EMC® ViPR SRM

Version 4.0.1

Installation and Configuration Guide

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EMC²®

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CHAPTER 1

Installing the Virtual Appliance

This chapter includes the following topics:

Virtual appliance installation overview

Learn how to install ViPR SRM as an appliance in a supported VMware environment.

Any new vApp (4VM or 1VM) installations require VMware vSphere 5.x or 6.0. This includes adding a vApp 1VM to an existing installation.

The vApp is based on SuSE Enterprise Linux 11 SP3.

The MySQL version included with the product is 5.5.48 MySQL Community Server (GPL).

Do not add any binary VMs into the vApp (including any ViPR SRM binary VMs).

The procedures enable you to install two types of software:

Core software

A reporting solution built on a scalable architecture of backends, frontends, and distributed collectors. When you install the core software, you establish the foundation for the product, which provides common capabilities, functions, and user interfaces.

SolutionPacks

Software components that support EMC and third-party storage infrastructure components. Each SolutionPack enables you to select a specific report in the UI. To learn more about the SolutionPacks that ViPR SRM supports, see the following documents:

- *EMC ViPR SRM Support Matrix*

- *EMC ViPR SRM Release Notes*

- *EMC ViPR SRM SolutionPack Guide*

ViPR SRM vApps are distributed using Open Virtualization Format (OVF) files. Depending on your environment's requirements, you can use two types of OVF installations:

Four VM installation procedure

Enables you to install multiple VMs that are preconfigured to communicate with each other (Frontend, Primary Backend, Additional Backend, and Collector).

One VM installation option

Enables you to install a specific appliance (Frontend, Primary Backend, Additional Backend, and Collector) as a single VM. You can use this option to install additional Collectors and Additional Backend VMs for scaling out the existing ViPR SRM installation.

ViPR SRM vApp VMs have properties that are used to configure the host level networking information. If the vApp VM/folder needs to be moved from one vCenter to another, you must use the vCenter export and import procedure. Do not use the vCenter remove from inventory method.

ViPR SRM vApps fully support the VM vMotion and Storage vMotion DRS functions of VMware vSphere.

Installing the 4 VM vApp

You can deploy the ViPR SRM 4 VM appliance from an OVF template using a vSphere Client.

Before you begin

- Download the OVF template from support.emc.com. The host being connected to the vCenter should be local to the ESX servers for the quickest deployment. Locate the OVF deployment files on the host running the vCenter client or place the files on the DataStore.

- If you are installing ViPR SRM on a cluster of ESX Servers, DRS must be enabled.

- Gather the following information:

  - vCenter location where you plan to deploy the appliance

  - DataStore that you can use for deployment

  - Static IP address to assign to your appliance

  - Gateway

  - Netmask

  - DNS servers

  - Domain search strings

Procedure

1. Open vSphere Client and connect to the vCenter Server that manages your VMware environment.

2. Select where you want to deploy the VMs for ViPR SRM.

3. Select **File › Deploy OVF Template**.

4. In the **Source** step, locate the OVF template file.

5. Click **Next**.

6. In the OVF Template Details step, review the details of the loaded OVF file, and then click **Next**.

7. In the **End User License Agreement** step, review the license agreement. Click **Accept**, and then click **Next**.

8. In the **Name and Location** step:

   a. Accept the default name or type a new name for the appliance.

   b. Specify an inventory location for the appliance in your VMware environment.

   c. Click **Next**.

9. Select the host or cluster where you want to run the deployed template, and then click **Next**.

10. Select the destination storage for the virtual machine files, and then click **Next**.

11. In the **Disk Format** step, select the storage space provisioning method, and then click **Next**.

Option	Description
Thin-provisioned format	On-demand expansion of available storage, used for newer data store file systems.
Thick-provisioned format	Appliance storage that is allocated immediately and reserved as a block.

Note

ViPR SRM is fully supported on thin-provisioned storage at the array or virtualization level. Thin on thin is acceptable, but not recommended.

12. In the **Network Mapping** step, select a destination network for each of the VMs, and then click **Next**.

13. In the **IP Address Allocation** step, choose the IP allocation policy and IP protocol to use, and then click **Next**.

14. In the **Properties** step, provide the values for each of the VMs, and then click **Next**.

15. In the **Ready to Complete** step, review the list of properties for the appliance, and then click **Finish**.

    A status bar opens in vSphere Client showing the deployment progress.

16. After you finish deployment, in the **Deployment Completed Successfully** dialog box, click **Close**.

17. Use the 1VM OVF to add any Additional Backend VMs and Collector VMs to be deployed this Datacenter. Use the procedure above to install these 1VM VMs into the vApp folder.

Starting the vApp

Use the vSphere client to start the vApp.

Procedure

1. Edit the vApp folder settings to adjust the Start Order. Move the listed VMs into four groups:

   - Group 1 – All Additional Backends
   - Group 2 – Primary Backend
   - Group 3 – All Collectors
   - Group 4 – Frontend

2. For the 1VM VM Shutdown Action, change the Operation – Guest Shutdown, Shutdown elapsed time to 600 seconds.

3. Adjust the Collector VM Memory to 16 GB or more per the EMC provided design for your ViPR SRM installation.

4. In the vSphere client, navigate to the **Host and Cluster** view.

5. Find the ViPR SRM vApp folder.

6. Right-click the vApp, and then select **Power On**.

   Each VM in the vApp is powered on. You can open a console window to watch the VM start-up process. After all of the VMs have completed their start-up process, ViPR SRM will be ready for login after some additional background processing completes. The

URL for logging in is `http://hostname:58080/APG` or `http://hostname/APG`.

Verifying that the services are running

Verify that the services are running on each host by obtaining the status.

Before you begin

Ensure that you have a login with root, APG, or system administrator privileges. The user apg is the account that the application uses instead of root.

Procedure

1. Type the command for your operating system from the `bin` directory of the installation:

Operating system	Command
UNIX	`manage-modules.sh service status all`
Windows	`manage-modules.cmd service status all`

2. Verify that each service has a status of running in the output.

Troubleshooting service start-up problems on UNIX

Check the log files when services do not start.

Before you begin

Ensure that you have logged in with root to check the log files.

Procedure

- The default ViPR SRM path is `/opt/APG/`.

  The list of available log files will vary depending on the type of server (Frontend, Backend, or Collector).

```
Databases/MySQL/Default/data/[SERVER NAME].err
Backends/Alerting-Backend/Default/logs/alerting-0-0.log
Backends/APG-Backend/Default/logs/cache-0-0.log
Collecting/Collector-Manager/Default/logs/collecting-0-0.log
Web-Servers/Tomcat/Default/logs/service.log
Tools/Task-Scheduler/Default/logs/scheduler-0-0.log
Tools/Webservice-Gateway/Default/logs/gateway-0-0.log
```

Logging in to the user interface

Log in to the user interface to use and edit reports, manage users, and customize the interface to meet your needs

Procedure

1. Open a browser and type the following URL:

   `http://<Frontend-hostname>:58080/APG`

2. Type the login credentials.

   The default username is **admin**. The default password is **changeme**.

3. Click **Sign In**.

You are automatically logged off after four hours.

Passwords

Use passwords to control access to the appliance.

Table 1 Default usernames and passwords

Environment	Username and password
Web-based console accessed in a browser	`admin`/`changeme` Ensure that you change this password.
Linux guest OS appliance console accessed through SSH or vSphere	`root`/`Changeme1!`

If you set the appliance console password while you deployed the OVF, the password that you entered is the default password.

Passwords must conform to the following requirements.:

- Be at least eight characters and no more than 40 characters
- Contain at least one numeric character
- Contain at least one uppercase and one lowercase character
- Contain at least one non-alphanumeric character such as # or !
- Cannot contain the single quote character (') because it is a delimiter for the password string

Note

These requirements do not apply to the Linux passwords.

CHAPTER 2

Using the 1VM vApp to Scaleout the Environment

This chapter includes the following topics:

Deploy Scaleout VMs in an existing vApp

ViPR SRM supports adding Additional Backends and Collectors to an existing vApp folder when scaling out in the same datacenter or when adding remote Collectors in different datacenters. Additional Backends are not supported in different datacenters than the Frontend and Primary Backend.

Before you begin

For instructions to add remote Collectors, see Deploy Collector VMs in different datacenters on page 19.

1. Login to the Virtual Center managing the vApp you want to scale out.

2. Right click the vApp and select **Shut Down**. Wait for all VMs in the vApp to shut down completely.

The host being connected to the vCenter should be local to the ESX servers for the quickest deployment. Locate the OVF deployment files on the host running the vCenter client or place the files on the DataStore.

Procedure

1. Open the vSphere Client and connect to the vCenter Server that manages your VMware environment.

2. Select the previously installed ViPR SRM vApp. The new VMs will be deployed inside the vApp folder. You do not need to shut down the existing vApp.

3. Select **File › Deploy OVF Template**.

4. In the **Source** step, locate the `ViPR_SRM_4.0.1_1VM_vApp.ovf` file.

   - Sample file path: `/opt/ovf/ViPR_SRM_4.0.1_1VM_vApp.ovf`

   - Sample URL: `http://myHost.emc.com/ovf/snapshot/92/ViPR_SRM_4.0.1_1VM_vApp.ovf`

5. Click **Next**.

6. In the **OVF Template Details** step, review the details of the loaded `.ovf` file and click **Next**.

7. In the **End User License Agreement** step, review the license agreement, click **Accept**, and then click **Next**.

8. In the **Name and Location** step, accept the default name (ViPR SRM) or type a **Name** for the appliance. Navigate to the **Inventory Location** to select the specific location for deploying the vApp VM. Click **Next**.

9. Select the deployment configuration (such as Collector Appliance or Additional Backend Appliance) from the drop-down.

10. Select the host or cluster where you want to run the deployed template. Select the listed ESX Cluster or Single ESX server and click **Next**.

    In the Resource Pool list, you should see the existing ViPR SRM vApp folder.

11. Select the storage (DataStore) for the virtual machine files and click **Next**.

12. In the **Disk Format** step, select the storage space provisioning method and click **Next**.

Option	Description
Thin-provisioned format	On-demand expansion of available storage, used for newer data store file systems.
Thick-provisioned format	Appliance storage that is allocated immediately and reserved as a block.

Note

ViPR SRM is fully supported on thin-provisioned storage at the array or virtualization level. Thin on thin is acceptable, but not recommended.

