



VMware VIBE plug-in

Snap Creator Framework

NetApp
April 09, 2021

This PDF was generated from https://docs.netapp.com/us-en/snap-creator-framework/administration/concept_requirements_for_vcloud_vapp_backup_and_restore_operations_using_the_vmware_plug_in.html on April 09, 2021. Always check docs.netapp.com for the latest.

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VMware VIBE plug-in

Snap Creator supports the backup of VMware virtual machines and vApps through the VMware VIBE plug-in. The VMware plug-in is an integrated plug-in for both virtual machines with vSphere and vApps with vCloud Director.

You must consider the following when you use the VMware VIBE plug-in:

- The VMware plug-in is supported only on Windows and Linux.

If you are using a non-Windows or non-Linux Snap Creator Server, you need a Snap Creator Windows or Linux agent to run the VMware plug-in.

- Unified Manager server as a proxy is not supported.
- Mount, unmount, and backup operations using Open Systems SnapVault and archive log management are not supported.
- VMware high availability (HA) with the VMware plug-in is not tested and is not supported.
- VMware vCenter Linked Mode with the VMware plug-in is not tested and is not supported.
- The VMware plug-in does not support raw device mapping (RDM).
- The volumes are discovered using automatic detection.

You cannot view a discovered destination volume if it is not in a SnapMirror relationship. You can use the `dpstatus` command to check the SnapMirror relationship. If a SnapMirror relationship does not exist, you must first create the SnapMirror relationship.

- Before you perform restore operations, you must delete all of the VMware snapshot copies.
- After the restore operations are complete, you must run a Snap Creator backup of the restored virtual machines and vApps so that the new environment is cleaned up and all VMware snapshot copies are removed.

If the VMware plug-in cannot clean up VMware snapshot copies and displays an error, you must remove the VMware snapshot copies manually. The VMware plug-in does not guarantee 100% VMware snapshot copy removal. This is a known VMware issue.

- The VMware plug-in supports only 32-bit Snap Creator with a 32-bit Linux system and 64-bit Snap Creator with a 64-bit Linux system.
- The deleted virtual machines cannot be restored.
- The volume restore operation is not supported; only application-defined restore operations are supported.
- The value of the `SC_AGENT_TIMEOUT` parameter should be set to 1800 or higher.
- The default value of the `VIBE_VMWARE_snapshot` parameter (VMware snapshot option) is N.
- If the value of `APP_DEFINED_RESTORE` is Y, then the SnapVault restore operation using the graphical user interface (GUI) is not supported.
- While creating a SnapMirror and SnapVault configuration by using the GUI, you must manually enter the SnapMirror and SnapVault parameters because the SnapMirror and SnapVault relationship is not detected automatically.
- The VMware plug-in discovers the ISO-mounted path as a datastore.

The following table lists the VMware VIBE plug-in parameters, provides the parameter settings, and describes

the parameters.

Parameter	Setting	Description
VIBE_DYNAMIC_VOLUMES_UPDATE	Y or N Default: not set	If this parameter is set to N, dynamic volume update is not performed, which means you have to set the VOLUMES, SNAPVAULT_VOLUMES, SNAPMIRROR_VOLUMES, and NTAP_DFM_DATA_SET parameters manually.
VIBE_NOPING	Default: N	Specifies that Internet Control Message Protocol (ICMP) is not used to ping VMware plug-in or the storage controllers.
VIBE_VCLOUD_IPADDR	N/A	Specifies the IP address or the host name of the vCloud Director that is used for logging in to (vCloud only).
VIBE_VCLOUD_USER	N/A	<p>Specifies the user name to be used for logging in to the vCloud Director (vCloud only). You must set @org or @system (top-level vCloud database).</p> <div style="border-left: 1px solid #ccc; padding-left: 10px; margin-left: 20px;"> <p>The vCloud Director system administrator user name must be used to perform the backup and restore operations. These operations fail if the organization administrator credentials or any other user credentials are used.</p> </div> <p>i</p> <p>Example: <code>administrator@system</code></p>

