

RELEASE NOTES

Dell EMC PowerFlex Storage Replication Adapter (SRA) Plugin for VMware Site Recovery Manager

Version 1.0.0.1

Release Notes

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Revision History

Revision	Date	Description
01	June, 2021	Initial release of version 1.0
02	November, 2022	Update versions of software
03	August, 2023	Update SRM versions
04	September, 2023	PowerFlex 4.5

Product Description

The Dell EMC PowerFlex Storage Replication Adapter for VMware Site Recovery Manager (SRA) allows VMware Site Recovery Manager (SRM) to implement disaster recovery for PowerFlex clusters. Using the PowerFlex replication engine, Dell EMC PowerFlex Storage Replication Adapter (SRA) supports all SRM functions including planned migration, failover, reprotect, and test failover.

- SRA version 1.0.0.1 is for Linux/Photon OS environments.

The PowerFlex SRA does not support Windows SRM.

Environment and System Requirements

Prerequisites

Before the Dell EMC PowerFlex SRA can be installed, the following prerequisites must be met:

- VMware vCenter and Site Recovery Manager (SRM) must be installed and configured at each site according to the VMware documentation.
- Two PowerFlex clusters with replication configured between them.
 - Any ESXi host that is part of either SRM site must have the SDC package installed on it.
 - Though not required for initial installation, Dell recommends creating at least one Replication Consistency Group with a device pair configured between the two clusters. The source volume should be presented to one vCenter while the peer or target volume is

presented Read Only to the other vCenter.

- HTTPS TCP port 443 must be opened between the SRM server and PowerFlex at each site.

Configuring PowerFlex Native Replication

To use VMware Site Recovery Manager, the PowerFlex clusters must be configured for native replication. Refer to the *Configure and Customize Dell PowerFlex Guide* for a detailed explanation of setting up the PowerFlex clusters for native replication.

SRA Compatibility Matrix

The following table presents the Dell EMC PowerFlex SRA Compatibility Matrix:

PowerFlex OS	VMware SRM ¹
SDC/SDS/SDR 1.x	8.2
SDC/SDS/SDR 2.x	8.3
SDC/SDS/SDR 3.x	8.4 ²
SDC/SDS/SDR 4.x	8.5 ²
	8.6 ²
	8.7 ²
	8.8 ²

For information on vSphere vCenter/ESXi/SRM compatibility, refer to VMware Documentation (<http://www.vmware.com/support/pubs>).

PowerFlex SDC does not yet support vSphere 8.

Note that the Supported Software row of the SRA, when viewed in SRM, may not reflect the most recent support. Always refer to the Compatibility Matrix for the most up-to-date support.

Technical Notes

This section contains important information about deploying Dell EMC PowerFlex SRA and VMware Site Recovery Manager.

¹ The SRA supports VMware Site Recovery Manager patched releases beyond the initially supported major release. For example, if an updated version of 8.8 became available (8.8.1), it would be supported. Dell will not do additional qualification, however, so it will not appear in VMware's compatibility matrix.

² Granted via equivalency.

Documentation

For the most current VMware vCenter SRM documentation, refer to the VMware web site (<http://www.vmware.com/support/pubs>).

PowerFlex documentation is available on the [Dell support website](#):

- *Dell PowerFlex Release Notes*
- *Configure and Customize Dell PowerFlex Guide*
- *Dell PowerFlex Install and Upgrade Guide*

Software Media

The Dell EMC PowerFlex SRA software and these release notes can be downloaded from the VMware website: <https://my.vmware.com/web/vmware/downloads>.

The Dell SRDF Adapter is distributed as a zip file, which contains two files: These release notes and the SRA.

Installation

This section contains important information about downloading, installing, updating, and uninstalling Dell EMC PowerFlex SRA.

Downloading, installing, updating and uninstalling the Dell EMC PowerFlex SRA

Before installing the Dell EMC PowerFlex SRA, make sure that VMware SRM is installed and configured on each vCenter and that they are paired to each other. For more information on installing Site Recovery Manager, see the VMware vCenter Site Recovery Manager documentation (<https://pubs.vmware.com>).

To download and install the Dell EMC PowerFlex SRA:

1. Verify that PowerFlex clusters are configured to be fully operational, including remote systems, volume groups and replication sessions.

Dell recommends using a custom System name for the PowerFlex cluster rather than the default generated one.

