload a File
Smarts-Collector :: emc-smarts - wp-dev-1
Events
Miscellaneous
Packages Management
Licenses Management
Audit Logs
14 Configuration Files + 5 Schemas
Please note that schema files are accounted for, but not visible by default.
show schema files
Filename
Last Modified
Size
conf/acm2.xml
conf/esm.xml
conf/logging.properties
conf/network.xml
conf/pm-health.xml
conf/pm.xml
conf/sm-discovery.xml
conf/smarts-acm2.xml
conf/smarts-esm.xml
conf/smarts-pm-health.xml
Showing 1 to 10 of 14 entries (filtered from 19 total entries)
Step 1
Step 2
Step 3
Edit
Delete
Download
Uninstall


EMC Watch4Net - Re
EMC Watch4Net - Ac
APG - C.M. - Module
wp-dev-108.lss.emc.com:58080/centralized-management/#/logical/collecting/-688220636?server=czdjYjFlOGI&module=c20tY29sbGVjdG9y&instance=ZW1jLXNtYXJ0cw
File Edition
*conf/esm.xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE domain SYSTEM "indicators.dtd">
<domain>
<script id="datagrp-tag">
<![CDATA[
ctx.create("datagrp", "SMARTS-ESM");
]]>
</script>
<data class="VMwareESX" containment="ComposedOf HostsVMs PartOf" start="true">
<scripted-property script-id="datagrp-tag" />
<property name="DisplayName Name" drop-empty="true" rename="device device" />
<property name="Name" rename="deviceid" />
<property name="Name" rename="esx"/>
<property name="DisplayClassName Name Model" rename="devtype devdesc model"/>
<value name="StatusIsDown" rename="Availability" unit="%">
<transformation match="false" replace="100.0" />
<transformation match="true" replace="0.0" />
</value>
<value name="ESXNotManagedViaVC" rename="AttachedToVC">
<transformation match="false" replace="1.0"/>
<transformation match="true" replace="0.0"/>
</value>
<value name="VirtualMachineAdded" rename="AddedVM">
<transformation match="false" replace="0.0"/>
<transformation match="true" replace="1.0"/>
</value>
<value name="VirtualMachineDeleted" rename="DeletedVM">
<transformation match="false" replace="0.0"/>
<transformation match="true" replace="1.0"/>
</value>
Position: Ln 1, Ch 1
Total: Ln 152, Ch 6921
Cancel
Save
sm-collector-e....zip
Show all downloads...

Back up files from the command line interface (CLI)

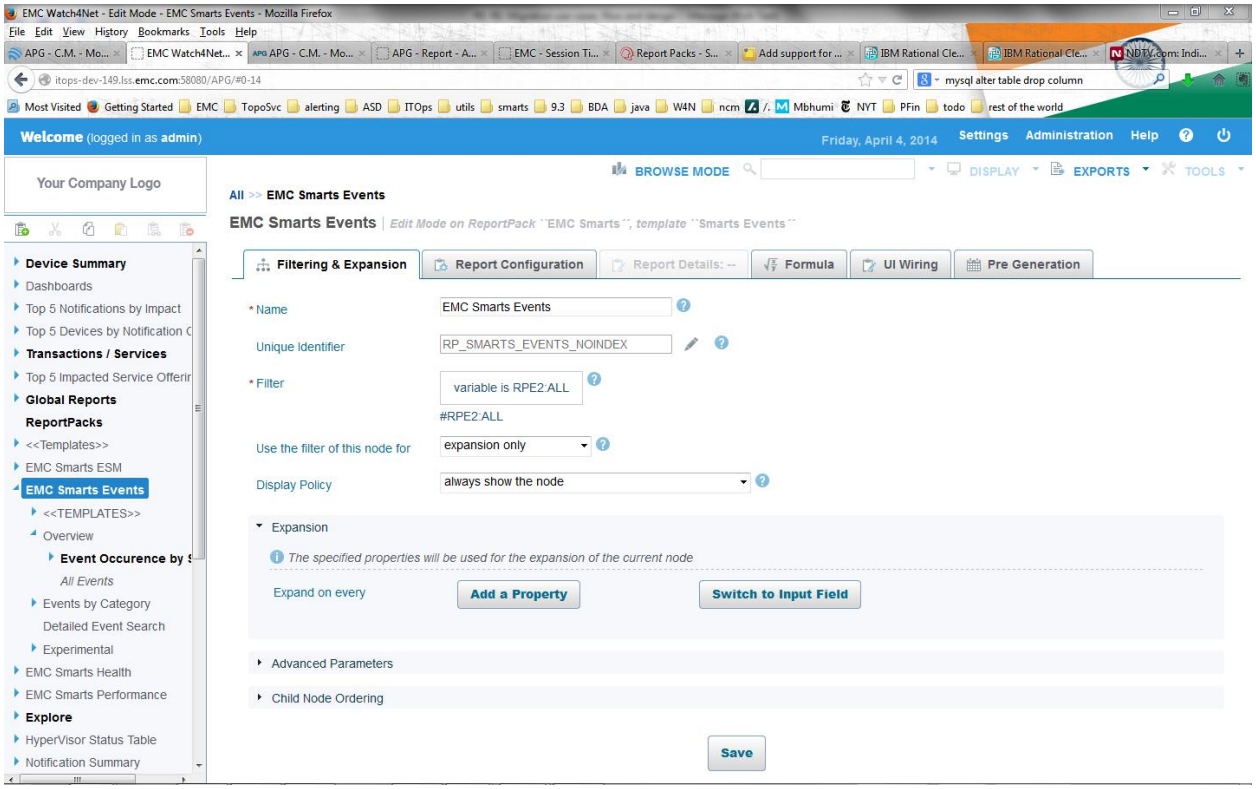
Use either standard *NIX/Linux/Windows utilities or run the diagnostic command (`diagnostic.sh` or `diagnostic.cmd`). This creates a zip containing **ALL** your configuration files. The zip file will be saved into a location like /tmp/DiagnosticFiles.tar.gz (the script prints that location on completion).

