DELL Storage Integration Tools for VMware User Guide

DELL Storage Integration Tools for VMware

Notes, cautions, and warnings

ⓘ NOTE: A NOTE indicates important information that helps you make better use of your product.

⚠ CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

⚠ WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Contents

Preface

This guide provides instructions for installing the Dell Storage Integration Tools for VMware (DSITV) and for configuring Replay Manager Service for VMware (RMSV) and Dell Storage vSphere Client Plugin.

Revision History

Document number: 680-131-005

Revision	Date	Description
A	June 2021	Initial release
B	August 2023	Require resetting password on initial setup

Audience

The intended audience of this guide is information technology professionals who have intermediate to expert knowledge of Dell Storage Centers, Dell Storage Manager, and Replay Manager. This guide assumes

administrative working knowledge of the VMware vSphere Client, VMware vCenter, and VMware ESXi.

Related Publications

The following documentation is available for client applications that are used with Dell storage products.

- Dell Storage SC Series Best Practices with VMware vSphere
  Provides configuration examples, tips, recommended settings, and other storage guidelines a user can follow while
  integrating VMware vSphere with a Storage Center. This document answers many frequently asked questions about how VMware interacts with Storage Center features, such as Dynamic Capacity, Data Progression, and Data Reduction.
- Dell Storage vSphere Client Plugin Administrator's Guide
  Describes how to use the vSphere Client Plugin to manage a Storage Center with the VMware vSphere Client.
- Dell Storage Manager Administrator's Guide
  Provides configuration and management instructions for Dell Storage Manager. Dell Storage Manager provides enterpriselevel management of multiple Storage Centers, including setting up and monitoring replications and disaster recovery (DR) sites. In addition, it provides various system-provided performance reports, and the ability to create custom reports.
- Replay Manager Administrator's Guide
  Describes how to install Replay Manager and how to use the software to back up and restore data on a server.

Contacting Dell

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services might not be available in your area.
To contact Dell for sales, technical support, or customer service issues, go to **Dell.com/support**.

- For customized support, type your system service tag on the support page and click Submit.
- For general support, browse the product list on the support page and select your product.

Installing DSITV

This section describes DSITV components and how to install DSITV.

DSITV integrates the Replay Manager Service for VMware (RMSV) and Dell Storage vSphere Client Plugin with VMware vSphere.

- Replay Manager Service for VMware (RMSV) ensures consistent snapshots of VMware virtual machines and datastores. To configure RMSV, see Configuring RMSV.
- Dell Storage vSphere Client Plugin is a plugin for VMware vCenter that provides storage administrators the ability to manage Dell storage with the VMware vSphere Client. To install the Dell Storage vSphere Client Plugin on a VMware vCenter Server, see Installing the vSphere Client Plugin.
- For information about installing and configuring VMware software, see: **www.vmware.com/support**.

Software Requirements

This section describes the software requirements for the DSITV components.

Table 1. Replay Manager Service for VMware (RMSV)

Product	Versions
Storage Center	7.3.x, 7.4.x, 7.5.x
Replay Manager Explorer	7.8, 8.0, 8.0.1
VMware ESXi	6.5, 6.7, 7.0
VMware vCenter Server	6.5, 6.7, 7.0

Table 2. Dell Storage vSphere Client Plugin

Product	Versions
Dell Storage Manager	2018 R1, 2019 R1, 2020 R1
Storage Center	7.3.x, 7.4.x, 7.5.x
VMware ESXi	6.5, 6.7, 7.0
VMware vCenter Server	6.5, 6.7, 7.0

(i) NOTE: Microsoft Windows vCenter Server is not supported.

(i) NOTE: FluidFS is not supported in DSITV version 5.1 and later.

(i) NOTE: The Dell Storage Manager Data Collector is required for the Dell Storage vSphere Client Plugin. See the Dell Storage
Manager Installation Guide for information about installing the Data Collector.

Deploying DSITV

The DSITV virtual appliance is delivered as an OVA (Open Virtual Appliance) file. The OVA file is named DSITV-06.01.00.XXX.ova and is deployed to a VMware vCenter Server using the Deploy OVF Template wizard.

Steps

1. Start the vSphere Client and connect to the VMware vCenter Server.
2. Select Menu > VMs and Templates.
3. Select Actions > Deploy OVF Template.