2. Extract the Dell EMC PowerFlex SRA file from the downloaded zip file:

Dell EMC PowerFlex SRA_1.0.0.1.tar.gz

3. Navigate to the SRM Appliance Management UI at: **<https://<SRM FQDN>:5480>**.

The Welcome to VMware Appliance Management dialog box appears.

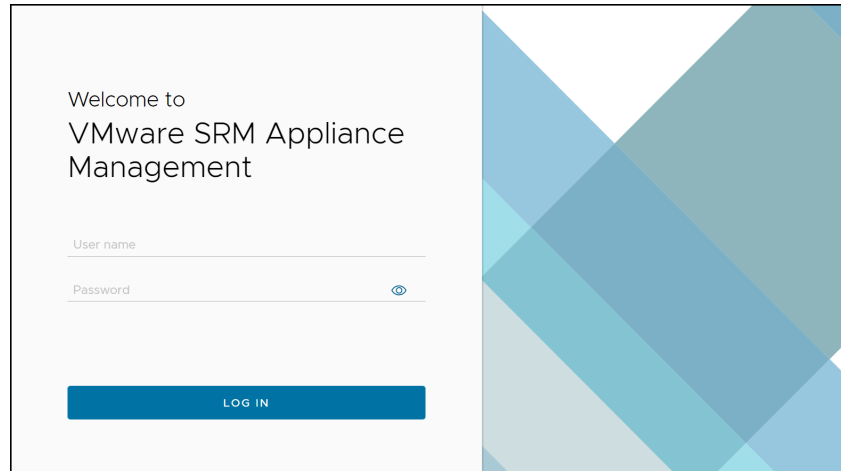


Figure 1. Welcome to VMware SRM Appliance Management

4. Enter the credentials (default administrator user is 'admin'), and select **LOG IN**.

Authenticate using the SRM administrative user as configured during the SRM installation stage with administrative privileges. Make sure that the replication sessions to be used with SRM are enabled and active.

5. In the SRM Appliance Management dialog box, navigate to **Storage Replication Adapters** in the left-hand panel. Next select **NEW ADAPTER** in the right-hand box.

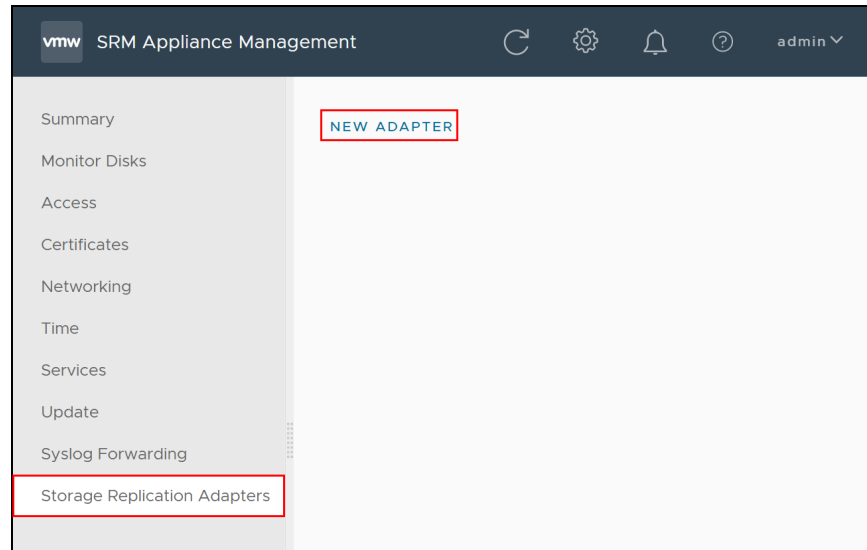


Figure 2. SRM Storage Replication Adapters – New Adapter

6. In the New Adapter dialog box, select **UPLOAD** and navigate to the file Dell_EM_C_PowerFlex_SRA_1.0.0.1.tar.gz.

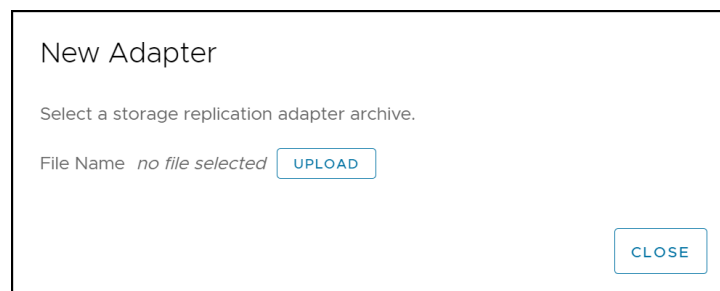


Figure 3. Upload new adapter

The file will immediately begin uploading.