Example of issuing the ./diagnostic.sh command to obtain the backup:

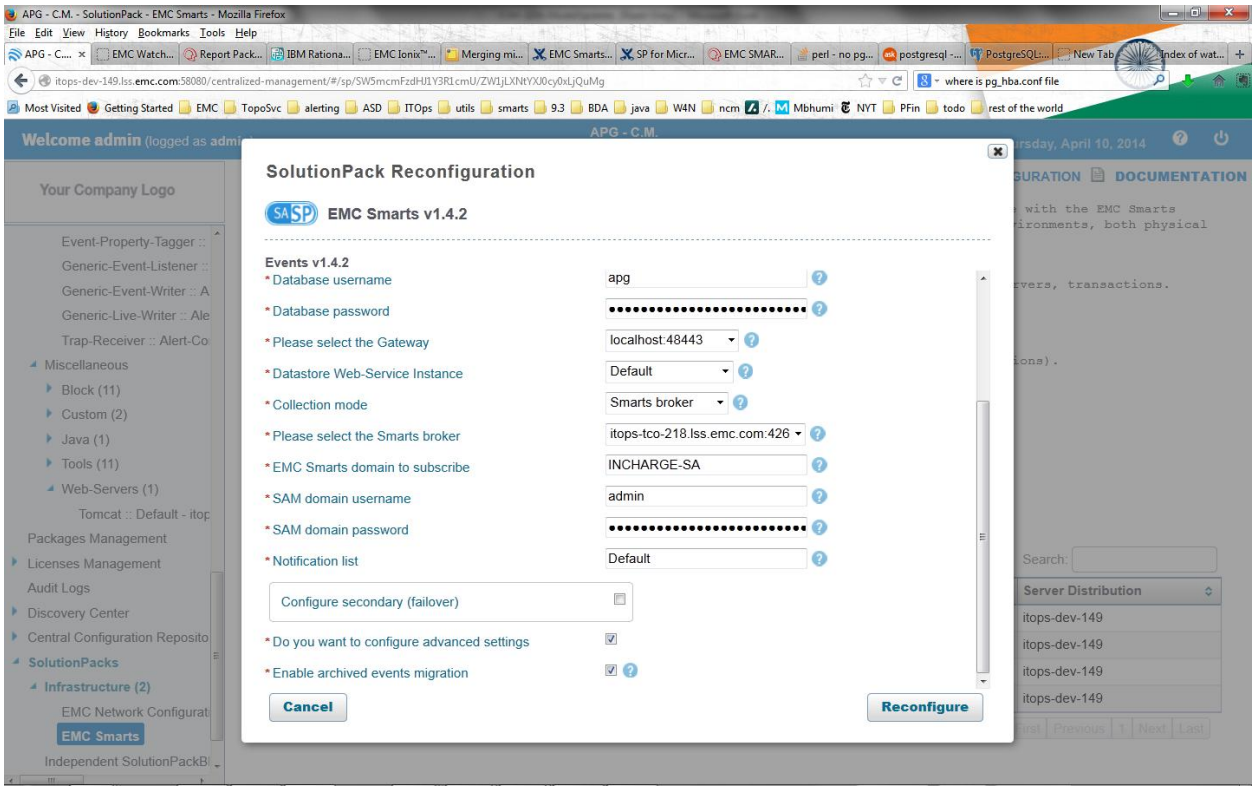


#RPE2:ALL

Example of adding #RPE2:ALL filter to SolutionPack for EMC Smarts reports in Edit mode:



Example of Archived Events migration screen



Troubleshooting and getting help

EMC support, product, and licensing information can be obtained as follows:

Product documentation and licenses

Obtain product documentation including release notes and installation instructions for this product on EMC Online Support at: https://support.emc.com > Support by Product > Product Name > Documentation. For product licenses, navigate to support.emc.com > Service Center > Product Registration & Licenses.

Updates to software and documentation

The most recent updates to software and documentation are available only on EMC Online Support. Log into EMC Online Support (https://support.emc.com) today to retrieve the latest updates and documentation for your product prior to installation.

Logging into EMC Online Support

If you do not have an EMC Online Support account, set one up by going to: https://support.emc.com and clicking Register Now. Follow the online registration steps and ensure that you fill in all required fields, including your business email address. Once your registration is processed, you will receive an email confirming access and providing additional information regarding completion of your registration and initial log in.

Technical support

For technical support, click Create Service Requests or Contact Customer Service on EMC Online Support at https://support.emc.com. To open a service request through EMC Online Support, you must have a valid support agreement. Contact your EMC Sales Representative for details about obtaining a valid support agreement or to answer any questions about your account.

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