Deploy or upgrade VSC, VASA Provider, and SRA

VSC, VASA Provider, and SRA 9.7

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Deploy or upgrade VSC, VASA Provider, and SRA

You must download and deploy the virtual appliance for VSC, VASA Provider, and SRA in your VMware vSphere environment, and then configure the required applications based on the tasks you want to perform using VSC, VASA Provider, and SRAVSC, VASA Provider, and SRA.

Related information

Enable VASA Provider for configuring virtual datastores

How to download the virtual appliance for VSC, VASA Provider, and SRA

You can download the `.ova` file for the virtual appliance for Virtual Storage Console, VASA Provider, and Storage Replication Adapter from the .

The `.ova` file includes VSC, VASA Provider, and SRA. When the deployment is complete, all the three products are installed in your environment. By default, VSC starts working as soon as you decide on the subsequent deployment model and choose whether to enable VASA Provider and SRA based on your requirements.

You can download the virtual appliance for VSC, VASA Provider, and SRA from the NetApp Support Site by using the software download page.

If you want to enable SRA in your deployment of the virtual appliance for VSC, VASA Provider, and SRA, then you must have installed the SRA plug-in on the Site Recovery Manager (SRM) server. You can download the installation file for the SRA plug-in from the **Storage Replication Adapter for ONTAP** menu in the **Software Downloads** section.

Deploy the virtual appliance for VSC, VASA Provider, and SRA

You should deploy the virtual appliance for Virtual Storage Console (VSC), VASA Provider, and Storage Replication Adapter (SRA) in your environment, and specify the required parameters, to be able to use the appliance.

Before you begin

- You must be running a supported release of vCenter Server.

  The virtual appliance for VSC, VASA Provider, and SRA can be registered either with a Windows deployment of vCenter Server or a VMware vCenter Server Virtual Appliance (vCSA) deployment.

  Interoperability Matrix Tool: VSC 9.7

- You must have configured and set up your vCenter Server environment.
- You must have set up an ESXi host for your virtual machine.

- You must have downloaded the `.ova` file.
- You must have the administrator login credentials for your vCenter Server instance.
- You must have logged out of and closed all of the browser sessions of vSphere Client, and deleted the browser cache to avoid any browser cache issue during the deployment of the virtual appliance for VSC, VASA Provider, and SRA.

  Clean the vSphere cached downloaded plug-in packages

- You must have enabled Internet Control Message Protocol (ICMP).

  If ICMP is disabled, then the initial configuration of the virtual appliance for VSC, VASA Provider, and SRA fails, and VSC cannot start the VSC and VASA Provider services after deployment. You must manually enable the VSC and VASA Provider services after deployment.

About this task

If you are deploying a fresh installation of the virtual appliance for VSC, VASA Provider, and SRA, then VASA Provider is enabled by default. But in case of an upgrade from an earlier release of the virtual appliance, the state of VASA Provider is retained and you might need to enable VASA Provider manually.

Enable VASA Provider for configuring virtual datastores

Steps

1. Log in to the vSphere Client.
2. Select **Home › Host & Clusters**.
3. Right-click the required datacenter, and then click **Deploy OVA template**.
4. Select the applicable method to provide the deployment file for VSC, VASA Provider, and SRA, and then click **Next**.

Location	Action
URL	Provide the URL for the `.ova` file for the virtual appliance for VSC, VASA Provider, and SRA.
Folder	Select the `.ova` file for the virtual appliance for VSC, VASA Provider, and SRA from the saved location.

5. Enter the details to customize the deployment wizard.

   See Deployment customization considerations for complete details.

6. Review the configuration data, and then click **Next** to finish deployment.

   As you wait for deployment to finish, you can view the progress of the deployment from the **Tasks** tab.

7. Power on the virtual appliance virtual machine, and then open a console of the virtual machine running the virtual appliance.
8. Verify that VSC, VASA Provider, and SRA services are running after the deployment is completed.
9. If the virtual appliance for VSC, VASA Provider, and SRA is not registered with any vCenter Server, use

`https://appliance_ip:8143/Register.html` to register the VSC instance.