   The Deploy OVF Template wizard opens.
4. Specify the location of the .ova file:

   ● Select URL and enter the location of the file.

   ● Select Local file, and then Choose Files. Navigate to the .ova file.
5. Click Next.

6. Enter a name for the virtual machine and select a location.

   - (Optional) Change the name of the virtual appliance in the Name field.
   - (Optional) Select a folder in the Inventory Location pane to which to deploy the virtual appliance.

7. Click Next.

   The Select a compute resource page opens.

8. Select the host or cluster on which to deploy the virtual appliance.

9. Click Next.

   The Review details page opens.

10. Verify the OVF template details and click Next.

    The License agreement page opens.

11. Read the license agreement and click Accept.

12. Click Next.

    The Storage page opens.

13. Select a virtual disk format:

    - Thick Provision Lazy Zeroed: disk size is established when the disk is created. Existing data on the physical disk is zeroed out on-demand as data is written to the disk.
    - Thick Provision Eager Zeroed: disk size is established when the disk is created. Existing data on the physical disk is zeroed out when the virtual disk is created.
    - Thin Provision: disk size accommodates the size of the content.

14. Select a VM Storage Policy from the list.

15. Click Next.

    The Select networks page opens.

16. Select the destination network for the DSITV virtual machine files.

17. Select the IP Allocation Settings.

18. Click Next.

    The Ready to complete page opens.

19. Review the settings for the template and click Finish.

Next steps
Assign a daily Snapshot Profile to the Storage Center volume on which DSITV is being deployed to allow the DSITV virtual appliance to be recovered.

Setting Up DSITV

After deploying DSITV, configure the time on the DSITV virtual appliance and then log on to the virtual appliance to configure the time zone and network settings.

Configuring the Time on the DSITV Virtual Appliance

Make sure the time on the ESXi host is correct and then configure the DSITV virtual appliance to synchronize its time with the ESXi host.

Steps

1. Start the vSphere Client and connect to the VMware vCenter Server.
2. Select Menu > Hosts and Clusters.

The Hosts and Clusters view opens.

3. Select the ESXi host in the left navigation pane and click the Configure tab.
4. Click Edit.

   The Edit Time Configuration page opens.

5. If the time or date is incorrect

   a. Select whether to manually set the time or to use NTP.

   b. For manual configuration, enter current date and time.

   c. For NTP configuration, enter the server or servers to use, select Start NTP Service and choose the NTP Service

   Startup Policy.

6. Click OK.
7. Select Menu > VMs and Templates.

   The Virtual Machines & Templates view opens.

8. Select the DSITV virtual appliance and click (Edit Settings).

   The Edit Settings dialog box opens.

9. Click the VM Options tab and expand the VMware Tools option.
10. Make sure the Synchronize guest time with host check box is selected.
11. Click OK.

Logging In to DSITV
Use the vSphere Client to log in to DSITV.

Steps

1. Start the vSphere Client and connect to the VMware vCenter Server.
2. Select Menu > VMs and Templates.

   The Virtual Machines & Templates view opens

3. Select the DSITV virtual appliance and click (Open Console).

4. If the virtual appliance is not running, click (Power On).
5. When the login prompt appears, type the DSITV login credentials.

   After you log in, the CLI menu is displayed:


```
################################################################
# Welcome to Dell Storage Integration Tools for VMware #
# Version - 06.01.00.XXX #
################################################################
```

Item	Status
1. Set the time zone (Current: UTC)	Set
2. Configure network (eth0)	Set
3. Configure RMSV	Set
4. Register vSphere Client Plugin with vCenter	
5. Unregister vSphere Web Client Plugin with vCenter	
6. Unregister vSphere Client Plugin with vCenter	

11. Restart Replay Manager for VMware (RMSV)
12. Reboot appliance
13. Change root password
14. Customer support
15. Update appliance
16. Logout

Enter selection [1 - 16]:

a. Type root at the login prompt and press Enter.
b. Type Fluid (case sensitive) at the password prompt and press Enter.
After logging in, the DSITV command-line interface (CLI) prompt is displayed.