Parameter	Setting	Description
VIBE_VCLOUD_PASSWD	N/A	Specifies the password that is associated with the specified VIBE_VCLOUD_USER (vCloud only).
VIBE_VCENTER_USER	N/A	Specifies the user name to be used for logging in to vCenter.
VIBE_VCENTER_PASSWD	N/A	Specifies the password that is associated with the specified VIBE_VCENTER_USER.
VIBE_VCLOUD_NAMES	N/A	Lists the organization, virtual data center, and vApp object names that should be backed up (vCloud only). Example: ORG:VDC1,VDC2:VAPP1,VAPP2; ORG2:VDC3:;ORG3::VAPP6
VIBE_VSPHERE_NAMES	N/A	Lists the datastores and virtual machines that should be backed up per vCenter (vSphere only). Example: VCENTER1:DS1:VM1;VCENTER2; DS2,DS3:;VCENTER3::VM4
VIBE_TRIM_VSPHERE_NAMES	N/A	Lists the virtual machines that should be removed from backup per vCenter (vSphere only). Example: VCENTER1:VM99;VCENTER2:VM5, VM12
VIBE_RESTORE_INTERVAL	Default: 30 seconds	Specifies the time between each restore check.
VIBE_RESTORE_TIME	Default: 3600 seconds	Specifies the total time to wait for a complete restore operation to finish.
VIBE_VMWARE_SNAPSHOT	Default: N	Creates a VMware snapshot copies during backup.

Parameter	Setting	Description
VIBE_IGNORE_EXPORTFS=Y or N	Default: N	<p>You must manually add this parameter to the Snap Creator VIBE configuration file.</p> <p>When the value is set to Y, Data ONTAP operating in 7-Mode configurations ignores any exportfs values on the controller. Instead, Data ONTAP maps the volume export path as /vol/datastore_name, where a datastore name is specified for backup. Older environments using vFiler units might use this methodology because the exportfs information of individual datastores is not available from a vFiler unit. Instead, a configuration needs to map the path based on queries to vfiler0.</p>

Related information

[Interoperability Matrix Tool: mysupport.netapp.com/matrix](https://mysupport.netapp.com/matrix)

Requirements for vCloud vApp backup and restore operations using the VMware plug-in

Snap Creator supports the backup of vCloud vApp through the VMware plug-in. vApp and virtual machine backup copies are made by the VMware plug-in through the vCloud Director API and vSphere API, which are invoked on the VMware vCloud Director and VMware vCenter server, respectively.

For vApp backup and restore operations to be successful, you must provide the following details in the configuration file:

- vCloud IP and credentials
- vCloud organizations, virtual data centers (vDCs), and vApp names



If more than one vCenter is attached to vCloud, then the password for the all vCenter servers should be same.

You must consider the following when performing the vCloud backup and restore operations:

- The backup and restore processes for both VMware and vCloud are very similar except for the discovery process, in which vCloud backups require additional discovery of the vCloud Director metadata using representational state transfer (REST) APIs.
- You should provide details of the vCloud with the organizations, vDCs, and vApps to be backed up.

- If a vDC is listed, all the vApps in the vDC are backed up.
- vCloud module discovers virtual machines associated with any vApp that must be backed up and puts them on a backup list.
- If a vApp selected for backup is contained within an organization or a vDC that is also selected for backup, the vApp is backed up only once.



For Virtual Machine File System (VMFS) restore operations using the VMware plug-in, there must be enough space in the volume to create a LUN clone that is equal to the size of the LUN.

Virtual machine backup and restore by using the VMware plug-in

Snap Creator supports the backup of VMware virtual machines through the VMware plug-in. Virtual machine backups are taken through the vSphere API on the VMware vCenter server.

For virtual machine backup, you must provide the following details in the configuration file:

- vCenter IP or host name and credentials
- vSphere virtual machines and datastore names



Snap Creator discovers vCenter only if vCenter is configured on the default port (443).

For the restore operation, you should provide the backup parameters and the Snapshot copy name.

Consider the following when performing the VMware backup and restore processes:

- If a virtual machine is listed and is not available, the plug-in displays an error message. It will not be able to restore a lost virtual machine even if it is backed up.
- If a datastore is listed, all the virtual machines in the datastore are backed up.
- Only the listed virtual machines or virtual machines located in the datastores specified are backed up.
- If a virtual machine selected for backup is contained within a datastore that is also selected for backup, it will be backed up only once.
- The VMware plug-in supports both Network File System (NFS) and VMware Virtual Machine File System (VMFS) datastores.
 - Virtual machine restores on an NFS datastore use Single File SnapRestore (SFSR) on the storage system, which avoids host copies.
 - To restore a virtual machine on a VMFS datastore, perform the following steps:
 - i. Use FlexClone or LUN clone of the LUN contained in a specific restore Snapshot copy.
 - ii. Map it to the cluster.
 - iii. Use vCenter API calls to copy contents from the Snapshot copy of the VMFS datastore to the original VMFS datastore.

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