13. In the **Network Mapping** step, select a destination network for each of the VMs and click **Next**.

14. In the **IP Address Allocation** step, choose the IP allocation policy, the IP protocol to use, and click **Next**.

15. In the **Properties** step, provide the values for each of the VMs, and click **Next**.

16. In the **Ready to Complete** step, review the list of properties for the appliance and click **Finish**.

    A status bar opens in the vSphere Client showing the deployment progress.

17. Click **Close** in the **Deployment Completed Successfully** dialog.

After you finish

After all of the scale-out vApp VMs have been deployed and added to the ViPR SRM vApp folder, follow these steps to complete the configuration:

1. Edit the ViPR SRM vApp folder settings.

2. Modify the start order of the vApp entities as described in Modify start order of vApps on page 20.

3. Adjust and VM memory and CPU settings per your EMC ViPR SRM design specification.

4. Power off the vApp folder. All of the VMs will perform a Guest Shutdown in the reverse startup order

5. Power on the ViPR SRM vApp folder. Right click the vApp and select **Power On**.

A built-in service detects the new VMs and performs the needed configurations to add the scale-out VM to the exisiting SRM installation.

Deploy Collector VMs in different datacenters

Use this procedure to deploy remote Collectors in different datacenters.

Procedure

1. Open the vSphere Client and connect to the vCenter Server that manages your VMware environment.

2. Deploy the new Collector VMs using the `1VM-vApp.ovf` file.

3. Select the Collector Appliance deployment configuration from the drop-down menu.

4. Complete the deployment, and then proceed to the instructions in Scale Tools on page 21.

After you finish

If a Collector is in a remote datacenter, some configuration modifications to the Load Balancer Connectors, generic-rsc, and generic-snmp are required. These changes are described in the *Adding a new Collector Appliance* section of Scale Tools.

Add disk space

To expand the vApp VM filesystem, add a new VMDK (virtual machine disk) with the size of the additional storage needed. The VM can be running during this process.

Procedure

1. From the vSphere Console, select the individual VM where you want to add new disk storage.
2. Select **Edit Settings** on the virtual machine and click **Add**.
3. Select **Hard Disk** and click **Next** .
4. Select **Create a new virtual disk** and click **Next**.
5. Specify the disk size, the provisioning type, the location of the disk and click **Next**.
6. Specify the virtual device node (the default value should be **OK**) and click **Next**.
7. Review the options and click **Finish**.
8. Log in to the Linux host. You can access a login prompt through the vSphere Console or using an SSH tool such as PuTTY.
9. At the system prompt, type the command `expand_disk.pl`.

   The script will merge the new VMDK with the existing files system while the VM is still running. Use the `df  -h` command when the script is finished to see the new filesystem size.

Modify start order of vApps in SRM

Modify the start order of the vApps in an SRM installation whenever you add a vApp VM to the vApp folder.

Procedure

1. Right click the vApp and select **Edit Settings**.
2. Navigate to the **Start Order** tab.
3. Move the new VMs into the proper group based on the following:
   - Group 1: All Additional Backends
   - Group 2: Primary Backend
   - Group 3: All Collectors
   - Group 4: Frontend

4. In the **Shutdown Action** section, select **Guest Shutdown** from the **Operation** list.
5. Change the elapsed time to 600 seconds.
6. Click **OK**.

Scale Tools

Use the Scale Tools scripts to scaleout additional Collector appliances to existing ViPR SRM installations that are deployed in remote datacenters. The Scale Tools provided with ViPR SRM 4.0.1 allow you to use automated scale scripts to add and configure all Collectors in other datacenters.

Before you begin

Deploy all of the Collectors in all of the remote datacenters. They can be Collector vApps, Binary Linux, or Windows Collectors. Binary Collectors are installed using the "Collector" install option for both Linux and Windows. A Collector configuration script in Scale Tools finishes the Collector configuration so it is the same as a vApp Collector.

Scale Tools

Scale Tools is a package provided with ViPR SRM 4.0.1 and later that is installed on each ViPR SRM server. The package installs automated configuration scripts in the `<installation directory>/APG/bin` folder. Scale Tools configures the VIPR SRM environment for both Linux and Windows servers.

Note

The scale tools provided with ViPR SRM 3.7 and ViPR SRM 4.0 will not work.

The Scale Tools scripts use an answers file to automatically configure the ViPR SRM servers. You can use the Scale Tools for the following scenarios:

- Initial configuration of a Frontend, Primary Backend, Additional Backend, and Collector
- Adding new servers to an existing ViPR SRM environment

If a Scale Tools script configuration fails, you cannot run the script a second time. If the configuration fails, you must remove ViPR SRM from the server where you were running the script and reinstall ViPR SRM. Refer to .

Creating the Scale Tools answers file

Scale Tools is a command-line utility that can add a single server or multiple servers to your ViPR SRM environement. Scale Tools uses an answers file that you create that includes all of the servers in all of the datacenters in your ViPR SRM environment.

Before you begin

- The answers file is case sensitive and must be all lowercase.
- Create the file using notepad++ or the Linux vi editor.
- Name the file `Scale-config`.

The format of the answers file is: `server_type=hostname:os`

Definition	Description
server_type	The four basic types of ViPR SRM servers
hostname	The server's FQDN. It match the setting of the hostname variable in the `apg.properties` file. For Linux servers, this should always be the hostname plus the domain name (FQDN). For Windows, this could be the hostname (shortname) or the FQDN depending on how the Windows server resolution is configured (DNS,

Definition	Description
	Active DNS, or Wins/NetBios). A Wins resolution will use the hostname (shortname) in uppercase.
OS	linux-x64 or windows-x64

For example:

```
frontend=lglba148.lss.emc.com:linux-x64
primarybackend=lglba224.lss.emc.com:linux-x64
additionalbackend_1=lglac142.lss.emc.com:linux-x64
collector_1=lglba150.lss.emc.com:linux-x64
```

This initial answers file can be modified later to add any new Collectors and Additional Backends. When the Scale Tools scripts run, they distinguish new servers from existing servers and make the necessary configuration changes.

Because the Scale Tools and the answers file can be used for configuring additional servers, EMC recommends storing the files in a /sw directory in the / directory to prevent the files from being deleted from the /tmp directory.

Adding collectors to the existing ViPR SRM deployment.

Note

For Windows, use .cmd instead of .sh, and / instead of \ for directories.

Procedure

1. Configure the Linux and Windows binary collectors:

    a. Install the Scale Tools:

    ```
    manage-modules.sh install scale-tools
    ```

    b. Navigate to cd /opt/APG/bin.

    c. Run the Collector configuration script:

    ```
    launch-collector-configuration.sh -c /sw/Scale-config
    ```

    d. Verify that all of the services are running:

    ```
    manage-modules.sh service status all
    ```

    e. Repeat these steps on each Collector.

2. On the Additional Backend servers, run the following command:

    ```
    launch-additionalbackend-scale-collector.sh
    ```

3. On the Primary Backend server, run the following command:

    ```
    launch-primarybackend-scale-collector.sh
    ```

4. On the Frontend, run the following command:

```
launch-frontend-scale-collector.sh
```

Reconfiguring the LBC, generic-snmp, and generic-rsc

If a collector is powered on outside of the vApp, you must reconfigure the Load Balancer Connector, generic-snmp, and generic-rsc.

Procedure

1. From **Centralized Management**, click **SolutionPacks**.

2. Under **Other Components**, click the **Reconfigure** icon for a Load Balancer Connector.

3. From the **Arbiter configuration** drop-down menu, select **Add a new Arbiter configuration**.

4. In the **Arbiter hostname or IP address** field, enter the hostname or IP address of the primary backend.

5. From the **Alerting on data collection** drop-down menu, select **Add a new alerting on data collection**.

6. In the **Alerting Backend hostname or IP address** field, enter the hostname or IP address of the primary backend.

7. Repeat the steps for each Load Balancer Connector.

8. Under **Other Components**, click the **Reconfigure** icon for a generic-snmp or generic-rsc instance.

9. From the **Frontend Web Service** drop-down menu, select **Add a new Frontend Web service**.

10. In the **Tomcat hostname or IP address** field, enter the hostname or IP address of the frontend host.

11. From the **Topology Service** drop-down menu, select **Add a new Topology Service**.

12. In the **Topology Service hostname or IP address** field, enter the hostname or IP address of the primary backend.

13. In the **SNMP Collector Name** field, enter the FQDN of the collector host.

14. Repeat the steps for each instance of generic-snmp and generic-rsc.

Verifying DB Grants

After installing and configuring the ViPR SRM hosts, you can cross check the grant privileges configured for the ViPR SRM servers that are listed in the Scale Tools configuration file.

Procedure

1. Run the following script:

```
/opt/APG/bin/mysql-client.sh
```

2. When prompted, select root as the username, mysql for the database, and watch4net as the password.

3. Run the following query:

```
mysql> SELECT user, host, db, select_priv, insert_priv, grant_priv
FROM mysql.db;
```

The following table is an example of the configuration you should see on an Additional Backend host:

user	host	db	select_priv	insert_priv	grant_priv
apg	localhost	compliance	Y	Y	N
apg	localhost	apg	Y	Y	N
apg	localhost	events	Y	Y	N
apg	localhost	master	Y	Y	N
apg	localhost	topology	Y	Y	N
apg	lglba148.lss.emc.com	apg1	Y	Y	N
apg	lglba224.lss.emc.com	apg1	Y	Y	N
apg	lglac142.lss.emc.com	apg1	Y	Y	N
apg	lglba150.lss.emc.com	apg1	Y	Y	N
apg	localhost	apg1	Y	Y	N
apg	lglba148.lss.emc.com	apg2	Y	Y	N
apg	lglba224.lss.emc.com	apg2	Y	Y	N
apg	lglac142.lss.emc.com	apg2	Y	Y	N
apg	lglba150.lss.emc.com	apg2	Y	Y	N
apg	localhost	apg2	Y	Y	N
apg	lglba148.lss.emc.com	apg3	Y	Y	N
apg	lglba224.lss.emc.com	apg3	Y	Y	N
apg	lglac142.lss.emc.com	apg3	Y	Y	N
apg	lglba150.lss.emc.com	apg3	Y	Y	N
apg	localhost	apg3	Y	Y	N
apg	lglba148.lss.emc.com	apg4	Y	Y	N
apg	lglba224.lss.emc.com	apg4	Y	Y	N
apg	lglac142.lss.emc.com	apg4	Y	Y	N
apg	lglba150.lss.emc.com	apg4	Y	Y	N
apg	localhost	apg4	Y	Y	N

CHAPTER 3

Installing Using the Binary Installer

This chapter includes the following topics:

Options for standard installation

Learn how to install the platform using a binary installation package.