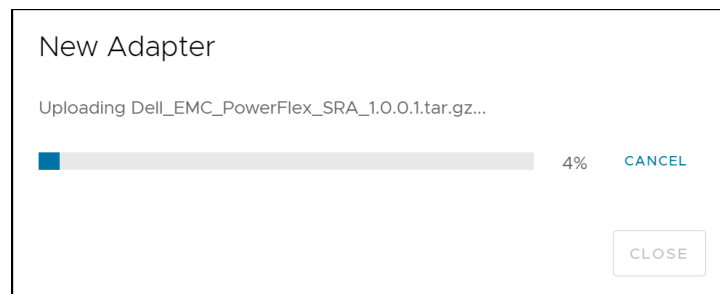


Figure 4. Uploading SRA

7. Upon successful completion, a green dialog box will show success. Select **CLOSE** to remove the dialog box.

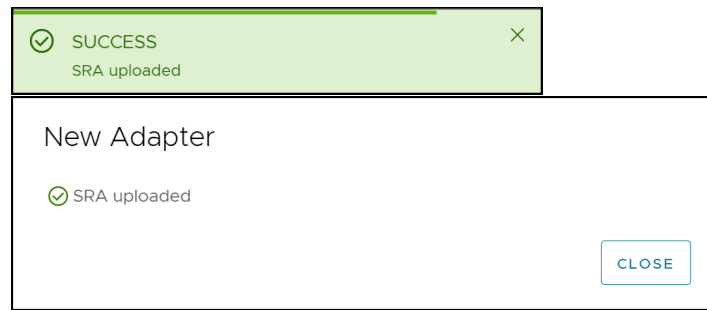


Figure 5. Successful upload

Configuring certificates for Photon OS

The following procedure describes configuring Dell EMC PowerFlex SRA certificates for Photon OS.

Before adding the PowerFlex clusters in SRM, an additional configuration step is required. The root certificate of each PowerFlex cluster must be uploaded to its respective SRA. This certificate can be the same one used when replication was configured between the two PowerFlex clusters, or it can be extracted again. The following steps walk through the process. It must be completed for each SRA.

1. Obtain the **root** certificate, in PEM format, of the PowerFlex cluster. If there is no generated certificate, it can be exported from the primary MDM instance using CLI. Note that the name of the certificate file is user-defined.

```
scli --login --username admin --password password
```

```
scli --extract_root_ca --certificate_file /tmp/root_ca.pem
```

2. Log back into the SRM Appliance Management and navigate to Storage Replication Adapters.

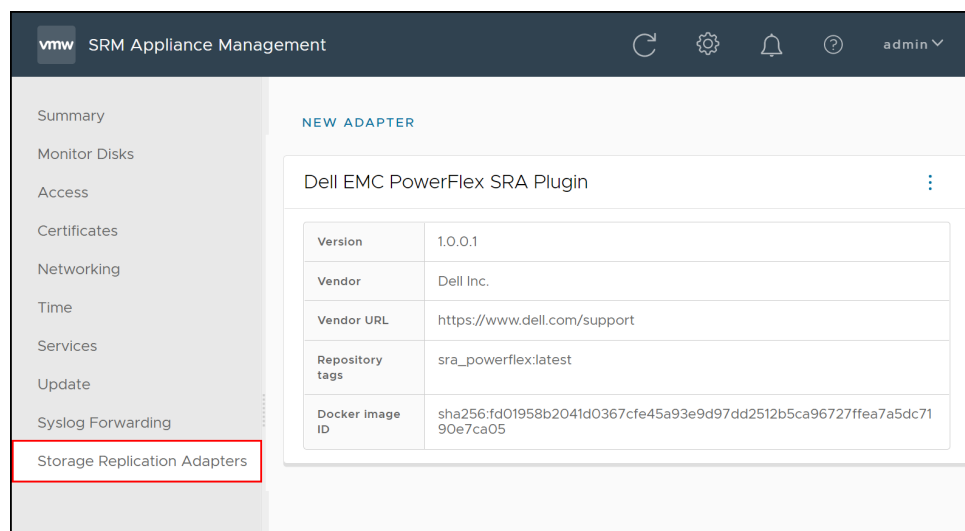


Figure 6. SRA screen in SRM Appliance Management

3. Select the three dots in the corner of the Dell EMC PowerFlex SRA Plugin box and choose the menu **Download configuration archive**. This will initiate a download of the SRA configuration files in the form of the file **sra_powerflex~latest.tar.gz**.