10. Log out and re-log in to the vSphere Client to view the deployed virtual appliance for VSC, VASA Provider, and SRA.

    It might take a few minutes for the plug-in to be updated in the vSphere Client.

    If you cannot view the plug-in even after logging in, you must clean the vSphere Client cache. Clean the vSphere cached downloaded plug-in packages

After you finish

If you are using ONTAP 9.6 or earlier, then to view the vVol dashboard, you must download and install . But for ONTAP 9.7 you do not require to be registered with VASA Provider.

Register with the virtual appliance for VSC, VASA Provider, and SRA

Deployment customization considerations

You must consider few limitations while customizing the deployment of virtual appliance for VSC, VASA Provider, and SRA.

Appliance administrator user password

You must not use any spaces in the administrator password.

Appliance maintenance console credentials

You must access the maintenance console by using the “maint” user name. You can set the password for the “maint” user during deployment. You can use the **Application Configuration** menu of the maintenance console of your virtual appliance for VSC, VASA Provider, and SRA to change the password.

vCenter Server administrator credentials

You can set the administrator credentials for the vCenter Server while deploying the virtual appliance for VSC, VASA Provider, and SRA.

If the password for the vCenter Server changes, then you can update the password for the administrator by using the following URL: *`https`*`://<IP>:8143/Register.html` where the IP address is of the virtual appliance for VSC, VASA Provider, and SRA that you provide during deployment.

vCenter Server IP address

- You should provide the IP address (IPv4 or IPv6) of the vCenter Server instance to which you want to register the virtual appliance for VSC, VASA Provider, and SRA.

  The type of VSC and VASA certificates generated depends on the IP address (IPv4 or IPv6) that you have provided during deployment. While deploying the virtual appliance for VSC, VASA Provider, and SRA, if you have not entered any static IP details and your DHCP then the network provides both IPv4 and IPv6 addresses.

- The virtual appliance for VSC, VASA Provider, and SRA IP address used to register with vCenter Server depends on the type ofvCenter Server IP address (IPv4 or IPv6) entered in the deployment wizard.

  Both the VSC and VASA certificates will be generated using the same type of IP address used during vCenter Server registration.

IPv6 is supported only with vCenter Server 6.7 and later.

Appliance network properties

If you are not using DHCP, specify a valid DNS hostname (unqualified) as well as the static IP address for the virtual appliance for VSC, VASA Provider, and SRA and the other network parameters. All of these parameters are required for proper installation and operation.

Enable VASA Provider for configuring virtual datastores

The virtual appliance for Virtual Storage Console (VSC), VASA Provider, and Storage Replication Adapter (SRA) has the VASA Provider capability enabled by default. You can configure VMware Virtual Volumes (vVols) datastores with required storage capability profiles for each vVols datastore.

Before you begin

- You must have set up your vCenter Server instance and configured ESXi.
- You must have deployed the virtual appliance for VSC, VASA Provider, and SRA.

About this task

If the VASA Provider capability is disabled before upgrading to the 9.7.1 release of the virtual appliance for Virtual Storage Console (VSC), VASA Provider, and Storage Replication Adapter (SRA), the VASA Provider capability remains disabled after the upgrade. This release allows you to enable vVols replication feature for vVols datastores.

Steps

1. Log in to the web user interface of VMware vSphere.
2. From the vSphere Client, click **Menu › Virtual Storage Console**.
3. Click **Settings**.
4. Click **Manage Capabilities** in the **Administrative Settings** tab.
5. In the **Manage Capabilities** dialog box, select the VASA Provider extension to enable.
6. If you want to use replication capability for vVols datastores, then use the **Enable vVols replication** toggle button.
7. Enter the IP address of the virtual appliance for VSC, VASA Provider, and SRA and the administrator password, and then click **Apply**.

