



Data Protector for Cloud Workloads 7.2.0 Support Matrix

July 2025

Support Matrix

Virtualization Platforms


Nutanix AHV

Supported backup strategies: Disk attachment

Supported versions	5.5, 5.6, 5.8, 5.9, 5.10, 5.11, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 6.0, 6.1, 6.5, 6.6, 6.7, 6.8
The last snapshot is kept on the hypervisor for incremental backups	Yes
Access to hypervisor OS required	No
Proxy VM required	Yes

Full backup	Supported
Incremental backup	Supported
Restore	Supported
File-level restore	Supported
VM disk exclusion	Supported
Quiesced snapshots	Supported
Snapshots management	Supported
Pre/post command execution	Supported
Access to VM disk backup over iSCSI	Supported
VM name-based policy assignment	Supported
VM tag-based policy assignment	Supported *
Power-on VM after restore	Supported

* When using Prism Central

 Backup of virtual machines with vTPM enabled is not supported

Proxmox VE

Supported backup strategies: Export storage repositories, SSH transfer

	Export storage repository	SSH transfer
Supported versions	5.2, 5.3, 5.4, 6.0, 6.1, 6.2, 6.3, 6.3, 6.4, 7.0, 7.1, 7.2, 7.3, 7.4, 8.0, 8.1, 8.2	5.2, 5.3, 5.4, 6.0, 6.1, 6.2, 6.3, 6.3, 6.4, 7.0, 7.1, 7.2, 7.3, 7.4, 8.0, 8.1, 8.2
The last snapshot is kept on the hypervisor for incremental backups	Yes	Yes
Access to hypervisor OS required	Yes	Yes
Proxy VM required	Yes	No

	Export storage repository	SSH transfer
Full backup	Supported	Supported
Incremental backup	Not supported	Supported
Restore	Supported	Supported
File-level restore	Supported	Supported
VM disk exclusion	Not supported	Supported
Quiesced snapshots	Supported	Supported
Snapshots management	Supported	Supported
Pre/post command execution	Supported	Supported

Access to VM disk backup over iSCSI	Not supported	Supported
VM name-based policy assignment	Supported	Supported
VM tag-based policy assignment	Not supported	Not supported
Power-on VM after restore	Supported	Supported


OpenNebula

Supported backup strategies: CBT

Supported versions	6.6, 6.7, 6.8, 6.9
The last snapshot is kept on the hypervisor for incremental backups	No
Access to hypervisor OS required	No
Proxy VM required	Yes

Full backup	Supported
Incremental backup	Supported
Restore	Supported
File-level restore	Supported
VM disk exclusion	Supported
Quiesced snapshots	Supported
Snapshots management	Supported
Pre/post command execution	Supported
Access to VM disk backup over iSCSI	Supported
VM name-based policy assignment	Supported

VM tag-based policy assignment	Supported
Power-on VM after restore	Not Supported (always on)

 During the data export phase, the hypervisor may experience higher CPU usage

OpenStack

Supported backup strategies: Disk attachment, Image transfer, CBT

	Disk attachment	CBT	SSH Transfer
Supported versions	Queens, Rocky, Stein, Train, Ussuri, Victoria, Wallaby, Xena, Yoga, Zed, Antelope, Bobcat, Caracal	Queens, Rocky, Stein, Train, Ussuri, Victoria, Wallaby, Xena, Yoga, Zed, Antelope, Bobcat, Caracal	Queens, Rocky, Stein, Train, Ussuri, Victoria, Wallaby, Xena, Yoga, Zed, Antelope, Bobcat, Caracal
The last snapshot is kept on the hypervisor for incremental backups	Yes	No	Yes
Access to hypervisor OS required	No	No	Yes
Proxy VM required	Yes	Yes	No

	Disk attachment	CBT	SSH Transfer
Full backup	Supported *	Supported	Supported
Incremental backup	Not supported	Supported	Supported
Restore	Supported	Supported	Supported
File-level restore	Supported	Supported	Supported