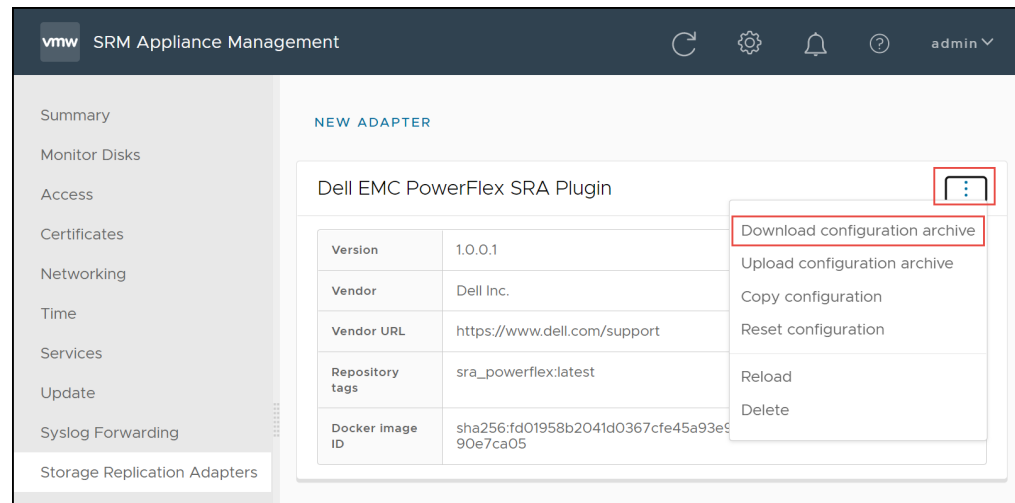


Figure 7. Download SRA archive

4. Using 7-Zip (or another unzip utility) as in this example, extract the archive zipped file and the tar file within it. There will be two files: **config.ini** and **sra-configuration-version.txt**



Name	Date modified	Type	Size
 config.ini	11/17/2022 12:05 PM	Configuration sett...	1 KB
 sra-configuration-version.txt	11/17/2022 12:04 PM	Text Document	1 KB

Figure 8. Contents of archive

5. Copy the root certificate of the appropriate PowerFlex cluster into the same directory.




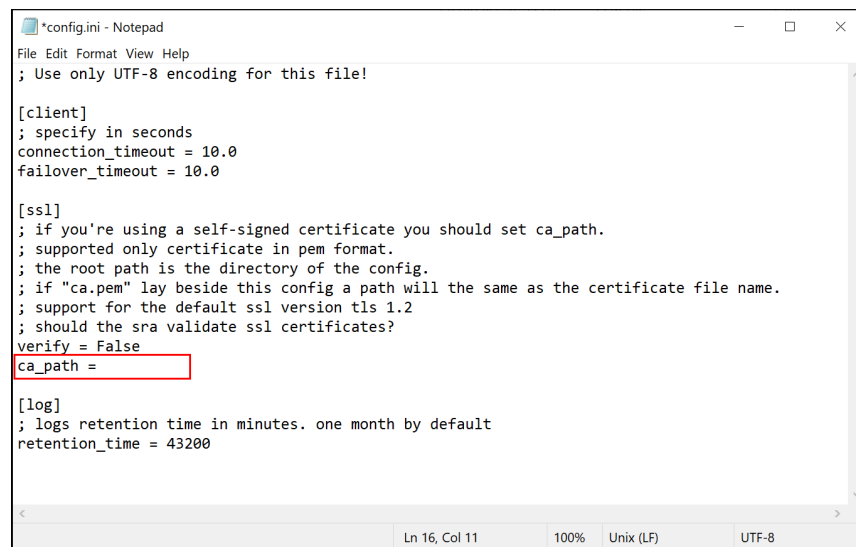
Name	Date modified	Type	Size
 config.ini	11/17/2022 12:05 PM	Configuration sett...	1 KB
 sra-configuration-version.txt	11/17/2022 12:04 PM	Text Document	1 KB
 root_ca.pem	11/10/2022 12:35 PM	PEM File	2 KB