The platform infrastructure consists of four types of hosts:

- Frontend host

- Backend hosts (Primary and Additional)

- Collector host

- All-In-One (recommended for testing only)

You can only have one Primary Backend host. You can add Additional Backend hosts with up to four Time-Series databases on each.

For deployments to support 5 million metrics or more, EMC recommends deploying the Frontend, Primary Backend and Additional Backend hosts on the Linux operating system.

The MySQL version included with the product is 5.5.48 MySQL Community Server (GPL).

Table 2 Installation Options

	Frontend	Primary Backend	Additional Backend	Collector
Linux Installation Options	[f]rontend	[b]ackend	[m]inimal	[c]ollector
Windows Installation Options	Frontend Modules	Backend Modules	Base Installation (with none of the modules selected)	Collector Modules

General requirements

These requirements are for a minimal deployment. In a production environment, the requirements will vary depending on the provisioned load, and you must include careful planning and sizing before beginning the deployment.

The *ViPR SRM Planner* and the *EMC ViPR SRM Performance and Scalability Guidelines* document associated with your specific release will provide guidance for SolutionPacks and object discovery.

For details about configuring CA SSL certificates, refer to the *EMC M&R Security Configuration Guide*.

The environment must meet the following requirements:

- 64 bit operating system (Linux or Windows)

- 16 to 24 GB RAM for each host

- Frontend – 16 GB RAM, 320 GB disk storage

- Backends – 24 GB RAM, disk storage is determined by the sizing

- Collectors – 16 GB RAM, 130+ GB disk storage

- 4 CPUs per host

- Forward and Reverse IP and DNS lookups must work on each server

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Note

The following sections use Linux commands and directories as examples. For Windows, use `.cmd` instead of `.sh`, and `/` instead of `\` for directories.

Linux requirements

The environment must meet the following requirements:

- `/tmp` folder larger than 2.5 GB

- SWAP file should be at least equal to the RAM size

- On CentOs or RedHat-like Linux, the SELinux should be disabled or reconfigured

- The graphical desktop environment is not required

- On some Linux distributions:

  - MySQL server requires libaio1, libaio-dev, or libaio to start

  - The installation process requires unzip

  - On system restart the apg services may not start

Installing on UNIX

You can install the product on supported UNIX hosts. This procedure specifically uses the Linux installation procedure as an example.

Before you begin

- Ensure that you have a login with root privileges.

- Ensure that the ports listed in the *Ports Usage Matrix* are enabled and not blocked by the firewall.
  Refer to Updating firewall ports in Red Hat and CentOS servers on page 38.

- Download the installation file from `support.emc.com`, and place it in a folder (for example `/sw`) on the server.

These instructions are meant to provide a high-level overview of the installation process. Detailed instructions are provided in the following sections.

Procedure

1. Log in to the server as root.

2. Navigate to the `/sw` folder.

3. Change the permissions of the installer.

   For example: `chmod +x <file_name>.sh`

4. Run the installer from the directory.

   For example: `./<file_name>.sh`

5. Read and accept the End User License Agreement.

6. Accept the default installation directory of `/opt/APG` or type another location.

7. Select the appropriate installation option for the type of host that you are installing.

Configuring the user process limits for a Linux installation

Increase the user process limits for the apg user account to a maximum of 65534. This modification enables services to open 65534 files and 65534 processes when needed. This step is required for proper functioning of the core software.

Before you begin

- Make sure you have a login with root privileges.

- The core software installed on a server running Red Hat Enterprise Linux 6, CentOS Linux 6, SUSE Linux Enterprise Server (SLES) 11, or any other supported Linux operating systems.

Procedure

1. Open the `/etc/security/limits.conf` file.

2. Add the following lines for the user.

   In this example, the user is `apg`.

   ```
   apg    hard   nofile   65534
   apg    soft   nofile   65534
   apg    hard   nproc    65534
   apg    soft   nproc    65534
   ```

3. Save the file.

4. To verify the changes, type the following command:

   ```
   su apg -c 'ulimit -n -u'
   ```

5. In the `apg.properties` file, edit the hostname to a FQDN host name.

6. To restart the services, type the following commands from the `bin` directory of the installation:

   ```
   ./manage-modules.sh service stop all
   ```

   ```
   ./manage-modules.sh service start all
   ```

Installing on Windows Server

You can install the product on supported Windows Server hosts.

Before you begin

- Ensure that you have a login with system administrator privileges.

- Ensure that the ports listed in the *Ports Usage Matrix* are enabled and not blocked by the firewall.

- Download the installation file from `support.emc.com`, and place it in a folder (for example, `c:\sw`) on the server.

These instructions are meant to provide a high-level overview of the installation process. Detailed instructions are provided in the following sections.

Procedure

1. Navigate to the `c:\sw` folder.

2. Double-click the `.exe` file.

3. Click **Next** on the **Welcome** screen.

4. Read and accept the End User License Agreement. Click **I Agree**.

5. Select the Destination Folder, and then click **Next**.

6. Select the appropriate installation option for the type of host that you are installing.

7. Click **Install**.

8. When the installation is complete, click **Next**.

9. Click **Finish**.

10. In the `Program Files\APG\bin\apg.properties` file, edit the hostname to a FQDN host name.

11. Restart the services:

```
manage-modules.cmd service restart all
```

Configuring virus-scanning software

Running virus-scanning software on directories containing MySQL data and temporary tables can cause issues, both in terms of the performance of MySQL and the virus-scanning software misidentifying the contents of the files as containing spam.

After installing MySQL Server, it is recommended that you disable virus scanning on the directory used to store your MySQL table data (such as `C:\Program Files\APG\Databases\MySQL\Default\data`). In addition, by default, MySQL creates temporary files in the standard Windows temporary directory. To prevent scanning the temporary files, configure a separate temporary directory for MySQL temporary files and add this directory to the virus scanning exclusion list. To do this, add a configuration option for the tmpdir parameter to your my.ini configuration file.

Scale Tools

Scale Tools is a package provided with ViPR SRM 4.0.1 and later that is installed on each ViPR SRM server. The package installs automated configuration scripts in the `<installation directory>/APG/bin` folder. Scale Tools configures the VIPR SRM environment for both Linux and Windows servers.

Note

The scale tools provided with ViPR SRM 3.7 and ViPR SRM 4.0 will not work.

The Scale Tools scripts use an answers file to automatically configure the ViPR SRM servers. You can use the Scale Tools for the following scenarios:

- Initial configuration of a Frontend, Primary Backend, Additional Backend, and Collector
- Adding new servers to an existing ViPR SRM environment

If a Scale Tools script configuration fails, you cannot run the script a second time. If the configuration fails, you must remove ViPR SRM from the server where you were running the script and reinstall ViPR SRM. Refer to .

Creating the Scale Tools answers file

Scale Tools is a command-line utility that can add a single server or multiple servers to your ViPR SRM environement. Scale Tools uses an answers file that you create that includes all of the servers in all of the datacenters in your ViPR SRM environment.

Before you begin

- The answers file is case sensitive and must be all lowercase.
- Create the file using notepad++ or the Linux vi editor.
- Name the file `Scale-config`.

The format of the answers file is: `server_type=hostname:os`

Definition	Description
server_type	The four basic types of ViPR SRM servers
hostname	The server's FQDN. It match the setting of the hostname variable in the `apg.properties` file. For Linux servers, this should always be the hostname plus the domain name (FQDN). For Windows, this could be the hostname (shortname) or the FQDN depending on how the Windows server resolution is configured (DNS, Active DNS, or Wins/NetBios). A Wins resolution will use the hostname (shortname) in uppercase.
OS	linux-x64 or windows-x64

For example:

```
frontend=lglba148.lss.emc.com:linux-x64
primarybackend=lglba224.lss.emc.com:linux-x64
additionalbackend_1=lglac142.lss.emc.com:linux-x64
collector_1=lglba150.lss.emc.com:linux-x64
```

This initial answers file can be modified later to add any new Collectors and Additional Backends. When the Scale Tools scripts run, they distinguish new servers from existing servers and make the necessary configuration changes.

Because the Scale Tools and the answers file can be used for configuring additional servers, EMC recommends storing the files in a `/sw` directory in the `/` directory to prevent the files from being deleted from the `/tmp` directory.

Installing and configuring the Primary Backend hosts

Learn how to install and configure the Primary Backend hosts.

Before you begin

- Identify the host you want to configure as the Primary Backend host.
- Identify the hosts you want to configure as the Frontend, Collectors, and Additional Backends.
- Ensure that you have created an answers file as described in .
- Minimum System Requirements:
  - CPU: 4
  - Memory: 24 GB

- Disk Space: 120 GB (expandable)

Procedure

1. Start the installation as described in Installing on UNIX on page 27.

2. When you are prompted to select the installation type, choose the Backend option and complete the installation.

3. Configure the user process limits as described in Configuring the user process limits for a Linux installation on page 28 .

4. Install the Scale Tools:

```
manage-modules.sh install scale-tools
```

5. Navigate to `/opt/APG/bin`.

6. Run the Primary Backend configuration script:

```
launch-primarybackend-configuration.sh -c /sw/Scale-config
```

7. Verify that all the services are running:

```
manage-modules.sh service status all
```

8. Cross check the DB grants as described in Verifying DB grants on page 23.

Installing and configuring the Additional Backend hosts

Learn how to install and configure the additional backend host.

Before you begin

- Identify the host you want to configure as the Additional Backend host.

- Identify the hosts you want to configure as the Frontend, Collectors, and Additional Backends.

- Ensure that you have created an answers file as described in Creating the Scale Tools answers file on page 21.

- Minimum System Requirements:

    - 64-bit Operating System

    - CPU: 4

    - Memory: 24 GB

    - Disk Space: 120 GB (expandable)

Procedure

1. Start the installation as described in Installing on UNIX on page 27.

2. When you are prompted to select the installation type, choose the Minimal option and complete the installation.

3. If necessary, configure the user process limits as described in Configuring the user process limits for a Linux installation on page 28.