VM disk exclusion	Supported	Supported	Supported
Quiesced snapshots	Supported **	Supported **	Supported **
Snapshots management	Supported ***	Supported ***	Not supported
Pre/post command execution	Supported	Supported	Supported
Access to VM disk backup over iSCSI	Supported	Supported	Supported ****
VM name-based policy assignment	Supported	Supported	Supported
VM tag-based policy assignment	Supported	Supported	Supported
Power-on VM after restore	Not supported (always on)	Not supported (always on)	Not supported (always on)

* *Ceph RBD volumes only*

** *Hypervisor dependent*

*** *Without snapshot revert*

**** *RAW/LVM disks only*

Oracle Linux Virtualization Manager


Supported backup strategies: Disk attachment, Image transfer, CBT

	Disk attachment	Image transfer	CBT
Supported versions	4.3, 4.4, 4.5	4.3, 4.4, 4.5	4.4, 4.5
The last snapshot is kept on the hypervisor for incremental backups	No	Yes	No

Access to hypervisor OS required	No	No	No
Proxy VM required	Yes	No	No

	Disk attachment	Image Transfer	CBT
Full backup	Supported	Supported	Supported
Incremental backup	Not supported	Supported	Supported
Restore	Supported	Supported	Supported
File-level restore	Supported	Supported	Supported
VM disk exclusion	Supported	Supported	Supported
Quiesced snapshots	Supported	Supported	Supported
Snapshots management	Supported	Supported	Supported
Pre/post command execution	Supported	Supported	Supported
Access to VM disk backup over iSCSI	Supported	Supported *	Supported
VM name-based policy assignment	Supported	Supported	Supported
VM tag-based policy assignment	Supported	Supported	Supported
Power-on VM after restore	Supported	Supported	Supported

* Only for RAW disk types

 Direct LUN disks are not supported

Oracle VM

Supported backup strategies: Export storage repository

Supported versions	3.4
The last snapshot is kept on the hypervisor for incremental backups	n/a
Access to hypervisor OS required	No
Proxy VM required	No

Full backup	Supported
Incremental backup	Not supported
Restore	Supported
File-level restore	Supported
VM disk exclusion	Supported
Quiesced snapshots	Not supported
Snapshots management	Not supported
Pre/post command execution	Not supported
Access to VM disk backup over iSCSI	Supported
VM name-based policy assignment	Not supported
VM tag-based policy assignment	Supported
Power-on VM after restore	Not Supported

oVirt

Supported backup strategies: Disk attachment, Image transfer, CBT

	Disk attachment	Image transfer	CBT
Supported versions	4.0, 4.1, 4.2, 4.3, 4.4, 4.5	4.3, 4.4, 4.5	4.4, 4.5
The last snapshot is kept on the hypervisor for incremental backups	No	Yes	No
Access to hypervisor OS required	No	No	No
Proxy VM required	Yes	No	No

	Disk attachment	Image Transfer	CBT
Full backup	Supported	Supported	Supported
Incremental backup	Not supported	Supported	Supported
Restore	Supported	Supported	Supported
File-level restore	Supported	Supported	Supported
VM disk exclusion	Supported	Supported	Supported
Quiesced snapshots	Supported	Supported	Supported
Snapshots management	Supported	Supported	Supported
Pre/post command execution	Supported	Supported	Supported
Access to VM disk backup over iSCSI	Supported	Supported *	Supported
VM name-based policy assignment	Supported	Supported	Supported
VM tag-based policy assignment	Supported	Supported	Supported

Power-on VM after restore	Supported	Supported	Supported
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** Only for RAW disk types*

Red Hat Virtualization

Supported backup strategies: Disk attachment, Image transfer, CBT

	Disk attachment	Image transfer	CBT
Supported versions	4.0, 4.1, 4.2, 4.3	4.3, 4.4	4.4
The last snapshot is kept on the hypervisor for incremental backups	No	Yes	No
Access to hypervisor OS required	No	No	No
Proxy VM required	Yes	No	No