Figure 9. Copy over the root certificate

6. Next, edit the config.ini file with a Notepad or a simple text editor. Do not use Microsoft Word to avoid adding extra characters. Once open, look for the variable **ca_path =** under the **[ssl]** section.



```
*config.ini - Notepad
File Edit Format View Help
; Use only UTF-8 encoding for this file!

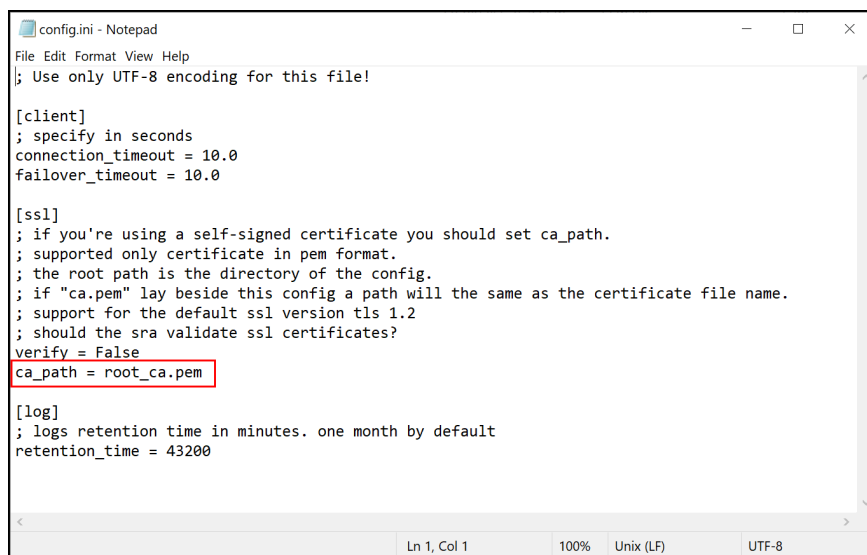
[client]
; specify in seconds
connection_timeout = 10.0
failover_timeout = 10.0

[ssl]
; if you're using a self-signed certificate you should set ca_path.
; supported only certificate in pem format.
; the root path is the directory of the config.
; if "ca.pem" lay beside this config a path will the same as the certificate file name.
; support for the default ssl version tls 1.2
; should the sra validate ssl certificates?
verify = False
ca_path =

[log]
; logs retention time in minutes. one month by default
retention_time = 43200
```

Figure 10. Config.ini before editing

7. Edit the config.ini by typing in the name of the root certificate then saving the file.



```
config.ini - Notepad
File Edit Format View Help
; Use only UTF-8 encoding for this file!

[client]
; specify in seconds
connection_timeout = 10.0
failover_timeout = 10.0

[ssl]
; if you're using a self-signed certificate you should set ca_path.
; supported only certificate in pem format.
; the root path is the directory of the config.
; if "ca.pem" lay beside this config a path will the same as the certificate file name.
; support for the default ssl version tls 1.2
; should the sra validate ssl certificates?
verify = False
ca_path = root_ca.pem

[log]
; logs retention time in minutes. one month by default
retention_time = 43200
```

8. The three files can now be re-packed. The following walks through the steps using 7-Zip.

Right-click on the files and select 7-Zip -> **Add to archive...**

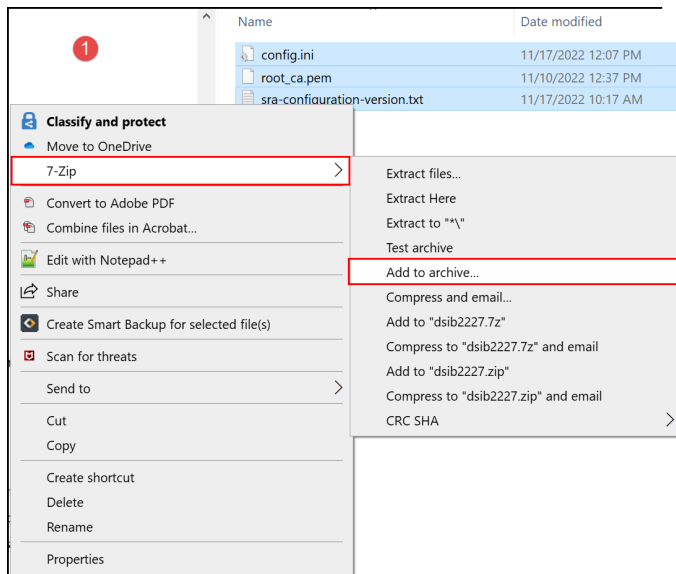


Figure 11. Create compressed archive - Step 1

Provide a name for the file with .tar suffix and set the **Archive format** to **tar**.