4. Install the Scale Tools:

```
manage-modules.sh install scale-tools
```

5. Navigate to `/opt/APG/bin`.

6. Run the Additional Backend configuration script:

```
launch-additionalbackend-configuration.sh -c /sw/Scale-config
```

7. Verify that all the services are running:

```
manage-modules.sh service status all
```

8. Cross check the DB grants as described in Verifying DB grants on page 23.

Installing and configuring the Collector host

Learn how to install and configure the Collector host.

Before you begin

- Identify the hosts you want to configure as the Collector hosts.
- Ensure that you have created an answers file as described in Creating the Scale Tools answers file on page 21.
- Minimum System Requirements:
  - 64 bit operating system (Linux or Windows)
  - CPU: 4
  - Memory: 8 to 16 GB
  - Disk Space: 120 GB (expandable)

Procedure

1. Start the installation as described in Installing on UNIX on page 27 or Installing on Windows Server on page 28.

2. When you are prompted to select the installation type, choose the Collector option and complete the installation.

3. If necessary, configure the user process limits as described in Configuring the user process limits for a Linux installation on page 28 .

4. Install the Scale Tools:

```
manage-modules.sh install scale-tools
```

5. Navigate to `/opt/APG/bin`.

6. Run the Collector configuration script:

```
launch-collector-configuration.sh -c /sw/Scale-config
```

7. Verify that all the services are running:

Option	Description
Linux	`manage-modules.sh service status all`
Windows	`manage-modules.cmd service status all`

8. The Generic-RSC and Generic-SNMP modules will be installed by default. If you do not plan to use this collector for host discovery or SNMP discovery, you can choose to remove these modules. To remove these modules:

```
/opt/APG/bin/manage-modules.sh remove generic-snmp
```

Installing and configuring the Frontend host

Learn how to install and configure the frontend host.

Before you begin

- Ensure that you have the details of the Backend host, Additional Backend hosts, and Collector hosts.

- Ensure that you have created an answers file as described in Creating the Scale Tools answers file on page 21.

- Minimum System Requirements:

  - 64-bit Operating System

  - CPU: 4

  - Memory: 16 GB

  - Disk Space: 120 GB (expandable)

Procedure

1. Start the installation as described in Installing on UNIX on page 27.

2. When you are prompted to select the installation type, choose the Frontend option and complete the installation.

3. Configure the user process limits as described in Configuring the user process limits for a Linux installation on page 28 .

4. Install the Scale Tools:

```
manage-modules.sh install scale-tools
```

5. Navigate to /opt/APG/bin.

6. Run the Frontend configuration script:

```
launch-frontend-configuration.sh -c /sw/Scale-config
```

During the Frontend configuration the management-resources are configured on the Primary Backend server. If the ViPR SRM ports are not open, then this configuration script will fail with this error: "Some operations failed to execute successfully." Review the logs and fix any errors manually. Refer to Adding Red Hat and CentOS server firewall ports on page 38 to establish the ViPR SRM ports on all the ViPR SRM servers. Do not attempt to run this script again. You must remove ViPR SRM from the server where you were running the script and reinstall ViPR SRM. Refer to Uninstallation on page 63.

7. Verify that all the services are running:

```
manage-modules.sh service status all
```

8. Verify that the ViPR SRM management resources have been created:

```
/opt/APG/bin/manage-resources.sh list
```

The following is an example of the management resources that would be created for a four server ViPR SRM environment:

```
"dba/APG-DB",
"dba/APG-DB-lglac142-1",
"dba/APG-DB-lglac142-2",
"dba/APG-DB-lglac142-3",
"dba/APG-DB-lglac142-4",
"dba/FLOW-COMPLIANCE-BREACH",
```

Scaling-out a ViPR SRM environment with Additional Backend hosts

To scale-out the existing ViPR SRM environment with Additional Backends servers, use the Scale Tools to automate the configuration. When adding Additional Backend servers, the Scale Tools scripts adds new servers to the existing ViPR SRM environment.

Before you begin

- Identify the host you want to configure as the Additional Backend host.

- Get the details of the existing ViPR SRM environment that you want to scale.

- Minimum System Requirements:

    - 64-bit Operating System

    - CPU: 4

    - Memory: 24 GB

    - Disk Space: 120 GB (expandable)

Note

For Windows convert `.sh` to `.cmd` for the commands and `/` to `\` for directories.

Procedure

1. Start the installation as described in Installing on UNIX on page 27.

2. When you are prompted to select the installation type, choose the Minimal option and complete the installation.

3. Configure the user process limits as described in Configuring the user process limits for a Linux installation on page 28.

4. Install the Scale Tools:

```
manage-modules.sh install scale-tools
```

5. Modify the Scale Tools answer file (`Scale-config`) and give it a new name (`Scale-config-more`).

   There should now be two answers files in the `/sw` directory (`Scale-config` and `Scale-config-more`).

6. Add the new Additional Backend to the `Scale-config-more` file.

   In the example below, `additionalbackend_2` is the new Additional Backend.

   ```
   frontend=lglba148.lss.emc.com:linux-x64
   primarybackend=lglba224.lss.emc.com:linux-x64
   additionalbackend_1=lglac142.lss.emc.com:linux-x64
   additionalbackend_2=lglac143.lss.emc.com:linux-x64
   collector_1=lppd149.lss.emc.com:linux-x64
   ```

7. Push the new answer file (`Scale-config-more`) to the ViPR SRM Frontend, Primary Backend, and Additional Backends. (This new file is not needed on the existing Collector servers.)

8. Navigate to `/opt/APG/bin`.

9. Run the following scrip to configure the new Additional Backend host:

   ```
   launch-additionalbackend-configuration.sh -c /sw/Scale-config
   ```

10. Verify that all the services are running:

    ```
    manage-modules.sh service status all
    ```

11. Run the following script on each Additional Backend:

    ```
    launch-additionalbackend-scale-additionalbackend.sh -c / sw/Scale-
    config-more
    ```

12. Run the following script on each Primary Backend:

    ```
    launch-primarybackend-scale-additionalbackend.sh -c / sw/Scale-
    config-more
    ```

13. Run the following script on each Frontend:

    ```
    launch-frontend-scale-additionalbackend.sh -c / sw/Scale-config-
    more
    ```

Scaling-out a ViPR SRM environment with Collector hosts

To scale-out the existing ViPR SRM environment with new collector hosts, use the Scale Tools to automate the configuration. When adding collector hosts, the Scale Tools scripts adds new servers to the existing ViPR SRM environment.

Before you begin

- Identify the host you want to configure as the Collector host.
- Get the details of the existing ViPR SRM environment that you want to scale.
- Minimum System Requirements:
  - 64-bit Operating System
  - CPU: 4
  - Memory: 24 GB

■ Disk Space: 120 GB (expandable)

Note

For Windows, convert `.sh` to `.cmd` for the commands and `/` to `\` for directories.

Procedure

1. Start the installation as described in Installing on UNIX on page 27 or Installing on Windows Server on page 28.

2. When you are prompted to select the installation type, choose the Collector option and complete the installation.

3. If necessary, configure the user process limits as described in Configuring the user process limits for a Linux installation on page 28.

4. Install the Scale Tools:

```
manage-modules.sh install scale-tools
```

5. If you have not already, modify the Scale Tools answer file (`Scale-config`) and give it a new name (`Scale-config-more`).

   There should be two answers files in the `/sw` directory (`Scale-config` and `Scale-config-more`).

6. Add the new collector to the `Scale-config-more` file.

   In the example below, `collector_2` is the new Collector.

```
frontend=lglba148.lss.emc.com:linux-x64
primarybackend=lglba224.lss.emc.com:linux-x64
additionalbackend_1=lglac142.lss.emc.com:linux-x64
additionalbackend_2=lglac143.lss.emc.com:linux-x64
collector_1=lppd149.lss.emc.com:linux-x64
collector_2=lglba150.lss.emc.com:linux-x64
```

7. Push the new answer file (`Scale-config-more`) to the ViPR SRM Frontend, Primary Backend, and Additional Backends. (This new file is not needed on the existing Collector servers.)

8. Navigate to `/opt/APG/bin`.

9. Run the following scrip to configure the new Additional Backend host:

```
launch-collector-configuration.sh -c /sw/Scale-config
```

10. Verify that all the services are running:

Option	Description
Linux	manage-modules.sh service status all
Windows	manage-modules.cmd service status all

11. Run the following script on each Additional Backend:

```
launch-additionalbackend-scale-collector.sh -c / sw/Scale-config-more
```

12. Run the following script on each Primary Backend:

```
launch-primarybackend-scale-collector.sh -c / sw/Scale-config-more
```

13. Run the following script on each Frontend:

```
launch-frontend-scale-collector.sh -c / sw/Scale-config-more
```

Verifying DB Grants

After installing and configuring the ViPR SRM hosts, you can cross check the grant privileges configured for the ViPR SRM servers that are listed in the Scale Tools configuration file.

Procedure

1. Run the following script:

```
/opt/APG/bin/mysql-client.sh
```

2. When prompted, select root as the username, mysql for the database, and watch4net as the password.

3. Run the following query:

```
mysql> SELECT user, host, db, select_priv, insert_priv, grant_priv
FROM mysql.db;
```

The following table is an example of the configuration you should see on an Additional Backend host:

user	host	db	select_priv	insert_priv	grant_priv
apg	localhost	compliance	Y	Y	N
apg	localhost	apg	Y	Y	N
apg	localhost	events	Y	Y	N
apg	localhost	master	Y	Y	N
apg	localhost	topology	Y	Y	N
apg	lglba148.lss.emc.com	apg1	Y	Y	N
apg	lglba224.lss.emc.com	apg1	Y	Y	N
apg	lglac142.lss.emc.com	apg1	Y	Y	N
apg	lglba150.lss.emc.com	apg1	Y	Y	N
apg	localhost	apg1	Y	Y	N
apg	lglba148.lss.emc.com	apg2	Y	Y	N
apg	lglba224.lss.emc.com	apg2	Y	Y	N
apg	lglac142.lss.emc.com	apg2	Y	Y	N
apg	lglba150.lss.emc.com	apg2	Y	Y	N
apg	localhost	apg2	Y	Y	N
apg	lglba148.lss.emc.com	apg3	Y	Y	N
apg	lglba224.lss.emc.com	apg3	Y	Y	N
apg	lglac142.lss.emc.com	apg3	Y	Y	N
apg	lglba150.lss.emc.com	apg3	Y	Y	N
apg	localhost	apg3	Y	Y	N
apg	lglba148.lss.emc.com	apg4	Y	Y	N
apg	lglba224.lss.emc.com	apg4	Y	Y	N
apg	lglac142.lss.emc.com	apg4	Y	Y	N
apg	lglba150.lss.emc.com	apg4	Y	Y	N
apg	localhost	apg4	Y	Y	N

Updating firewall ports in Red Hat and CentOS servers

The Red Hat and CentOS operating systems are installed by default with the OS firewall (firewalld) locked down. Only a few basic ports are open (such as SSH). On these operating systems, the firewall must be modified to allow the ViPR SRM ports.