Configuring DSITV Settings
After logging in to DSITV for the first time, configure the time zone and network settings. In addition, Dell recommends changing the root password of DSITV now.

Configure the Time Zone of DSITV
Steps

1. Log in to DSITV.

2. At the CLI prompt, type 1 and press Enter.

3. Specify the time zone using a geographical location.

4. When the correct time zone is displayed, type 1 and press Enter to save the changes.

5. When the time zone is set, press Enter to return to the main menu.

Configure the Network Settings of DSITV
Steps

1. Log in to DSITV.

2. At the CLI prompt, type 2 and press Enter.

3. Type the host name of DSITV and press Enter.

4. Type the IP address of DSITV for the management network and press Enter.

5. Type the network mask for the management network and press Enter.

6. Type the gateway IP address for the management network and press Enter.

7. Type the IP address of the DNS server for the management network and press Enter.

8. To specify a second DNS server, type the IP address of the DNS server for the management network and

press Enter.

Otherwise, press Enter to skip this step.

9. When the values that you entered in the previous steps are displayed on the screen, type y and press Enter to save the

changes.

10. When the network settings are configured, press Enter to return to the main menu.

Required – Change the Root Password of DSITV
Steps

1. Log in to DSITV.

2. At the CLI prompt, type 13 and press Enter.

3. Type the new root password and press Enter.

4. Type the new root password again and press Enter.

5. When the root password is changed, press Enter to return to the main menu.

Updating DSITV
When an updated version of the DSITV virtual appliance becomes available, it can be installed from the virtual appliance. If DSITV is installed at a dark site, see Updating DSITV at a Dark Site

Display the Current Version of DSITV

Steps

1. Log in to DSITV.

2. At the CLI prompt, type 15 and press Enter. The following options are displayed:

    ----

    1. Appliance version

    2. Check for updates

    3. Install update

    4. Return to main menu

    Enter selection [1 - 4]:

3. Type 1 and press Enter. The current version of the virtual appliance is displayed.

4. Press Enter to return to the virtual appliance update menu.

Check for Updates to DSITV

Steps

1. Log in to DSITV.

2. At the CLI prompt, type 15 and press Enter. The following options are displayed:

    ----

    1. Appliance version

    2. Check for updates

    3. Install update

    4. `Return to main menu`

       `Enter selection [1 - 4]:`

3. Type 2 and press Enter.

   ● If an update is not found, the following message is displayed: No available updates found

   ● If an update is found, the version number of the update is displayed.

4. Press Enter to return to the virtual appliance update menu.

Install an Update to DSITV

Prerequisites

⚠ CAUTION: Before updating DSITV, make sure that no scheduled backups or restore operations are in progress.

Steps

1. Log in to DSITV.

2. At the CLI prompt, type 15 and press Enter. The following options are displayed:

   `------------------------------------------`

       1. `Appliance version`

       2. `Check for updates`

       3. `Install update`

       4. `Return to main menu`

          `Enter selection [1 - 4]:`

3. Type 3 and press Enter.

   ● If an update is not found, the following message is displayed: No available updates found

   ● If an update is found, the version number of the update is displayed and the update is installed.

4. Press Enter to return to the virtual appliance update menu.

5. Type 16 and press Enter to log out of DSITV.

6. When the login prompt appears, log back in to DSITV.

Next steps

1. Reboot the DSITV appliance after installing the update. On some occasions, the version number is not refreshed immediately after an update. This action also updates the version number.

2. After rebooting the DSITV appliance, unregister and reregister the vSphere Client Plugin from the DSITV appliance's CLI menu. This action removes the old plugin and registers the new plugin to vCenter.

3. When Replay Manager Explorer is installed on a server with the Replay Manager Service, restart the Replay Manger Service after the DSITV update completes.

Related information
Rebooting DSITV

Updating DSITV at a Dark Site

When DSITV is installed at a site without Internet access, updates to DSITV must be obtained from Dell Technical Support. The updates can then be made available using an internal web server or they can be copied directly to the virtual appliance.

Copy Updates to a Web Server
Steps

1. Contact Dell Technical Support to obtain the latest DSITVUpdate.zip file.
2. Extract the contents of theDSITVUpdate.zip file to a folder named dsitvupdate in the root directory of the web server.