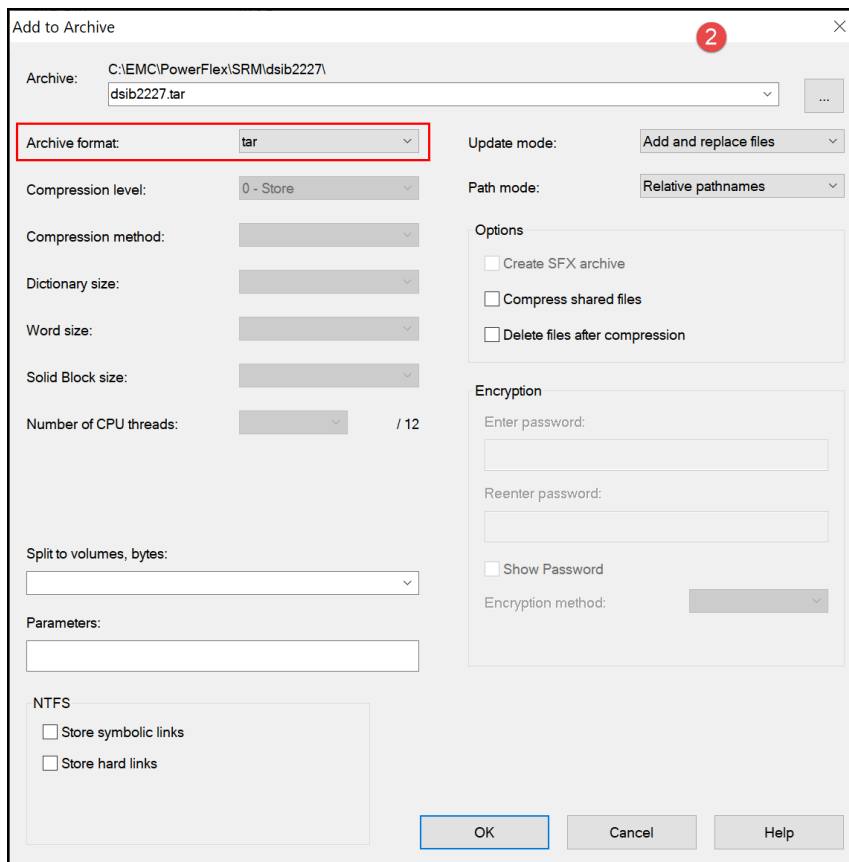


Figure 12. Create a compressed archive - Step 2

Next, right-click on the newly created tar file, in this example dsib2227.tar, and again choose

Add to archive...

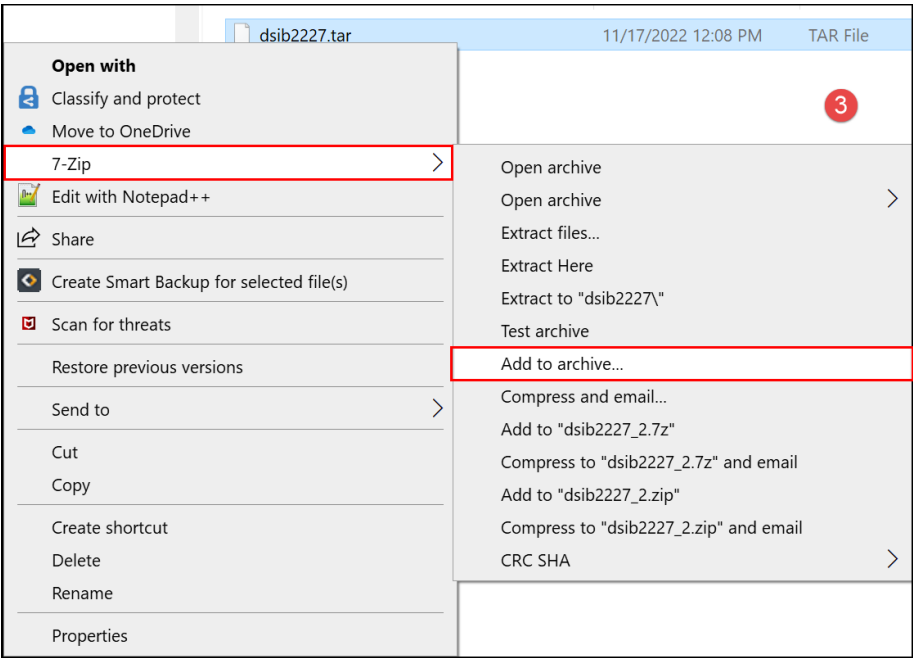


Figure 13. Create a compressed archive - Step 3

Provide a name for the file with .tar.gz suffix and set the **Archive format** to gzip.