After you finish

If you are using ONTAP 9.6 or earlier clusters, then you must register with VASA Provider to get details of vVols datastores and virtual machines used in the SAN vVols VM and SAN vVols datastore reports. But if you are using ONTAP 9.7 or later, then you do not need to register with VASA Provider.

Register with the virtual appliance for VSC, VASA Provider, and SRA

If you are using ONTAP 9.6 or earlier, then the vVol dashboard can display the details of VMware Virtual Volumes (vVols) datastores and virtual machines only if you have registered for VASA Provider to obtain data for the vVols VM and datastore reports.

Before you begin

You must have downloaded 2.1 or later from .

> The vVol dashboard displays performance metrics only when the SAN vVols datastores and virtual machines are configured using ONTAP 9.3 or later.

Steps

1. From the Virtual Storage Console (VSC) **Home** page, click **Settings**.
2. Click **Manage Extension** in the **Administrative Settings** tab.
3. Use the **Register OnCommand API Services** slider to enable .
4. Enter the IP address, service port, and credentials for .

   You can also use the **Manage VASA Provider Extensions** dialog box for the following modifications:

   - To update registration when there is any change to the credentials.
   - To unregister when you no longer require the vVol dashboard.

     You must clear the **Register OnCommand API Services** checkbox to remove the registration for VASA Provider.

5. Click **Apply**.

   The vVol dashboard displays the metrics for ONTAP 9.6 or earlier SAN vVol datastores only after the registration of is complete.

Related information

NetApp Support

Install the NFS VAAI plug-in

You can install the NFS Plug-in for VMware vStorage APIs for Array Integration (VAAI) using the GUI of the virtual appliance for Virtual Storage Console (VSC), VASA Provider, and Storage Replication Adapter (SRA).

Before you begin

- You must have downloaded the installation package for the NFS Plug-in for VAAI (`.vib`) from .

  NetApp Support

- You must have installed ESXi host 6.5 or later and ONTAP 9.1 or later.
- You must have powered on the ESXi host and mounted an NFS datastore.

- You must have set the values of the `DataMover.HardwareAcceleratedMove`, `DataMover.HardwareAcceleratedInit`, and `VMFS3.HardwareAcceleratedLocking` host settings to “1”.

  These values are set automatically on the ESXi host when the **Recommended Settings** dialog box is updated.

- You must have enabled the vstorage option on the by using the `vserver nfs modify -vserver vserver_name -vstorage enabled` command.

Steps

1. Rename the `.vib` file that you downloaded from to `NetAppNasPlugin.vib` to match the predefined name that VSC uses.
2. Click **Settings** in the VSC home page.
3. Click **NFS VAAI Tools** tab.
4. Click **Change** in the **Existing version** section.
5. Browse and select the renamed `.vib` file, and then click **Upload** to upload the file to the virtual appliance.
6. In the **Install on ESXi Hosts** section, select the ESXi host on which you want to install the NFS VAAI plug-in, and then click **Install**.

   You should follow the on-screen instructions to complete the installation. You can monitor the installation progress in the Tasks section of vSphere Web Client.

7. Reboot the ESXi host after the installation finishes.

   When you reboot the ESXi host, VSC automatically detects the NFS VAAI plug-in. You do not have to perform additional steps to enable the plug-in.

Enable Storage Replication Adapter

The virtual appliance for Virtual Storage Console (VSC), VASA Provider, and Storage Replication Adapter (SRA) provides the option to enable the SRA capability to be used with VSC to configure disaster recovery.

Before you begin

- You must have set up your vCenter Server instance and configured ESXi.
- You must have deployed the virtual appliance for VSC, VASA Provider, and SRA.
- You must have downloaded the `.msi` file for the SRA plug-in, or the `.tar.gz` file for SRM appliance only if you want to configure the Site Recovery Manager (SRM) disaster recovery solution.

  Site Recovery Manager Installation and Configuration Site Recovery Manager 8.2 has more information.