   For example, if the root directory of the web server is C:\inetpub\wwwroot, extract the contents of the zip file to C:\inetpub\wwwroot\dsitvupdate.
3. Verify access to the updates by using a web browser to go to http://web_server_address/dsitvupdate/-manifest/manifest-latest.xml.
4. Log in to DSITV.
5. Type 99 and press Enter to access the interactive shell.
6. Open the /etc/hosts file.
7. Add the following entry at the end of the hosts file:

   citv.**compellent.com**[IP_address_of_web_server]
8. Save changes to the hosts file and type exit to return to the CLI.
9. Install the updates as described in Updating DSITV.

Copy Updates to the Virtual Appliance
Steps

1. Contact Dell Technical Support to obtain the latest DSITVUpdate.zip file.
2. Using a computer with Internet access, download an unzip tool for CentOS release 6.7, which is the operating system of the virtual appliance.
3. Use Secure Copy (SCP) to copy the DSITVUpdate.zip file and unzip the RPM file from a local computer to the virtual

   appliance.
4. Log in to DSITV.
5. Type 99 and press Enter to access the interactive shell.
6. Install the unzip tool:

   rpm -ivh [unzip_package_name].rpm
7. Create a directory named DSITVUpdate.zip in the root directory:

   mkdir dsitvupdate
8. Extract the update files to the DSITVUpdate.zip directory:

   unzip DSITVUpdate.zip -d dsitvupdate
9. Open the /opt/vmware/var/lib/vami/update/provider/provider-deploy.xml file.
10. Find the string **http://citv.compellent.com/** and change it to file://root/dsitvupdate.
11. Save changes to the provider-deploy.xml file and type exit to return to the CLI.
12. Install the updates as described in Updating DSITV.

Rebooting DSITV

Prerequisites

⚠ CAUTION: Before rebooting DSITV, make sure no scheduled backups or restore operations are in progress.
Steps

1. Log in to DSITV.

2. At the CLI prompt, type 12 and press Enter.

3. Type y and press Enter. The following messages are displayed:

   Broadcast message from root...

   The system is going down for reboot NOW!

4. When the login prompt appears, log back in to DSITV.

Replay Manager Service for VMware

Replay Manager Service for VMware (RMSV) enables Replay Manger to communicate with VMware vCenter and create consistent Replays of VMware virtual machines and datastores on a Dell Storage Center.

RMSV Data Migration

Upgrading from earlier versions of DSITV requires a migration of RMSV data.
You can choose to migrate the RMSV data created in DSITV 5.x to DSITV 6.1 during the RMSV configuration process. DSITV prompts you to migrate data unless one of the following conditions is met:

- You have already migrated data from DSITV 5.x to DSITV 6.1.
- You chose to configure DSITV 6.1 without migrating the earlier data.

After you configure RMSV, the data migration option is no longer displayed and you can no longer migrate data from the earlier release.

ⓘ NOTE: Each restore point increases the time it takes for the data migration to finish.
After migration, the following data becomes accessible to DSITV 6.1:

- List of defined Storage Centers
- Email service settings and snapshot notifications email
- License status and serial number information
- Jobs schedule
- Backup sets and restore point status reports
- Related virtual machine and datastore backup data

ⓘ NOTE: If you are running DSITV version earlier than 5.0, you must first upgrade to DSITV 5.x. Then, you can migrate the data from DSITV 5.x to DSITV 6.1 as indicated.

Configuring RMSV

To allow Replay Manager to communicate with VMware vCenter, RMSV must be configured with information

about the VMware vCenter Server.

Prerequisites

⚠ CAUTION: Errors might occur on the VMware ESXi host if multiple instances of RMSV, on multiple DSITV virtual appliances, are configured to communicate with a single VMware vCenter Server. Each instance of RMSV must be configured to communicate with a different VMware vCenter Server.

- Deploy DSITV and configure the time zone and network settings.
- Identify the host name or IP address of the VMware vCenter Server.
- Identify the user name and password of a VMware vCenter user with administrator privileges.
- Decide whether to migrate RMSV data from DSITV 5.x. For more information, see RMSV Data Migration.