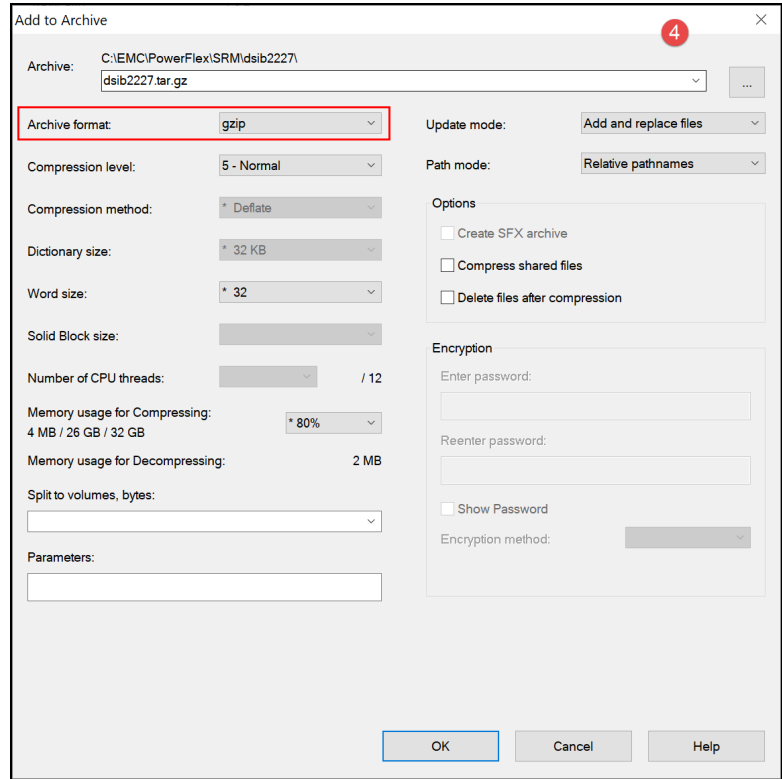


Figure 14. Create a compressed archive - Step 4

9. Now upload the file to the SRA. Using the same process as downloading, select the three buttons and choose **Upload configuration archive**.

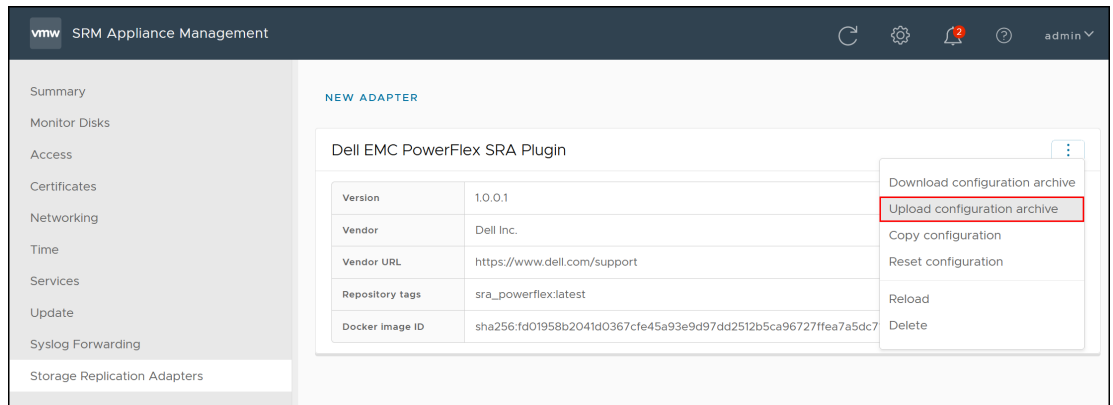


Figure 15. Upload configuration archive menu option

Provide the file and select **UPLOAD**. Another green box will appear indicating success.

