Deploying ScaleIO® Node v1.32 on VMware® Servers Quick Start Guide

EMC² ScaleIO

BEFORE YOU BEGIN

This document describes the basic steps required to deploy ScaleIO on ESXi servers. For full information, see the *EMC ScaleIO Installation Guide*.

ScaleIO installation enables unlimited use of the product, in **non-production environments**. To obtain a license for production use, and to receive technical support, open a service ticket with EMC Online Support at https://support.emc.com.

Before Deploying ScaleIO:

- Read this document in its entirety.
- Ensure that your environment is prepared, as described in Step I of this document.

ScaleIO Deployment Steps

Step 1—Prepare the environment

Step 2—Register the ScaleIO Plug-in

Step 3—Upload the OVA template to a vCenter
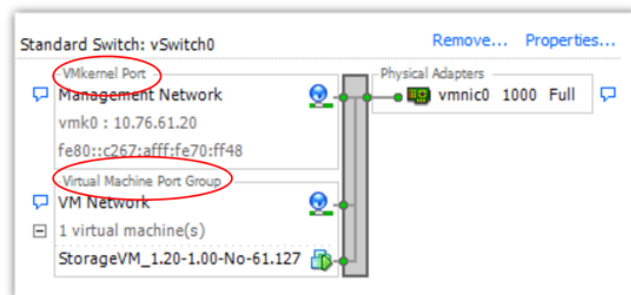
Step 4—Deploy ScaleIO

① Prepare the Environment

Ensure that your system meets the following requirements:

- 3 physical ESXi 5.5 or 6.0 (installed on SATADOM), with:
  - 2 CPUs, and 1.5 GB available DRAM
  - STORCLI enabled (see box on this page)
- 1 GB network, with connectivity to all nodes that will be used by the system.
- A minimum of 3 devices to add to SDS, that all meet the following prerequisites:
  - A minimum of 100 GB available storage capacity.
  - The devices must be free of partitions.
  - If a device has a VMFS volume on it, you can use a VMDK instead of a raw device, with a small degradation. *Before adding the device*, you must use the plug-in **Advanced settings** option to enable VMDK creation.
- All ESX hosts selected to have either an MDM, Tie-Breaker, or SDS component installed on them, must have a defined local datastore, with a minimum of 10 GB free space (to be used for the SVM). If the ESX is only being used as an SDC, there is no need for this datastore.
- The **management network** must have the following items configured:
  - VMKernel Port (necessary only if using a single network)
  - Virtual Machine Port Group (the name must be identical on all of the ESX hosts)

- When using distributed switches, the distributed switch must have the following items configured:
  - VMKernel port (necessary only if using a single network) on regular vswitch (required
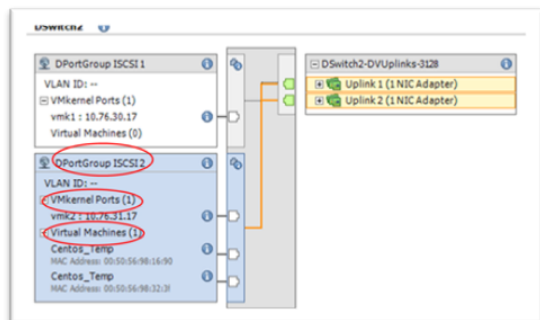
only for uploading the SVM OVA using the registration script and can be created without any physical interface)
  - dvPortGroup (distributed switch port group) for virtual machines

- The host from which you run the PowerShell (.ps1) script must meet the following prerequisites:
  - Runs on supported Windows OS
  - PowerCLI and Java are installed
  - Incoming and outgoing communication with the vCenter
- The vSphere web client (Virgo) server must have network connectivity to the host on which the PowerShell script will be used.

Note: The EMC-supplied hardware configurations satisfy all of the hardware requirements.