Steps

1. Log in to DSITV.
2. At the CLI prompt, type 3 (Configure RMSV) and press Enter.

   If you are upgrading from DSITV 5.x, DSITV begins the RMSV configuration process and asks if you want to migrate data from an existing DSITV 5.x appliance. If you have an existing DSITV 5.x appliance with data that you would like to migrate, continue with step 3. If prompted to migrate data, continue with step 4.
3. To begin the data migration, type y when prompted and continue with the following steps:

   ⓘ NOTE: If you have already configured RMSV or migrated from a DSITV 5.x appliance, the migration option is not available.

   a. Enter the IP address or host name of the DSITV appliance from which to migrate the data.

   DSITV authenticates the host and asks if you want to continue connecting.

   b. Type yes when asked to confirm that you want to continue connecting.

   DSITV adds the host to the list of known hosts, stops the Replay Manager on that host, and begins copying the RMSV data files.

   c. After the files are migrated, DSITV disables the Replay Manager on that host, restarts Replay Manager, and indicates that the data migration has completed. Continue with step 4.
4. Type the host name or IP address of the VMware vCenter Server and press Enter.
5. Type the user name of the VMware vCenter user with administrator privileges and press Enter.
6. Type the password of the user with administrator privileges and press Enter.
7. Retype the password and press Enter to confirm the password.
8. Type 11 and press Enter.

   RMSV attempts to connect to the VMware vCenter Server. If a Connected successfully message is displayed, continue to step 8. If a Connection to vCenter failed message is displayed verify the server information and repeat the steps 4 through 7. For additional information, see Troubleshooting RMSV.

   ⓘ NOTE: If a server certificate message is displayed, type y and press Enter to trust the certificate.
9. Add the VMware vCenter Server to Replay Manager Explorer using the host name or IP address of DSITV and the user name and password of a VMware vCenter user with administrator privileges.

See the Replay Manager Administrator's Guide for details about adding the VMware vCenter Server to Replay Manager.

ⓘ NOTE: Replay Manager management tools such as Replay Manager Explorer must be installed on a computer that has connectivity to the DSITV virtual appliance.

Dell Storage vSphere Client Plugin

The Dell Storage vSphere Client Plugin is a plugin for VMware vCenter that provides storage administrators the ability to manage Dell storage with the VMware vSphere Client.

Installing the Dell Storage vSphere Client Plugin

To install the Dell Storage vSphere Client Plugin, register the plugin with VMware vCenter.

Prerequisites

ⓘ NOTE: This version of DSITV supports only VMware vCenter Server Appliance. Microsoft Windows vCenter Server is not
supported.

- Deploy DSITV and configure the time zone and network settings.
- Identify the host name or IP address of the VMware vCenter Server.
- Identify the user name and password of a VMware vCenter user with administrator privileges.
- Make sure that Dell Storage Manager Data Collector is communicating with Storage Center.

Steps

1. Log in to DSITV.
2. At the CLI prompt, type 4 and press Enter.
3. Type the host name or IP address of the VMware vCenter Server and press Enter.
4. Type the user name of a VMware vCenter Server user with administrator privileges and press Enter.
5. Type the password of the user with administrator privileges and press Enter.
6. If necessary, retype the password and press Enter to confirm the password.

   ⓘ NOTE: If a server certificate message is displayed, type y and press Enter to trust the certificate.
7. Type the host name or IP address of DSITV and press Enter.
8. Type y and press Enter.
9. After the vSphere Client Plugin is installed, press Enter to return to the main menu.
   Refer to the Dell Storage vSphere Client Plugin Administrator's Guide for details about managing and using the vSphere Client Plugin.

Removing the vSphere Client Plugin

To remove the vSphere Client Plugin, unregister the plugin from VMware vCenter.

Prerequisites

- Identify the host name or IP address of the VMware vCenter Server.
- Identify the user name and password of a VMware vCenter user with administrator privileges.

Steps

1. Log in to DSITV.
2. At the CLI prompt, type 6 and press Enter.
3. Type the host name or IP address of the VMware vCenter and press Enter.
4. Type the user name of a VMware vCenter user with administrator privileges and press Enter.
5. Type the password of the user with administrator privileges and press Enter.
6. Type y and press Enter to remove thevSphere Client Plugin.
7. After the vSphere Client Plugin is removed, press Enter to return to the main menu.
8. To view the changes in the VMware vCenter Web client, log out and log back in.