	Disk attachment	Image Transfer	CBT
Full backup	Supported	Supported	Supported
Incremental backup	Not supported	Supported	Supported
Restore	Supported	Supported	Supported
File-level restore	Supported	Supported	Supported
VM disk exclusion	Supported	Supported	Supported
Quiesced snapshots	Supported	Supported	Supported
Snapshots management	Supported	Supported	Supported

Pre/post command execution	Supported	Supported	Supported
Access to VM disk backup over iSCSI	Supported	Supported *	Supported
VM name-based policy assignment	Supported	Supported	Supported
VM tag-based policy assignment	Supported	Supported	Supported
Power-on VM after restore	Supported	Supported	Supported

** Only for RAW disk types*

SC//Platform

Supported backup strategies: Export storage domain, disk attachment

	Export storage domain	Disk attachment
Supported versions	8.9	8.9
The last snapshot is kept on the hypervisor for incremental backups	No	Yes
Access to hypervisor OS required	No	No
Proxy VM required	No	Yes

	Export storage repository	SSH transfer
Full backup	Supported	Supported
Incremental backup	Not supported	Supported
Restore	Supported	Supported

File-level restore	Not supported	Supported
VM disk exclusion	Supported	Supported
Quiesced snapshots	Not supported	Not supported
Snapshots management	Supported	Supported
Pre/post command execution	Supported	Supported
Access to VM disk backup over iSCSI	Supported	Supported
VM name-based policy assignment	Supported	Supported
VM tag-based policy assignment	Supported	Supported
Power-on VM after restore	Supported	Supported

Virtuozzo

Supported backup strategies: Disk attachment

Supported versions	4.7, 5.0, 5.2, 5.3, 5.4, 6.0, 6.1, 6.2
The last snapshot is kept on the hypervisor for incremental backups	Yes
Access to hypervisor OS required	No
Proxy VM required	Yes
Full backup	Supported
Incremental backup	Supported
Restore	Supported
File-level restore	Supported

VM disk exclusion	Supported
Quiesced snapshots	Supported *
Snapshots management	Supported **
Pre/post command execution	Supported
Access to VM disk backup over iSCSI	Supported
VM name-based policy assignment	Supported
VM tag-based policy assignment	Supported
Power-on VM after restore	Not Supported (always on)

* *Hypervisor dependent*

** *Without snapshot revert*

XCP-ng

Supported backup strategies: Single image (XVA), CBT

	Single image (XVA)	CBT
Supported versions	7.4, 7.5, 7.6, 8.0, 8.1, 8.2, 8.3	7.4, 7.5, 7.6, 8.0, 8.1, 8.2, 8.3
The last snapshot is kept on the hypervisor for incremental backups	Yes	Yes
Access to hypervisor OS required	No	Yes
Proxy VM required	No	No

	Single image (XVA)	CBT
Full backup	Supported	Supported
Incremental backup	Supported *	Supported

Restore	Supported	Supported
File-level restore	Not supported	Supported
VM disk exclusion	Not supported	Supported
Quiesced snapshots	Supported	Supported
Snapshots management	Supported	Supported
Pre/post command execution	Supported	Supported
Access to VM disk backup over iSCSI	Not supported	Supported
VM name-based policy assignment	Supported	Supported
VM tag-based policy assignment	Supported	Supported
Power-on VM after restore	Supported	Supported

** Not supported when using a synthetic backup destination*

XenServer (Citrix Hypervisor)

Supported backup strategies: Single image (XVA), CBT

	Single image (XVA)	CBT
Supported versions	6.5, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 8.0, 8.1, 8.2	6.5, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 8.0, 8.1, 8.2
The last snapshot is kept on the hypervisor for incremental backups	Yes	Yes
Access to hypervisor OS required	No	Yes
Proxy VM required	No	No

	Single image (XVA)	CBT
Full backup	Supported	Supported
Incremental backup	Supported	Supported *
Restore	Supported	Supported
File-level restore	Not supported	Supported
VM disk exclusion	Not supported	Supported
Quiesced snapshots	Supported	Supported
Snapshots management	Supported	Supported
Pre/post command execution	Supported	Supported
Access to VM disk backup over iSCSI	Not supported	Supported
VM name-based policy assignment	Supported	Supported
VM tag-based policy assignment	Supported	Supported
Power-on VM after restore	Supported	Supported