About this task

The flexibility to enable VASA Provider and SRA capabilities enables you to execute only the workflows that you require for your enterprise.

Steps

1. Log in to the web user interface of VMware vSphere.

2. From the vSphere Client, click **Menu › Virtual Storage Console**.
3. Click **Settings**.
4. Click **Manage Capabilities** in the **Administrative Settings** tab.
5. In the **Manage Capabilities** dialog box, select the SRA extension want to enable.
6. Enter the IP address of the virtual appliance for VSC, VASA Provider, and SRA and the administrator password, and then click **Apply**.
7. You can use one of the following methods to deploy SRA:

Option	Description
For Windows SRM	a. Double-click the downloaded `.msi` installer for the SRA plug-in. b. Follow the on-screen instructions. c. Enter the IP address and password of your deployed virtual appliance.
For SRM appliance	a. Access the SRM appliance page, and then go to **Storage Replication Adapters** page of SRM appliance. b. Click **New Adapter**. c. Upload the .tar.gz installer for the SRA plug-in to SRM. d. Rescan the adapters to verify that the details are updated in the SRM **Storage Replication Adapters** page.

You must log out of the vSphere Client, and then log in again to verify that your selected extension is available for configuration.

Related information

Configure Storage Replication Adapter for disaster recovery

Configure SRA on the SRM Appliance

After you have deployed the SRM Appliance, you should configure SRA on the SRM Appliance. The successful configuration of SRA enables SRM Appliance to communicate with SRA for disaster recovery management. You should store the virtual appliance for VSC, VASA Provider, and SRA credentials (IP address and administrator password) in the SRM Appliance to enable communication between SRM Appliance and SRA.

Before you begin

You should uploaded the `tar.gz` file to SRM Appliance.

About this task

The configuration of SRA on SRM Appliance stores the SRA credentials in the SRM Appliance.

Steps

1. Log in using administrator account to the SRM Appliance using putty.
2. Switch to the root user using the command: `su root`
3. At the log location enter the command to get the docker ID used by SRA `docker ps -l`
4. To login to the container ID, enter command `docker exec -it -u srm <container id> sh`
5. Configure SRM with the virtual appliance for VSC, VASA Provider, and SRA IP address and password using the command: `perl command.pl -I <va-IP> administrator <va-password>`

   A success message confirming that the storage credentials are stored is displayed. SRA can communicate with SRA server using the provided IP address, port and credentials.

Update Storage Replication Adapter (SRA) credentials

For SRM to communicate with SRA, you should update SRA credentials on the SRM server if you have modified the credentials.

Before you begin

You should have executed the steps mentioned in the topic "Configuring SRA on SRM appliance".

Configure SRA on the SRM Appliance

Steps

1. Delete the contents of the `/srm/sra/conf`directory using:
   a. cd /srm/sra/conf
   b. rm -rf *
2. Execute the perl command to configure SRA with the new credentials:
   a. cd /srm/sra/
   b. perl command.pl -I <va-IP> administrator <va-password>

Migration of Windows SRM to SRM Appliance

If you are using Windows based Site Recovery Manager(SRM) for disaster recovery and you want to use the SRM Appliance for the same setup, then you should migrate your Windows disaster recovery setup to the appliance based SRM.

The steps involved in the migration of the disaster recovery are:

1. Upgrading your existing virtual appliance for VSC, VASA Provider, and SRA to the 9.7.1 release.

   Upgrade to the 9.7.1 virtual appliance for VSC, VASA Provider, and SRA
2. Migrating Windows based Storage Replication Adapter to Appliance based SRA.
3. Migrating Windows SRM data to SRM Appliance.

Click here for detailed steps.

Upgrade to the 9.7.1 virtual appliance for VSC, VASA Provider, and SRA

You can perform a direct upgrade to the 9.7.1 release of the virtual appliance for VSC, VASA Provider, and SRA from your existing 9.7 setup following the instructions provided here.