Procedure

1. Using a Linux editor, create an xml file and save it as `apg.xml` in the `/etc/firewalld/services` directory.

2. Add the following text to the xml file:

```xml
<?xml version="1.0" encoding="utf-8"?>
<service>
  <short>TEST</short>
  <description>Add ViPR SRM Ports to Red Hat and CentOS Firewall</description>
  <port protocol="tcp" port="58080"/>
  <port protocol="tcp" port="2000"/>
  <port protocol="tcp" port="2001"/>
  <port protocol="tcp" port="2100"/>
  <port protocol="tcp" port="2101"/>
  <port protocol="tcp" port="2200"/>
  <port protocol="tcp" port="2201"/>
  <port protocol="tcp" port="2300"/>
  <port protocol="tcp" port="2301"/>
  <port protocol="tcp" port="2400"/>
  <port protocol="tcp" port="2401"/>
  <port protocol="tcp" port="2003"/>
  <port protocol="tcp" port="2008"/>
  <port protocol="tcp" port="2009"/>
  <port protocol="tcp" port="2010"/>
  <port protocol="tcp" port="2012"/>
  <port protocol="tcp" port="2020"/>
  <port protocol="tcp" port="2022"/>
  <port protocol="tcp" port="2040"/>
  <port protocol="tcp" port="2041"/>
  <port protocol="tcp" port="5480"/>
  <port protocol="tcp" port="5488"/>
  <port protocol="tcp" port="5489"/>
  <port protocol="tcp" port="8082"/>
  <port protocol="tcp" port="8189"/>
  <port protocol="tcp" port="8888"/>
  <port protocol="tcp" port="8889"/>
  <port protocol="tcp" port="9996"/>
  <port protocol="tcp" port="22000"/>
  <port protocol="tcp" port="22020"/>
  <port protocol="tcp" port="22020"/>
  <port protocol="tcp" port="48443"/>
  <port protocol="tcp" port="52001"/>
  <port protocol="tcp" port="52004"/>
  <port protocol="tcp" port="52007"/>
  <port protocol="tcp" port="52569"/>
  <port protocol="tcp" port="52755"/>
  <port protocol="tcp" port="53306"/>
  <port protocol="tcp" port="58005"/>
  <port protocol="tcp" port="389"/>
  <port protocol="tcp" port="58443"/>
  <port protocol="tcp" port="5988"/>
  <port protocol="tcp" port="5989"/>
  <port protocol="tcp" port="5986"/>
  <port protocol="tcp" port="80"/>
  <port protocol="tcp" port="443"/>
  <port protocol="tcp" port="8080"/>
  <port protocol="tcp" port="2707"/>
```

```
  <port protocol="tcp" port="8443"/>
  <port protocol="tcp" port="2443"/>
  <port protocol="tcp" port="4443"/>
  <port protocol="tcp" port="2682"/>
  <port protocol="tcp" port="1521"/>
  <port protocol="tcp" port="9004"/>
  <port protocol="tcp" port="9002"/>
  <port protocol="tcp" port="7225"/>
  <port protocol="tcp" port="58083"/>
  <port protocol="tcp" port="52755"/>
  <port protocol="tcp" port="2060"/>
  <port protocol="tcp" port="3682"/>
  <port protocol="udp" port="161"/>
  <port protocol="udp" port="162"/>
  <port protocol="udp" port="2040"/>
  <port protocol="udp" port="2041"/>
</service>
```

3. Copy the `apg.xml` file to the `/etc/firewalld/services` directory.

4. Run the following command to add the ports to the existing firewall:

   ```
   firewall-cmd --permanent --add-service=apg
   ```

5. Check the status of firewalld:

   ```
   systemctl status firewalld
   ```

Editing new actions scripts

Edit actions on the frontend host to send events to the machine on which the event-processing-manager of the alerting-consolidation module is configured.

Procedure

1. In the following file, replace 127.0.0.1 with the primary backend IP address:

Option	Description
Linux	`/opt/APG/Custom/WebApps-Resources/Default/actions/event-mgmt/linux/conf`
Windows	`Program Files\APG\Custom\WebApps-Resources\Default\actions\event-mgmt\windows\conf.cmd`

Verifying that the services are running

Verify that the services are running on each host by obtaining the status.

Before you begin

Ensure that you have a login with root, APG, or system administrator privileges. The user apg is the account that the application uses instead of root.

Procedure

1. Type the command for your operating system from the `bin` directory of the installation:

Operating system	Command
UNIX	`manage-modules.sh service status all`
Windows	`manage-modules.cmd service status all`

2. Verify that each service has a status of running in the output.

Troubleshooting service start-up problems on UNIX

Check the log files when services do not start.

Before you begin

Ensure that you have logged in with root to check the log files.

Procedure

- The default ViPR SRM path is `/opt/APG/`.

  The list of available log files will vary depending on the type of server (Frontend, Backend, or Collector).

```
Databases/MySQL/Default/data/[SERVER NAME].err
Backends/Alerting-Backend/Default/logs/alerting-0-0.log
Backends/APG-Backend/Default/logs/cache-0-0.log
Collecting/Collector-Manager/Default/logs/collecting-0-0.log
Web-Servers/Tomcat/Default/logs/service.log
Tools/Task-Scheduler/Default/logs/scheduler-0-0.log
Tools/Webservice-Gateway/Default/logs/gateway-0-0.log
```

Troubleshooting service start-up problems on Windows

Check the log files when services do not start.

Before you begin

Ensure that you have logged in with system administrator credentials to check the log files.

Procedure

- Look for log files in these `C:\Program Files\APG` directory paths.

  The list of available log files will vary depending on the type of server (Frontend, Backend, or Collector).

```
Databases\MySQL\Default\data\[SERVER NAME].err.
Backends\Alerting-Backend\Default\logs\alerting-0-0.log
Backends\APG-Backend\Default\logs\cache-0-0.log
Collecting\Collector-Manager\Default\logs\collecting-0-0.log
Web-Servers\Tomcat\Default\logs\service.log
Tools\Task-Scheduler\Default\logs\scheduler-0-0.log
Tools\Webservice-Gateway\Default\logs\gateway-0-0.log
```

Logging in to the user interface

Log in to the user interface to use and edit reports, manage users, and customize the interface to meet your needs

Procedure

1. Open a browser and type the following URL:

   `http://<Frontend-hostname>:58080/APG`

2. Type the login credentials.

   The default username is `admin`. The default password is `changeme`.

3. Click **Sign In**.

   Note

   You are automatically logged off after four hours.

Connecting to Centralized Management

Connect to the server so that you can access Centralized Management to install and administer SolutionPacks.

Centralized Management is one of the multiple web applications available in EMC M&R platform.

Procedure

1. Open a browser.

2. Type `http://<serverIP:port>/centralized-management`.

   The *serverIP* is the fully qualified hostname or IP address of the server where the EMC M&R platform frontend runs.

   The *port* is the port number of the server.

   Example:

   ```
   http://myHost.emc.com:58080/centralized-management
   ```

3. Log in.

   a. Default username is `admin`.

   b. Default password is `changeme`.

   c. Click **Sign In**.

After you finish

You are automatically logged off after four hours.

CHAPTER 4

Automating the Download of Updates

This chapter includes the following topics:

Online Update overview

Online Update automatically downloads the latest versions of the SolutionPacks and EMC M&R components from the EMC Update server to the Module Repository on the Centralized Management (CM) server.

In a multi-server environment, the downloaded modules are distributed to all of the remote servers managed by the CM server.

Configuring server settings for online updates

Procedure

1. Click **Administration** .
2. Click **Centralized Management**.
3. Click **Configuration** › **Online Update** .
4. Ensure that you are on the **Settings** tab.
5. Check the **Enabled** checkbox.
6. Type your EMC Online Support username and password.
7. Click the icon to test connectivity to the update server.

   The icon indicates that connectivity to the server has been established.

   The icon indicates that connectivity to the server failed.

8. Click **Save**.

Enabling the online update task

Enable the Online Update task to download the latest updates from the EMC Update server automatically.

Procedure

1. Click **Administration** .
2. Click **Centralized Management**.
3. On the **Physical Overview** page, click the *‹host_name›* - **Front End** where the Online Update task needs to run.
4. Click **Tasks**.
5. Type `OnlineUpdate` in the **Search** bar.
6. Click the **OnlineUpdate** scheduled task.
7. Click **Enable**.

   Note

   By default, this task is set to run once everyday at 12AM. You can customize the task schedule by editing the configuration file.

Running the online update task manually

At any time, you can run the Online Update task manually to access the available updates.

Procedure

1. Click **Administration** .

2. Click **Centralized Management**.

3. On the **Physical Overview** page, click the *‹host_name›* - **Front End** where the Online Update task needs to run.

4. Click **Tasks**.

5. Type `OnlineUpdate` in the **Search** bar.

6. Click the **OnlineUpdate** scheduled task.

7. Click **Run Now**.

Online Update Status

The Online Update Status tab indicates whether or not the last online update check was successful, provides the date and time of the last successful check, and lists any updates that are available for download.

Figure 1 Online Update Status

If a major update of the EMC M&R platform is detected, the Status tab includes a Major Update Status section that describes the version that is available, provides a link to the upgrade documentation, and includes a Start Download button.