** Requires XenServer 7.3 or higher*

Containers

Kubernetes

Supported backup strategies: Helper pod, Ceph RBD

	Helper pod	Ceph RBD
Minimal version	1.10	1.10

The last snapshot is kept on the system for incremental backups	Yes	Yes
Access to OS required	No	No
Proxy VM required	No	No

	Helper pod	Ceph RBD
Full backup	Supported	Supported
Incremental backup	Not supported	Supported *
Restore	Supported	Supported
File-level restore	Not supported	Supported *
Volume exclusion	Supported	Supported
Quiesced snapshots	Supported **	Supported **
Snapshots management	Not supported	Not supported
Pre/post command execution	Supported ***	Supported ***
Access to VM disk backup over iSCSI	Not supported	Supported *
Name-based policy assignment	Supported	Supported
Tag-based policy assignment	Supported	Supported
Power-on after restore	Supported	Supported
StatefulSet	Supported	Supported

* When using Ceph RBD as Persistent Volume

** Deployment pause

*** Only 'post'

Proxmox VE

Supported backup strategies: Export storage repository

Supported versions	5.2, 5.3, 5.4, 6.0, 6.1, 6.2, 6.3, 6.3, 6.4, 7.0, 7.1, 7.2, 7.3, 7.4, 8.0, 8.1, 8.2
The last snapshot is kept on the hypervisor for incremental backups	Yes
Access to hypervisor OS required	No
Proxy VM required	Yes

Full backup	Supported
Incremental backup	Supported
Restore	Supported
File-level restore	Supported
VM disk exclusion	Supported
Quiesced snapshots	Supported
Snapshots management	Supported
Pre/post command execution	Supported
Access to VM disk backup over iSCSI	Supported
VM name-based policy assignment	Supported
VM tag-based policy assignment	Supported *
Power-on after restore	Supported

** When using Prism Central*

Red Hat OpenShift

Supported backup strategies: Helper pod, Ceph RBD

	Helper pod	Ceph RBD
Minimal version	4.10	4.10
The last snapshot is kept on the system for incremental backups	Yes	Yes
Access to OS required	No	No
Proxy VM required	No	No

	Helper pod	Ceph RBD
Full backup	Supported	Supported
Incremental backup	Not supported	Supported *
Restore	Supported	Supported
File-level restore	Not supported	Supported *
Volume exclusion	Supported	Supported
Quiesced snapshots	Supported **	Supported **
Snapshots management	Not supported	Not supported
Pre/post command execution	Supported ***	Supported ***
Access to VM disk backup over iSCSI	Not supported	Supported *
Name-based policy assignment	Supported	Supported
Tag-based policy assignment	Supported	Supported
Power-on after restore	Supported	Supported
StatfuSet	Supported	Supported

** When using Ceph RBD as Persistent Volume*

*** Deployment pause*

**** Only 'post'*

Cloud

Amazon EC2

Supported backup strategies: Disk attachment, CBT

	Disk attachment	CBT
The last snapshot is kept on the hypervisor for incremental backups	No	No
Access to hypervisor OS required	No	No
Proxy VM required	Yes	Yes

	Disk attachment	CBT
Full backup	Supported	Supported
Incremental backup	Not supported	Supported
Restore	Supported	Supported
File-level restore	Supported	Supported
VM disk exclusion	Supported	Supported
Quiesced snapshots	Not supported	Not supported
Snapshots management	Supported	Supported

Pre/post command execution	Supported	Supported
Access to VM disk backup over iSCSI	Supported	Supported
VM name-based policy assignment	Supported	Supported
VM tag-based policy assignment	Supported	Supported
Power-on VM after restore	Supported	Supported

Microsoft Azure

Supported backup strategies: Disk attachment, CBT

	Disk attachement	CBT
The last snapshot is kept on the hypervisor for incremental backups	No	No
Access to hypervisor OS required	No	No
Proxy VM required	Yes	Yes