Enabling StorCLI on ESX:

1. Copy the installation file, **vmware-esx-storcli-1.15.05.vib**, to the **/tmp** directory. Use this VIB version only.
2. From the ESX console, or via SSH, run **esxcli software vib install -f -v /tmp/vmware-esx-storcli-1.15.05.vib**
3. Verify your OS version by running **esxcli system version get**
4. If the release build is higher than 2068190, perform the following (otherwise, skip to step 5):
   a. Download the following driver: https://my.vmware.com/web/vmware/details?downloadGroup=DT-ESXI55-LSI-SCSI-MEGARAID-SAS-66081100-1OEM&productId=353
   b. Unzip the file, extract the VIB, and copy it to /tmp.
   c. From the ESX console or via SSH, install the driver: **esxcli software vib install -f -v /tmp/scsi-megaraid-sas-6.608.11.00-1OEM.550.0.0.1331820.x86_64.vib**
5. Check if **lsi_mr3** module is loaded, by running **esxcfg-module -l | grep lsi**
6. Disable the lsi_mr3 module, by running **esxcfg-module -d lsi_mr3**
7. Restart the ESX server.
8. Verify that the lsi_mr3 module is disabled: **esxcfg-module -l | grep lsi** Expected output: **lsi_mr3 Not Loaded**

You can run StorCLI commands, from the ESX console, or via SSH, in the following format: **/opt/lsi/storcli storcli** *command*

② Register the ScaleIO Plug-in

1. From the EMC Online Support site (https://support.emc.com), download and extract the **ScaleIO Complete VMware Software Download** for this version.

   a. From the extracted files, copy the following files to your designated host.

   - **ScaleIOVM_1.32.xxx.x.ova**

   - **EMC-ScaleIO-vSphere-plugin-installer-1.32-xxx.x.zip**

     Extract the contents of this zip file.

2. With PowerCLI for VMware, set to Run *as administrator*, run the following script: **ScaleIOPluginSetup-1.32-xxx.x.ps1**

   a. Enter vCenter name or IP address, user name, and password.

   b. For **Choose Mode**, choose option **1, Register**

   ```
   Choose mode:
   1 - Register ScaleIO plug-in
   2 - Unregister ScaleIO plug-in
   3 - Create SVM template
   4 - Exit the script
   ```

   ScaleIO plug-in.

   c. Read the upgrade notice, and enter **y** to continue.

   d. For registration, choose either **Standard** (simplified, using embedded Tomcat), or **Advanced** (to use an external web server or previously installed ScaleIO gateway).

   > To use the **Advanced** options, refer to the installation guide.

   ```
   Do you wish to continue? Y / N: y
   Do you want to run the Standard or Advanced registration? [s|a]: s
   ```

   e. Accept the thumbprint (if required).

3. Load the plug-in by logging out, and then logging back in to the vSphere web client.

4. Return to the PowerCLI window, and press ‹Enter› to return to the script menu and complete the plug-in installation.

5. Go to the **Home** tab and verify that the ScaleIO icon is visible in the **Inventories** section.

If the ScaleIO icon is missing, the vSphere web client server failed to register the plug-in, due to one of the following reasons:

- Connectivity problem between the vSphere web client server and the web server storing the plug-in (for example, network / firewall etc.)

Resolution: Verify that there is communication between the vSphere web client server and the web server storing the plug-in

- URL problem when using an external web server

Resolution: Verify that the URL is https:// and is pointing to the correct web server IP address (ScaleIO Gateway)

③ Upload the OVA Template to a vCenter

1. Return to the PowerCLI window, and from the script menu, select the option **3, Create SVM template**.

2. Enter the following parameters:
   a. Data center name
   b. Path to the OVA, including the OVA file name
   c. Datastore names

> **Tip:** For faster, parallel, deployment in large-scale environments, you can use the OVA to create SVM templates on as many as eight datastores.
>
> To do so, enter the datastore names, and when done, leave the next line blank, and press ‹Enter›.