Figure 2 Online Update Status with a major version update detected
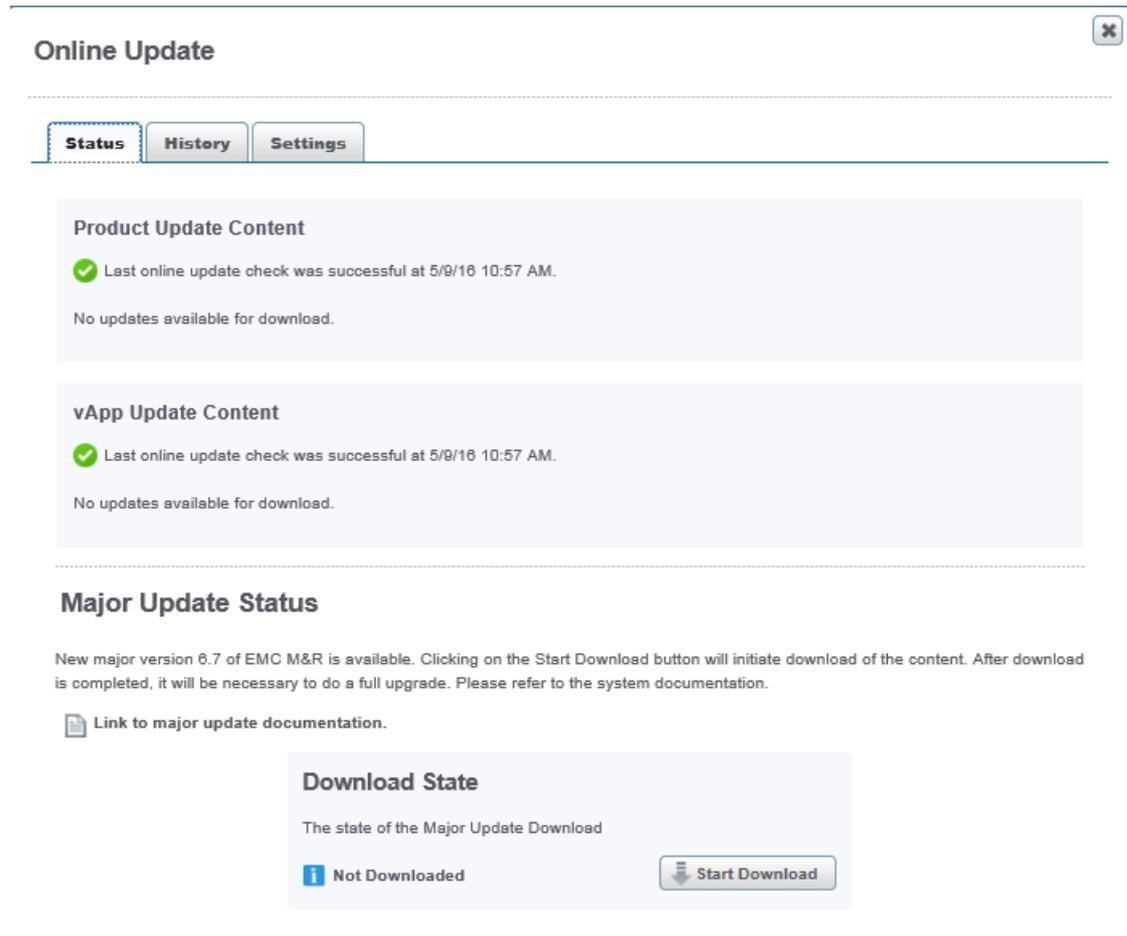
Downloading a major update

You can use Online Update to download a major version of the EMC M&R platform. You should only download a major version if you intend to immediately complete the full upgrade process.

Procedure

1. Click **Administration** ⚙.

2. Click **Centralized Management**.

3. Click **Configuration** › **Online Update**.

4. Click the **Status** tab.

5. Click **Start Download**. When the download is finished, the Download State will change from "Not Downloaded" to "Complete."

6. Complete the upgrade process as described in the upgrade documentation.

Online Update History

The Online Update History tab provides a download history with the names of the components, the version numbers, and the date and time of the downloads.

The History tab also allows you to search the download history for a particular component name or version number.

Disabling the online update task

You can disable the Online Update task if you prefer to manually download the updates from the EMC Update server.

Procedure

1. Click **Administration** .

2. Click **Centralized Management**.

3. On the **Physical Overview** page, click the *‹host_name›* - **Front End** where the Online Update task needs to run.

4. Click **Tasks.**

5. Type `OnlineUpdate` in the **Search** bar.

6. Click the **OnlineUpdate** scheduled task.

7. Click **Disable.**

CHAPTER 5

Licensing

This chapter includes the following topics:

Licensing concepts

Learn how to manage and troubleshoot ViPR SRM ELMS licensing. Learn how to upload license files, delete trial licenses, verify available licenses, and synchronize licenses on multiple hosts.

Starting with ViPR SRM 3.0, ViPR SRM uses ViPR SRM the Electronic Licensing Management System (ELMS) for licensing. ViPR SRM runs on the EMC M&R platform, which uses a different licensing system. Various other products that also run on EMC M&R, such as Software Assurance Suite (SAS) and ViPR, continue to use the legacy license system, which is also referred to as EMC M&R licenses.

To manage ViPR SRM licensing, you need to understand permanent and trial licensing and the relationship between EMC M&R features and the ViPR SRM ELMS licenses.

After installation: Licenses and SolutionPacks

A ViPR SRM installation includes the software for the core system features and all SolutionPacks. Although the installation includes the software for all SolutionPacks, your site might not have permanent licenses for all of them.

The ViPR SRM licensing method divides product content into the following three categories:

1. ViPR SRM core software, which is a bundling of core features and selected SolutionPacks.

2. ViPR SRM add-on SolutionPacks.

3. SolutionPacks that are not part of ViPR SRM.

See ELMS license entitlements on page 59 for the list of features included in the core suite and a list of available ViPR SRM add-on licenses.

EMC M&R feature names and ELMS licenses

EMC M&R is the underlying platform for ViPR SRM. EMC M&R identifies functionality using strings known as EMC M&R feature names. ELMS licenses use a different set of strings to refer to sets of features.

Feature names are formal references to SolutionPack names, collectors, and components that work within the product. For example, XML Collector is the feature name corresponding to the collector component that collects XML data. As another example, the SolutionPack that collects VNX data uses the feature name SolutionPack for EMC VNX. Services and components typically require multiple sets of features to run properly.

An ELMS license maps to a set of EMC M&R features.

For a list of ELMS license names and the features that they enable, see ELMS License Entitlements at the end of this article.

Trial licenses

Your ViPR SRM software can include all trial licenses or a combination of permanent and trial licenses.

Licenses that you purchase are permanent. Other software comes with trial licenses.

Trial licenses let you test features in the UI and perform some initial configurations before full purchase. Trial licenses typically last for 30 days after the installation time. You cannot copy or regenerate a trial license in the product.

If all of your licenses are trial licenses, including the core software license that includes the Web Portal feature, the software can lock out all users from accessing the UI when the trial expires.

License duration

Permanent licenses do not expire. Trial licenses have expiration dates, typically 30 days after the installation date.

When trial licenses expire, module license checks fail and the modules stop working. If the Web Portal module fails, you cannot access the product.

Because the License Management UI operates behind the Web Portal module, you must upload your permanent license file or extended trials before the 30-day license for the core features expires. Otherwise, the UI locks and you cannot upload the license file. If this happens, see Troubleshooting licensing on page 56.

License purchase

To convert a feature from a trial license into a permanently licensed feature, you need to purchase a license.

To initiate the purchase of a license for a SolutionPack or ReportPack, visit EMC Online Support using the following URL:

```
https://support.emc.com/servicecenter/createSR/
```

On the page that appears, submit a service request to EMC. Include the SolutionPack or ReportPack name that you want to purchase.

When all purchasing transactions are complete, EMC sends you instructions for downloading a regenerated license file for your site that includes the newly purchased software license. Download the file to a local server, and then follow instructions in Upload a new license file on page 54 to upload the new license file into ViPR SRM.

Note

Until the license is purchased and the new license file is obtained and uploaded into ViPR SRM, the SolutionPack is inoperable, unless the 30-day trial license is still in effect.

Licensing operations

Use the ViPR SRM Centralized Management UI to perform licensing management operations, such as uploading, verifying, deleting, and synchronizing licenses.

Log in with admin credentials

You must have administrator credentials to perform license management operations.

Procedure

1. Access ViPR SRM by typing the following URL in a web browser:

```
http://frontend-hostname:58080/centralized-management
```

where *frontend-hostname* is the server where the ViPR SRM frontend module is installed.

The ViPR SRM login page opens.

2. Log in with a user account that has administrator credentials.

   The Centralized Management UI opens to the Physical Overview page.

3. In the navigation tree in the left pane, click **Licenses Management**.

   The **Licenses Listing** page opens. Notice the **Upload** and **Synchronize** operational commands at the top of the page.

View license information

You can view license information in two ways in ViPR SRM. One method displays licenses by host. The other one shows a centralized view of all licenses.

Procedure

1. Log in to ViPR SRM.

2. To view active licenses on a physical host, navigate to **Administration** › **Centralized Management** › **Physical Overview** › *host-name*.

3. Click the **Licenses** tab.
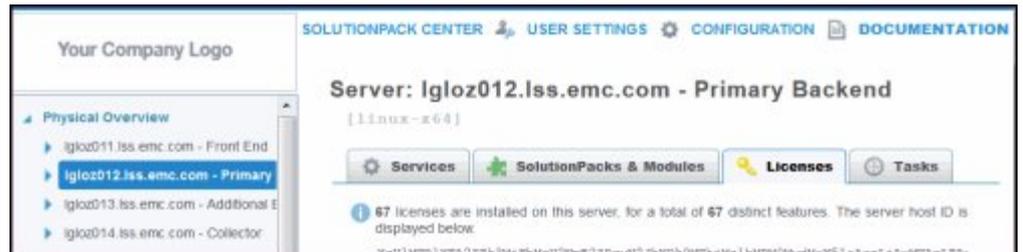
The host's Licenses tab opens, as shown in the following figure. The page shows the features with active licences on that host. It also indicates whether licenses are permanent or trial, the expiration date for trials, and additional license properties, if applicable.

4. To view a consolidated list of licenses for all hosts, and to perform license management operations, in the navigation tree in the left pane, click **Licenses Management**.

   The **Licenses Listing** page opens showing all licenses on all servers.
   The following figure shows this page. Notice the ELMS permanent license, showing all features included in the license and the license serial number. Also notice the **Upload** and **Synchronize** commands at the top of the page.

This table displays Information for ELMS licenses related to product name for the license, SWID, and serial numbers.

Upload a new license file

To add a new license to your system, such as a newly purchased SolutionPack or ReportPack license, you upload a new license file.