	Disk attachement	CBT
Full backup	Supported	Supported
Incremental backup	Not supported	Supported
Restore	Supported	Supported
File-level restore	Supported	Supported
VM disk exclusion	Supported	Supported
Quiesced snapshots	Not supported	Not supported

Snapshots management	Not supported	Not supported
Pre/post command execution	Supported	Supported
Access to VM disk backup over iSCSI	Supported	Supported
VM name-based policy assignment	Supported	Supported
VM tag-based policy assignment	Supported	Supported
Power-on VM after restore	Not supported (always on)	Not supported (always on)

Microsoft 365

Mailbox messages

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another account	Supported
Local restore (raw data)	Supported
Restore to PST	Supported

Mailbox messages archive

Full backup	Supported
Incremental backup	Supported

Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another account	Supported
Local restore (raw data)	Supported
Restore to PST	Supported

Contacts

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another account	Supported
Local restore (raw data)	Supported
Restore to PST	Not supported

Calendars

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another calendar	Supported
Restore to another account	Supported

Local restore (raw data)	Supported
Restore to PST	Not supported

OneDrive for Business

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another account	Supported
Local restore (raw data)	Supported

Sharepoint sites

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another site	Not supported
Local restore (raw data)	Supported

Sharepoint pages

Full backup	Supported
Incremental backup	Supported

Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another site	Not supported
Local restore (raw data)	Supported

Sharepoint list items

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another site	Not supported
Local restore (raw data)	Supported

Sharepoint document libraries

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another path	Supported
Restore to another site	Not supported
Local restore (raw data)	Supported

Teams channel

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Not supported
Restore to another team	Not supported
Local restore (messages history)	Supported

Teams 1on1 chat

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Not supported
Restore to another team	Not supported
Local restore (messages history)	Supported

Teams files

Full backup	Supported
Incremental backup	Supported
Restore	Supported
Single item restore	Supported
Restore to another team	Not supported
Local restore (raw data)	Supported

Storware Backup and Recovery uses [Microsoft Teams Export API](#) to export Teams data.

Utilizing the Microsoft Teams Export API generates [additional costs ↗](#) for Microsoft tenant.

Storage Providers

Ceph RBD

Source type: RBD Volume (RBD Export/RBD-NBD).

Requires Red Hat Ceph Storage version 4.0 or newer or Ceph v14.2.0 Nautilus or newer

Full backup	Supported
Incremental backup	Supported (RBD snap-diff)
Restore	Supported
Single item restore	Supported
Access to files backup over iSCSI	Supported
Name-based policy assignment	Supported

Nutanix Files (AFS)

Source type: NFS and Samba shares

Full backup	Supported
Incremental backup	Supported (CFT API)
Restore	Supported
Single item restore	Supported
Access to files backup over iSCSI	Supported

Name-based policy assignment	Supported
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Nutanix Volume Groups

Source type: Disk attachment

Full backup	Supported
Incremental backup	Supported (CBT API)
Restore	Supported
Single item restore	Supported
Snapshot management	Supported
Access to files backup over iSCSI	Supported
Name-based policy assignment	Supported

Ceph RBD

Source type: RBD Volume (RBD Export/RBD-NBD).

Requires Red Hat Ceph Storage version 4.0 or newer or Ceph v14.2.0 Nautilus or newer

Full backup	Supported
Incremental backup	Supported (RBD snap-diff)
Restore	Supported
Single item restore	Supported
Access to files backup over iSCSI	Supported
Name-based policy assignment	Supported

Backup destinations

Filesystem

Generic filesystem

Supported version	n/a
Syntetic backup	Not supported
Random Access	Supported
Deduplication	Supported *
Encryption	Supported
Pre/post command execution	Supported

** When using VDO*

XFS filesystem

Supported version	Linux 4.15 and newer, xfsprogs 4.17 and newer
Syntetic backup	Supported
Random Access	Supported
Deduplication	Supported *
Encryption	Not supported
Pre/post command execution	Supported