Before you begin

- You must have downloaded the `.iso` file for the 9.7.1 release of the virtual appliance for VSC, VASA Provider, and SRA.
- You must have reserved at least 12 GB of RAM for the virtual appliance for VSC, VASA Provider, and SRA to work optimally after the upgrade.
- You must clean the vSphere Client browser cache.

  Clean the vSphere cached downloaded plug-in packages

About this task

The status of VASA Provider from the existing deployment is retained after the upgrade. You should manually enable or disable VASA Provider based on your requirement after you upgrade. However, it is best to enable VASA Provider even if VMware Virtual Volumes (vVols) are not in use, as it enables storage capability profiles for traditional datastore provisioning, and storage alarms.

> A direct upgrade from any release prior to 9.7 to 9.7P2 or later is not supported by the virtual appliance for VSC, VASA Provider, and SRA. You should first upgrade your existing setup to the 9.7 release of the virtual appliance for VSC, VASA Provider, and SRA before upgrading to any later release. When you upgrade to 9.7.1 release of virtual appliance for VSC, VASA Provider, and SRA and you want to use vVols replication, then you will need to setup one more vCenter Server with virtual appliance with Site Recovery Manager (SRM) installed.

Steps

1. Mount the downloaded `.iso` file to the virtual appliance:
   a. Click **Edit Settings › DVD/CD-ROM Drive**.
   b. Select **Datastore ISO** file from the drop-down list.
   c. Browse to and select the downloaded `.iso` file, and then select the **Connect at power on** checkbox.
2. Access the **Summary** tab of your deployed virtual appliance.
3. Click  to start the maintenance console.
4. At the “Main Menu” prompt, enter option `2` for **System Configuration**, and then enter option `8` for **Upgrade**.

   After the upgrade finishes, the virtual appliance restarts. The virtual appliance for VSC, VASA Provider, and SRA is registered to the vCenter Server with the same IP address as before the upgrade.
5. If you want the virtual appliance for VSC, VASA Provider, and SRA to be registered with the vCenter Server with the IPv6 address, then you must perform the following:
   a. Unregister the virtual appliance for VSC, VASA Provider, and SRA.

b. Register the IPv6 address of the virtual appliance for VSC, VASA Provider, and SRA to vCenter Server using the **Register** page.

c. Regenerate VSC and VASA Provider certificates after the registration.

IPv6 is supported only with vCenter Server 6.7 and later.

6. Log out and re-login to the vSphere Client to view the deployed virtual appliance for VSC, VASA Provider, and SRA.

   a. Log out from your existing vSphere web client or vSphere Client and close the window.

   b. Log in to the vSphere Client.

   It might take a few minutes for the plug-in to be updated in the vSphere Client.

Related information

Enable VASA Provider for configuring virtual datastores

Upgrade Storage Replication Adapter

After upgrading your virtual appliance for VSC, VASA Provider, and SRA or deploying the latest version of the virtual appliance, you have to upgrade your Storage Replication Adapter (SRA).

Steps

1. You must upgrade to the latest adapter using one of the following procedures based on your adapter:

For…	Perform the following…
Windows	a. Log in to the SRM Windows Server. b. Uninstall existing SRA *.msi* installer from SRM Server. c. Change the system path to `C:\Program Files\VMware\VMware vCenter Site Recovery Manager\external\perl\c\bin` d. Double-click on the *.msi* installer you downloaded from NetApp support site, and follow on-screen instructions. e. Enter the IP address and password of your deployed virtual appliance for VSC, VASA Provider, and SRA.

For…	Perform the following…
Appliance based adapter	a. Log in to the SRM Appliance Managementpage. b. Click **Storage Replication Adapter**, and click **Delete** to remove the existing SRA. c. Click **New Adapter › Browse**. d. Click to select the latest SRA tarball file that you downloaded from NetApp support site, and then click **Install**. e. Configure SRA on the SRM Appliance. Configure SRA on the SRM Appliance

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