Before you begin

1. Purchase the required licenses.

2. Download the new license file to a local server, as directed by EMC during the purchase process.

When you upload a license file, the new file affects all servers capable of using the licenses.

Procedure

1. Log in to the Centralized Management UI in ViPR SRM using the following URL:

   ```
   http://frontend-hostname:58080/centralized-management
   ```

2. In the navigation pane, select **Licenses Management**.

3. Click **Upload** at the top of the page.

   The License Upload dialog appears.

4. Click **Browse** and locate the new license file that you downloaded.

5. Click **OK.**

   The system extracts the licenses and displays them in the table on the Licenses Listing pane.

6. When the **License Upload Complete** dialog appears, click **OK,** and then click **Continue**.

   The new license automatically affects all servers capable of using the license.

7. Delete the trial licenses that correspond to newly licensed features, if any.

   To delete a trial license, see .

Delete licenses

You can select and delete specific licenses or delete all licenses. A delete action affects all servers that use the license.

After you install a permanent license, delete the trial licenses that are covered by the permanent license.

Procedure

1. Log in to the Centralized Management UI in ViPR SRM using the following URL:

   ```
   http://frontend-hostname:58080/centralized-management
   ```

2. In the navigation pane, select **Licenses Management**.

3. In the **Licenses Listing** table, select one or more license check boxes.

4. Click **Delete**.

   The **Delete** command appears below the table. It is dimmed until you select at least one license.

   The system deletes the selected license from all available servers.

Synchronize licenses on multiple hosts

The **Synchronize** action ensures that all remote hosts have licenses based on those available on the Centralized Management host.

Certain situations might cause licenses to become out of sync. For example, if a remote host is unavailable when you perform an upload or a delete operation, those operations would not be propagated to the offline server. Another example is if you add a new server to your configuration, the new server would need licensing information.

Procedure

1. Log in to the Centralized Management UI in ViPR SRM using the following URL:

   ```
   http://frontend-hostname:58080/centralized-management
   ```

2. In the navigation pane, select **Licenses Management**.

3. Click **Synchronize** at the top of the page.

   The system synchronizes the licenses on all remote hosts.

Troubleshooting licensing

You can resolve common licensing problems.

Permanent license stops working after host reconfiguration

If you change the configuration of a host, for example, by adding interfaces, removing interfaces, or changing the operating system, your permanent license might stop working. If your license does not work, obtain a new host ID and request a new permanent license.

Before you begin

Ensure that you have a login with root, EMC M&R, or system administrator privileges to perform this task. The user apg is the account that the application uses instead of root.

Procedure

1. Log in to the operating system command line on the EMC M&R host server.

2. To obtain the new host ID, run one of the following operating system commands:

Operating system	Command
UNIX	/opt/APG/bin/manage-licenses.sh host-id
Windows	C:\Program Files\APG\bin\manage-licenses.cmd host-id

The command output is the new EMC M&R host ID.

3. Copy the host ID information to the clipboard or to a text file.

4. To obtain the new license, go to the EMC support site using the following URL:

   https://support.emc.com/servicecenter/createSR/

   The **Create a Service Request** page opens.

5. Submit a service request to EMC, asking for a new permanent license file for a new host. Paste the new host ID into the request.

6. When EMC sends you the new license file, follow the procedure in Upload a new license file on page 54.

Users are locked out of ViPR SRM

If the license for the core ViPR SRM features expires, the system locks users out of the UI.

To recover from this scenario:

1. Obtain a license file with permanent licenses. See License purchase on page 51.

2. Install the new license file from the command line. See Install license file from the command line on page 57.

3. Restart the Tomcat service. See Restart Tomcat service on page 57.

4. Log in to ViPR SRM and perform the following tasks:

   a. Reinstall the new license file from the Centralized Management UI.

b. Delete the expired trial licenses.

See .

Install license file from the command line

You can install a license file from the command line if you are locked out of the UI. Always use the UI unless you are locked out.

Before you begin

- Ensure that you have an OS account with root, `apg`, or system administrator privileges. The application uses the `apg` account, rather than root.

- Acquire a new license file from EMC and download it to a local server. To request a new license file, create a Service Request on EMC Online Support.

Procedure

1. Log in to the server where the ViPR SRM core software is installed.

2. Copy the new, valid license file to this same server. The file is a `.zip` file.

3. At the OS command line, navigate to the `bin` directory.

4. Install the license file using one of the following commands appropriate to your OS:

Operating System	Command
UNIX	`./manage-licenses.sh install download_path/license.zip`
Windows	`manage-licenses.cmd install download_path\license.zip`

Note

The command installs the license file on this server only.

Restart Tomcat service

If the Web Portal license expires, you might need to restart the Tomcat service.

Before you begin

1. Install the new license file using operating system commands.

2. Ensure that the library search path is correct on the server that is the host for the core software. This requirement applies to the `libstdc` package on a Solaris server and the `libaio` package on a LINUX server.

It is only necessary to restart the Tomcat service when the license for a web application, such as the Web Portal, expires.

Procedure

1. Log in to the server where the ViPR SRM core software is installed.

2. At the OS command line, navigate to the `bin` directory.

3. Run one of the following commands appropriate to the OS:

Operating System	Command
UNIX	./manage-modules.sh service restart tomcat
Windows	manage-modules.cmd service restart tomcat

The command output starts like this:

```
* Starting 'tomcat Default'... [ OK ]
```

Reinstall license file and delete trial licenses after lockout

After you install a permanent license file on the command line, you need to reinstall that file using the Centralized Management UI to make the license visible in the UI and available for distribution to other remote servers. You also need to delete the expired trial licenses.

Procedure

1. Open a browser and log in to the Centralized Management UI in ViPR SRM using the following URL:

   ```
   http://frontend-hostname:58080/centralized-management
   ```

2. In the navigation pane, select **Licenses Management**.
3. Click **Upload** at the top of the page.

   The License Upload dialog appears.
4. Click **Browse** and locate the new license file.
5. Click **OK**.

   The system extracts the licenses and displays them in the table on the Licenses Listing pane.
6. When the **License Upload Complete** dialog appears, click **OK**, and then click **Continue**.

   The new license automatically affects all servers capable of using the license.
7. In the License Listing table, select all expired trial licenses by clicking the appropriate check boxes.
8. Click **Delete**.

   The **Delete** command appears at the bottom of the page, below the table of licenses.

   The delete action automatically affects all available servers.

Module does not start or has no license

If a component reports that it has no license or does not start, verify the licenses on the physical host.

Procedure

1. Log in to the Centralized Management UI in ViPR SRM using the following URL:

   ```
   http://frontend-hostname:58080/centralized-management
   ```

2. Navigate to **Physical hosts** › *host-name* › **Licenses**.

   The page shows all licenses active on this local host.

3. Inspect the **Expiration** column for the termination date of each license.

ELMS license entitlements

This section describes the features associated with the core ViPR SRM license as well as the additional licenses that you can purchase.

The ELMS SRMSUITE_GENERAL feature bundles all of the basic features and SolutionPacks that you receive as part of any ViPR SRM purchase. This bundle enables most of the EMC M&R functionality. The first table below lists the features included in SRMSUITE_GENERAL.

When you purchase an add-on license, you receive additional ELMS features. The add-on licenses enable sets of features that ViPR SRM verifies during runtime. The second table below lists ELMS add-on license names and the features enabled by each one.

Table 3 Features in ELMS SRMSUITE_GENERAL

EMC M&R Features Included in SRMSUITE_GENERAL	ViPR SRM Version Added	EMC M&R Version Added
ReportPack for Fibre Channel Fabrics	3.0	6.3
ReportPack for Oracle	3.0	6.3
SolutionPack for Brocade FC Switch	3.0	6.3
SolutionPack for Cisco MDS Nexus	3.0	6.3
SolutionPack for Cisco UCS	3.0	6.3
SolutionPack for EMC AppSync	3.5.1	6.4u1
SolutionPack for EMC Data Protection Advisor	3.0	6.3
SolutionPack for EMC RecoverPoint	3.0	6.3
SolutionPack for EMC ViPR	3.0	6.3
SolutionPack for EMC VPLEX	3.0	6.3
SolutionPack for EMC Watch4net Health	3.0	6.3
SolutionPack for IBM LPAR	3.0.1	6.3u1
SolutionPack for IBM SVC V7000	3.0	6.3
SolutionPack for Microsoft Hyper-V	3.0	6.3
SolutionPack for Microsoft SQL Server	3.5	6.4
SolutionPack for Oracle Database	3.0	6.3
SolutionPack for Oracle MySQL Database	3.5.1	6.4u1
SolutionPack for Physical Hosts	3.0	6.3
SolutionPack for Storage Compliance	3.0	6.3
SolutionPack for VMware vCenter	3.0	6.3
APG Self-Monitoring Collector	3.0	6.3
Alerting Engine	3.0	6.3

Table 3 Features in ELMS SRMSUITE_GENERAL (continued)

EMC M&R Features Included in SRMSUITE_GENERAL	ViPR SRM Version Added	EMC M&R Version Added
Backend Adapter Properties: limit.device.value=100000 limit.device.property=device limit.device.ratio=4000000 limit.device.tolerance=10	3.0	6.3
DatabaseAccessor Web Service	3.0	6.3
Device Discovery	3.0	6.3
Event Adapter	3.0	6.3
Event Log Processor	3.0	6.3
Formula Editor	3.0	6.3
Formula Engine	3.0	6.3
Generic Text Collector	3.0	6.3
Geomap Integration Module	3.0	6.3
iPhone Integration Module	3.0	6.3
Mib Browser	3.0	6.3
Remote Shell Collector (SSH)	3.0	6.3
Remote Shell Collector (Windows)	3.0	6.3
Report Refiner	3.6.3	6.5u3
ReportManager Web Service	3.0	6.3
SNMP Poller	3.0	6.3
SQL Collector	3.0	6.3
SSH Telnet Collector	3.0	6.3
Trap Receiver	3.0	6.3
VMWare Listener	3.0	6.3
VMware Collector	3.0	6.3
WMI Collector	3.0	6.3
Web Portal	3.0	6.3
XML Collector	3.0	6.3