DSITV Application Troubleshooting

To handle any issues with the DSITV application:

- Use the RMSV troubleshooting procedures to troubleshoot issues with Dell Replay Manager Service for VMware.
- Use the vSphere Client Plugin troubleshooting procedures to troubleshoot issues with Dell Storage vSphere Client Plugin.

Troubleshooting RMSV
If the Replay Manager is unable to connect to the VMware vCenter Server:

- Verify that the host name or IP address of the VMware vCenter Server is correct and the VMware vCenter Server user has administrator privileges. See Configuring RMSV.
- Verify that RMSV is running. See Save RMSV Log Files.

If further troubleshooting is required, Dell Technical Support might need a copy of RMSV logs for analysis. See Save RMSV Log Files.

Restart RMSV

Use option 11 in the CLI to restart RMSV and verify that it starts

Steps

1. Log in to DSITV.
2. At the CLI prompt, type 11 and press Enter. The following messages are displayed:
   Waiting 15 seconds for the service to restart
   Starting replaymanager: [OK]

RMSV is stopped and restarted.

- If [OK] is displayed, RMSV started successfully.
- If [Failed] is displayed, RMSV failed to start.

Save RMSV Log Files
Use option 14 in the CLI to save the RMSV log file to a zip file.
Steps

1. Log in to DSITV.
2. At the CLI prompt, type 14 and press Enter. The following options are displayed:
    1. Gather support information
    2. Return to main menu
       Enter selection [1 - 2]:
3. Type 1 and press Enter. The zip file with the logs is saved to the root directory of the virtual appliance.
4. Use Secure Copy (SCP) to copy the zip file from the virtual appliance to a local computer.

   When the zip file is on a local computer, it can be sent to Dell Technical Support.

Troubleshooting the vSphere Client Plugin

Dell Storage Icon Is Missing

If the Dell Storage icon does not appear in the Administration pane of the vSphere Client:

- Verify that the host name or IP address of the VMware vCenter Server is correct and the VMware vCenter Server user has administrator privileges. See Restart RMSV.
- Verify that the vSphere Client Plugin is running. See Installing the vSphere Client plugin.
- Restart the vSphere Web Client service.
    - For a Windows-based vCenter server, restart the vSphere Web Client service by accessing Server Manager > Services
      > VMware vSphere Web Client service. Select Restart to restart the service.
    - For a Linux-based vCenter Server appliance, use one of the following commands to restart the service:
        - service vsphere-client restart
        - /etc/init.d/vsphere-client restart
          If further troubleshooting is required, Dell Technical Support might need a copy of vSphere Web Client log files for analysis. See View vSphere Client Plugin Log Files.

Plugin Summary and Monitor Page Appears Disabled

Summary information might not display in the vSphere Client Plugin. Information will appear blank on the summary page
(Summary tab, then Dell Storage tab) and monitor page (Monitor tab, then Dell Storage tab).
Ensure that the credentials you entered on the Manage tab for vCenter server and Dell Storage Manager configuration are correct.

Cannot Enable Live Volume to Failover Automatically

Live Volume configured to fail over automatically and promote the secondary volume might fail if the following requirements are
not met:

- Type is Synchronous
- Synchronous mode is High Availability
- Source and target Storage Centers are at version 6.7 or later

Select a datastore or RDM that meets these requirements. Optionally, modify the datastore to meet these requirements or
create a new datastore or RDM.

View vSphere Client Plugin Log Files

For additional information, refer to the following publications:

Steps

1. To view the vSphere Client Plugin log files, refer to the VMware Knowledge Base article Location of vSphere Web Client 5.x service logs (2004090).
2. To change the logging level, refer to the VMware Knowledge Base article Enabling debug logging on the VMware vSphere 5.x/6.0 Web Client service (2011485).

Registration Failure Related to TLS
Registration of the vSphere Client Plugin could fail if the vCenter Server is configured with TLS 1.0 disabled.

Documents / Resources

Dell Storage Integration Tools for VMware Version 6.1 Administrator's Guide **DELL**Technologies	**DELL Storage Integration Tools for VMware** [pdf] User Guide Storage Integration Tools for VMware, Storage Integration Tools, Integration Tools