3. The upload procedure may take several minutes. When complete, a message similar to the following will appear for each template: **The template EMC ScaleIO SVM Template (v1.32.xxx.x) was successfully created**

4. When the process is complete, enter **4** to exit the script.

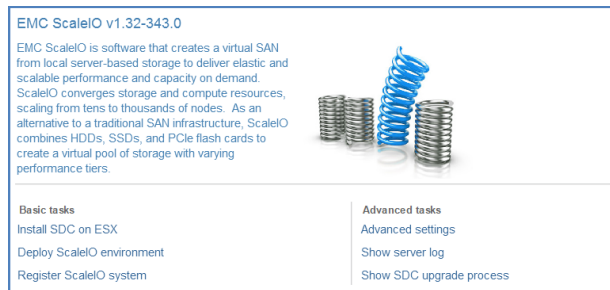> The following example shows how to enter two datastores:
>
> `datastores[0]:` **datastore1**
> `datastores[1]:` **datastore1 (1)**
> `datastores[2]:`
>
> (For best results, enter a local (not shared) datastore for each ESX server.)

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④ Deploy ScaleIO

This step requires a restart of ESX hosts.

1. Log in to the vSphere web client, and perform the following:

   a. Open the **ScaleIO screen** by clicking the SIO icon.

   > **EMC ScaleIO v1.32-343.0**
   >
   > EMC ScaleIO is software that creates a virtual SAN from local server-based storage to deliver elastic and scalable performance and capacity on demand. ScaleIO converges storage and compute resources, scaling from tens to thousands of nodes. As an alternative to a traditional SAN infrastructure, ScaleIO combines HDDs, SSDs, and PCIe flash cards to create a virtual pool of storage with varying performance tiers.
   >
   > **Basic tasks**   **Advanced tasks**
   > Install SDC on ESX   Advanced settings
   > Deploy ScaleIO environment   Show server log
   > Register ScaleIO system   Show SDC upgrade process

   b. From the ScaleIO screen, click **Install SDC on ESX**. The **Install SDC on ESX** screen appears, showing all the ESX hosts on all the connected vCenters.

   c. Select the ESX hosts that are expected to be part of this ScaleIO system, and enter the root password for each host.

   > It is highly recommended to select **all** ESX hosts that might be included in a ScaleIO system, even if only in the future.

   d. Click **Install**. The status appears in the dialog.

   e. When finished, click **Finish.**

   f. You **must** restart the ESX hosts before proceeding.

2. From the **EMC ScaleIO** screen, click **Deploy ScaleIO Environment,** and use the deployment wizard to deploy ScaleIO in the VMware environment. For a full description, see the *EMC ScaleIO Installation Guide*.

3. After the deployment wizard is complete, to enable *autostart*, perform the following (not necessary if the VMware HA feature is enabled):

   a. Click the ESX **Configuration** tab.

   b. From the **Software** section, click **Virtual Machine Startup/Shutdown**.

   c. Click **Properties**...and in the dialog box, select **Allow virtual machines to start and stop automatically with the system**.

   d. Click **OK.**

   e. Repeat this process for all ESX hosts.

Run the GUI Management Software

You can install the ScaleIO GUI management software on a Windows or Linux server that meets the following requirements:

- Minimum screen resolution of 1366 x 768
- Java 1.7 (1.6 for Linux) or higher

1. To run on a Windows server, perform the following:
   a. Run the following file:
      EMC-ScaleIO-gui-1.32-xxx.x.msi
   b. Start the GUI (**Start › Programs› EMC ScaleIO GUI**)

2. Log in, by entering the following:
   – MDM management IP address
   – User name (default: *admin*)
   – Password (as defined during installation)

3. Click **Connect.**

> **EMC ScaleIO**
>
> **EMC² ScaleiO**
>
> To manage the ScaleIO cluster, enter the IP address or host name of the MDM node.
>
> IP address / Name:
> User name:
> Password:
>
> Connect   Cancel
>
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