Table 4 Features in ELMS Add-On Licenses

ELMS Feature Name	Enabled EMC M&R Features	ViPR SRM Version Added	EMC M&R Version Added
SRMSUITE_3PAR_TB	SolutionPack for HP 3PAR StoreServ	3.0	6.3
SRMSUITE_CENTERA	SolutionPack for EMC Centera	3.0	6.3
SRMSUITE_DATADOM	SolutionPack for EMC Data Domain	3.0	6.3
SRMSUITE_HDS_TB	SolutionPack for Hitachi Device Manager	3.0	6.3
SRMSUITE_HPEVA_TB	Report Pack for HP EVA; SolutionPack for HP EVA	3.0	6.3
SRMSUITE_HPXP_P9500_TB	SolutionPack for HP StorageWorks P9000	3.0	6.3
SRMSUITE_IBM_DS_TB	Report Pack for IBM DS Series; SolutionPack for IBM DS	3.0	6.3
SRMSUITE_ISILON	SolutionPack for EMC Isilon	3.0	6.3
SRMSUITE_NTAP_TB	ReportPack for NetApp Filers; SolutionPack for NetApp Filer	3.0	6.3
SRMSUITE_VBLOCK	SolutionPack for Converged Infrastructure	3.0	6.3
SRMSUITE_VMAX_ENABLER	ReportPack for Symmetrix; SolutionPack for EMC VMAX	3.0	6.3
SRMSUITE_VNX	ReportPack for CLARiiON; SolutionPack for EMC VNX	3.0	6.3
SRMSUITE_XIV_TB	SolutionPack for IBM XIV	3.0	6.3
SRMSUITE_XTREMIO	SolutionPack for EMC XtremIO	3.0	6.3
SRMSUITE_VMAXCE	SolutionPack for EMC VMAX Cloud Edition	3.0	6.3
SRMSUITE_ATMOS_TB	SolutionPack for EMC Atmos	3.0.1	6.3u1
VIPRSRM_SCALEIO_TB	SolutionPack for EMC ScaleIO	3.5.1	6.4u1
VIPRSRM_ECS_TB	ECS Add-on for EMC ViPR SolutionPack	3.5.1	6.4u1

ViPR SRM ELA License

Starting with EMC M&R 6.4u1, a ViPR SRM ELA license is available under the ELMS feature name ViPRSRM_ELA. This license grants all of the functionality and SolutionPacks for ViPR SRM. It is equivalent to a license for SRMSUITE_GENERAL plus all of the available ELMS features listed in the previous table.

Note

The Backend Adapter for this license allows for 1 million devices and 4 million metrics per device.

Licensing

CHAPTER 6

Uninstallation

This chapter includes the following topics:

Overview

You can uninstall a SolutionPack and uninstall EMC M&R platform from a UNIX or Windows server.

Stop the EMC M&R platform services before uninstalling EMC M&R platform.

Stopping EMC M&R platform services on a UNIX server

Use the `manage-modules.sh service stop` command to stop a specific EMC M&R platform service or to stop all EMC M&R platform services on a UNIX server.

Before you begin

Make sure you have logged in with root or APG privileges.

Note

The list of services varies depending upon which type of installation was performed, for example, vApp, collector, backend, frontend, and so forth.

Procedure

- Type **`manage-modules.sh service stop <service_name>`** from the `bin` directory of the installation to stop a specific EMC M&R platform service.

  This example shows how to stop all EMC M&R platform services:

  ```
  ./manage-modules.sh service stop all
  ```

Uninstalling the product from a UNIX server

Before you begin

Make sure you have a login with root privileges.

Procedure

1. Type **`rm -rf /opt/APG`** to remove the installation directory.
2. Reboot the server.

Stopping EMC M&R platform services on a Windows server

Use this procedure to stop EMC M&R platform services from the Windows desktop.

Before you begin

Make sure you have logged in with system administrator credentials to manage services.

Note

The list of services varies depending upon which type of installation was performed, for example, vApp, collector, backend, frontend, and so forth.

Procedure

1. Type **`manage-modules.cmd service stop <service_name>`** from the `bin` directory of the installation to stop a specific EMC M&R platform service.

This example shows how to stop all EMC M&R platform services:

```
./manage-modules.cmd service stop all
```

Uninstalling the product from a Windows server

Before you begin

Make sure you have logged in with system administrator credentials.

Procedure

1. Use the **Windows Control Panel** to uninstall the product.

    a. Click **Start** › **Control Panel** › **Programs**.

    b. Click **Uninstall a program**.

    c. Select the **Watch4net Solutions APG** and click **Uninstall**.

2. Reboot the server.

Uninstalling a SolutionPack

If you no longer want to view the reports of a certain SolutionPack, you can uninstall that SolutionPack from the server.

Procedure

1. Log in with administrator credentials for EMC M&R platform and select **Administration**.

2. Select **Centralized Management** in the Administration tree.

3. Select **SolutionPacks** in the tree.

4. Select the SolutionPack that you want to uninstall in the **Installed SolutionPacks** screen.

5. In the **Properties** area, click **Trashcan** icon for each instance of the SolutionPackBlock and click **Remove**.

Uninstallation

APPENDIX A

Telnet and Socket Interface Ports

This appendix includes the following topics:

Telnet and socket interface ports for each backend

The telnet and socket interface for each backend must be different on that backend host. These ports are open in the Linux firewall setting by default.

Backend Host	Backend	socket interface	telnet interface
Primary Backend (PBE)	DB	2000	2001
Additional Backend #1 (ABE)	DB1	2100	2101
	DB2	2200	2201
	DB3	2300	2301
	DB4	2400	2401
Additional Backend #2 (ABE)	DB-*hostname*-1	2100	2101
	DB-*hostname*-2	2200	2201
	DB-*hostname*-3	2300	2301
	DB-*hostname*-4	2400	2401
Additional Backend #3 (ABE)	DB-*hostname*-1	2100	2101
	DB-*hostname*-2	2200	2201
	DB-*hostname*-3	2300	2301
	DB-*hostname*-4	2400	2401
Additional Backend #4 (ABE)	DB-*hostname*-1	2100	2101
	DB-*hostname*-2	2200	2201
	DB-*hostname*-3	2300	2301
	DB-*hostname*-4	2400	2401
Additional Backend #5 (ABE)	DB-*hostname*-1	2100	2101
	DB-*hostname*-2	2200	2201
	DB-*hostname*-3	2300	2301
	DB-*hostname*-4	2400	2401
Additional Backend #6 (ABE)	DB-*hostname*-1	2100	2101
	DB-*hostname*-2	2200	2201
	DB-*hostname*-3	2300	2301
	DB-*hostname*-4	2400	2401

APPENDIX B

SolutionPack Reconfiguration Fields

This appendix includes the following topics:

SolutionPack Reconfiguration Fields

You can change the settings for the SolutionPack from the SolutionPack Reconfiguration page.

Table 5 SolutionPack Reconfiguration Fields

Field	Description
Socket Collector port	On this TCP port on the Primary Backend, the Arbiter is accepting the remote connections from all LBCs.
APG Backend hostname or IP address	The hostname of the server where the apg database and its backend service are running. In this deployment, the possible options are backend and backend2. Do not use "localhost" for the default apg on the primary backend.
APG Backend data port	Each apg has a backend and each backend has its own TCP port to receive raw data. The port must be unique only inside the server. Refer to Configuring the Additional Backend on page 31. In this installation, the ports are 2000, 2100, 2200, 2300 and 2400.
Web-Service Gateway	Each APG server has a Web-Service Gateway. This hostname must point to the APG server with the backend service.
Backend Web-Service Instance	The backend instance name. In this deployment, the possible values are: • Default (the default backend instance name from primary backend) • apg1 • apg2 • apg3 • apg4
Backend database type	MySQL by default.
Backend database hostname or IP address	The hostname where the MySQL database is running. By default, it is same as the APG Backend hostname.
Backend database port number	The port on which MySQL is accepting remote TCP connections. By default, it is 53306 .
Backend Database name	The database name used in MySQL. For example, apg, apg1, apg2.
Backend database username	The user configured in MySQL. The default is "apg"
Backend database password	The default password for the MySQL user is "watch4net"

APPENDIX C

Unattended Installation

This appendix includes the following topics:

Unattended installation

EMC M&R 6.7 and higher supports fully unattended installations, which are particularly useful for installing the software on remote systems via scripts. This appendix describes the installation of the platform software, but it does not include the installation and configuration of modules or SolutionPacks.

Unattended installation arguments for Linux

- `--silent`
  Runs the setup script in unattended mode. No questions are asked, and the default settings are used.

- `--accept-eula`
  Accepts the EULA. By providing this switch, you are confirming that you have read and accepted the EULA.

- `--install-dir=`*‹path to installation›*
  Overrides the default installation location. The default is typically `/opt/APG`.

- `--user=`*username*
  Overrides the default user for installation of the servers. The default is typically apg.

- `--script-directory=`*initd_directory*
  Overrides the default script directory. The default is `/etc/init.d`.

- `--runlevel-directory=`*rcd_directory*
  Overrides the default runlevels directory (containing `rc[0-6].d/`).

  The default is `/etc`.

- `--install-type=`*installation_type*
  Overrides the default installation type. The available options are default, minimal, collector, backend, and frontend. The command only considers the first letter, so `--install-type=C` is equivalent to `--install-type=collector`. The value of the parameter is not case sensitive.

Example 1 To override the default installation and set the installation type to collector:

```
[root@server ~]# ./linux_setup.sh -- --install-type=collector
```

Example 2 To run a fully unattended installation and install as a collector in an alternate directory:

```
[root@server ~]# ./linux_setup.sh -- --accept-eula --silent --
install-type=collector --install-dir=/opt/SRM
```

Unattended installation arguments for Windows

- `/S`
  Runs the setup script in unattended mode. No questions are asked, and the default settings are used. This must be the first argument.

- `ACCEPTEULA=`*Yes*

Accepts the EULA. By providing this switch, you are confirming that you have read and accepted the EULA. The installer will refuse to run in unattended mode if you have not accepted the EULA.

- `INSTALL-TYPE=`*installation_type*
  Overrides the default installation type. The available options are: default, minimal, collector, backend, and frontend. The command only considers the first letter, so `INSTALL-TYPE=C` is equivalent to `INSTALL-TYPE=collector`. The value of the parameter is not case sensitive.

- `/D`
  Sets the default installation directory. This must be the last parameter. It cannot contain any quotes (even if the path contains spaces), and only absolute paths are supported.

Example 3 To run a fully unattended installation and install as a collector in an alternate directory:

```
C:\Users\user1> windows_setup.exe /S /D=C:\SRM /
ACCEPTEULA=Yes /INSTALL-TYPE=collector
```