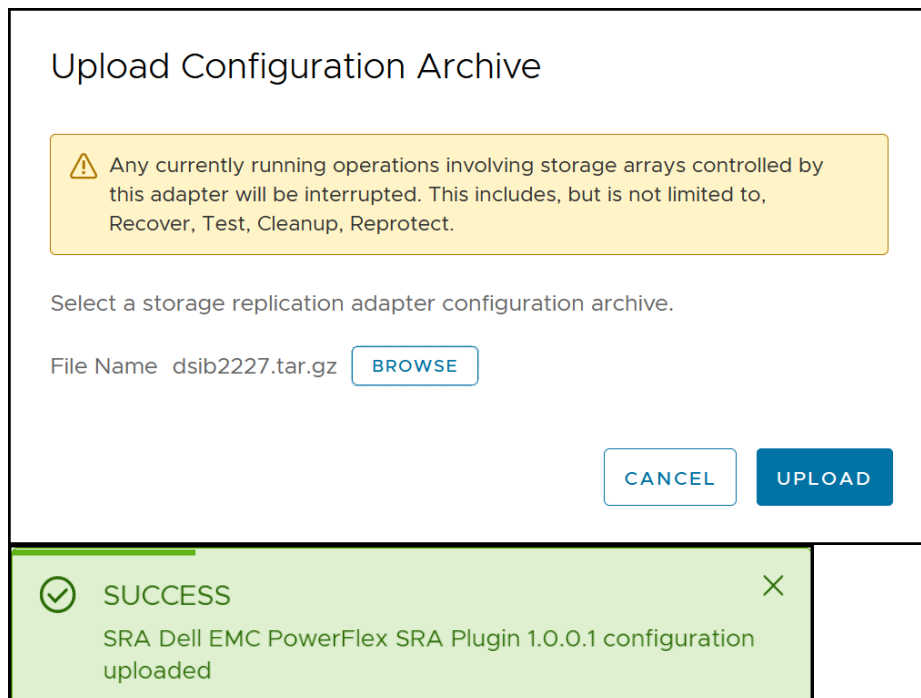


Figure 16. Upload configuration archive

Advanced Configuration

The following table shows the advanced configuration parameters for the Dell EMC PowerFlex SRA:

Section	Parameter	Default Value	Description
client	failover_timeout	10 min	The failover_timeout parameter determines how long SRA attempts to wait failover procedure before a timeout error occurs.
client	connection_timeout	10 sec	The connection_timeout parameter determines how long SRA attempts to connect before a timeout error occurs. In addition, the parameter determines how long SRA waits before making another attempt if the connection is interrupted. You can adjust this parameter according to your network configuration.
ssl	verify	FALSE	The verify parameter determines whether SRA validates a server SSL certificate. If the parameter set to True, SRA performs the validation. If the parameter is set to False, SRA does not perform the validation. NOTE: You must adjust this parameter if you want a secure connection.
ssl	ca_path	blank	The ca_path parameter specifies a path to a root certificate. If verify is enabled and you are using a self-signed certificate, you should export the root certificate from the storage host, place it beside the downloaded config file and set ca_path to the certificate name. NOTE: You must adjust this parameter if you want a secure connection.

To configure SRA parameters:

1. In the SRM Appliance Management dialog box, select **Storage Replication Adapters**.
2. From the Dell EMC PowerFlex Storage Replication Adapter menu, select **Download configuration archive**. Uncompress the tar file and extract to a directory.

The archive file contains the following files:

- sra-configuration-version
 - config.ini
 - root certificate (user-defined name)
3. Modify the configuration parameters in the **config.ini** as desired.
 4. Recompress the files as previously detailed in the section **Configuring certificates for Photon OS**.
 5. From the Dell EMC PowerFlex Storage Replication Adaptor menu, select **Upload configuration archive**.
 6. Click **Browse** and navigate to the file.
 7. Select **UPLOAD** to complete the process.

Resetting the SRA configuration to the factory defaults

To reset the SRA configuration to factory defaults:

1. In the SRM Appliance Management dialog box, select **Storage Replication Adapters**.
2. From the Dell EMC PowerFlex Storage Replication Adaptor menu, select **Reset configuration**.

The Reset Adapter Configuration dialog box opens.

3. Click **RESET**.

Uninstalling the Dell EMC PowerFlex Storage Replication Adapter

To uninstall the Dell EMC PowerFlex SRA:

1. In the SRM Appliance Management dialog box, select **Storage Replication Adapters**.
2. From the Dell EMC PowerFlex Storage Replication Adaptor menu, select **Delete**.

The Delete Adapter dialog box appears.

3. Select the checkboxes and select **DELETE**.

Upgrading the Dell EMC PowerFlex Storage Replication Adapters

To upgrade the SRA, follow the instructions for installing the SRA. The newer version is installed. Deletion of the old SRA is done through the web interface.

Getting Help

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

Product information — For documentation, release notes, software updates, or information about Dell products, go to Dell Online Support at:

<https://dell.com/support/home/en-us/>

Technical support — Go to Dell EMC Online Support and select Service Center. There are several options for contacting Dell EMC Technical Support. Note that to open a service

request, a valid support agreement is necessary. Contact your Dell EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

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