** When using VDO*

Object storages

Amazon S3/S3-compatible

Syntetic backup	Not supported
Random Access	Not supported
Deduplication	n/a
Encryption	Supported
Pre/post command execution	Supported

Impossible Cloud

Syntetic backup	Not supported
Random Access	Not supported
Deduplication	n/a
Encryption	Supported
Pre/post command execution	Supported

Google Cloud Storage

Syntetic backup	Not supported
Random Access	Not supported
Deduplication	n/a
Encryption	Supported
Pre/post command execution	Supported

Microsoft Azure Blob Storage

Syntetic backup	Not supported
Random Access	Not supported
Deduplication	n/a
Encryption	Supported
Pre/post command execution	Supported

OpenStack Swift

Syntetic backup	Not supported
Random Access	Not supported
Deduplication	n/a
Encryption	Supported
Pre/post command execution	Supported

Enterprise backup providers

OpenText Data Protector

Supported version	25.1
Syntetic backup	Not supported
Random Access	Not supported
Deduplication	Supported
Encryption	Provider dependent
Pre/post command execution	Supported

Integration plugins

Red Hat Virtualization UI plugin	oVirt we admin 4.3 and newer
oVirt UI Plugin	oVirt we admin 4.3 and newer
Oracle Linux Virtualization Manager UI Plugin	oVirt we admin 4.3 and newer
OpenStack UI Plugin	Horizon 17.0.0 and newer

Platform Requirements

System requirements

Operating System

CentOS

- CentOS Linux Stream 8
- CentOS Linux Stream 9

Red Hat Enterprise Linux

- Red Hat Enterprise Linux 8.8
- Red Hat Enterprise Linux 8.9
- Red Hat Enterprise Linux 8.10
- Red Hat Enterprise Linux 9.0
- Red Hat Enterprise Linux 9.1
- Red Hat Enterprise Linux 9.2
- Red Hat Enterprise Linux 9.3
- Red Hat Enterprise Linux 9.4
- Red Hat Enterprise Linux 9.5

SUSE Linux Enterprise Server

- SUSE Linux Enterprise Server 15 SP3
- SUSE Linux Enterprise Server 15 SP4
- SUSE Linux Enterprise Server 15 SP5



- Using Red Hat Enterprise Linux requires an active subscription.

- Minimal installation is required.

Supported browsers

Administrative UI supports the following browsers. We recommend that you use the most up-to-date browser that's compatible with your operating system.


- Chrome (latest version)

MariaDB

Data Protector for Cloud Workloads server requires a MariaDB database server.

- Minimum supported MariaDB version: 10.6
- Latest supported MariaDB version: 10.11

We recommend installing MariaDB from the official [repository](#) ↗.

 If you need to install MariaDB packages without accessing an external repository during installation you also can download RPMs and install them manually as described [here](#) ↗

Hardware Requirements

Minimum requirements for all-in-one installation (server and node on the same host):

- 64-bit 8 cores processor
- 10 GB RAM
- 20GB free disk space for the operating system and installation
- Free disk space for data staging

- You can estimate the free space requirement using the following equation:

$$(\text{Size of the biggest virtual machine}) * (\text{number of parallel backup threads})$$

Minimum requirements for server (standalone installation):

- 64-bit 4 cores processor
- 4 GB RAM
- 20GB free disk space for the operating system and Storware Backup and Recovery installation

Minimum requirements for node (standalone installation):

- 64-bit 4 cores processor
- 6 GB RAM
- 20GB free disk space for the operating system and installation
- Free disk space for data staging
 - You can estimate the free space requirement using the following equation:

$$(\text{Size of the biggest virtual machine}) * (\text{number of parallel backup threads})$$

Network requirements

Communication between node and server

Source	Destination	Ports	Description
Node	Server	443/tcp or 8181/tcp	Node ↔ Server communication over HTTPS (port 443 or 8181)
		111/tcp, 111/UDP, 2049/tcp, 2049/UDP, ports	

Server

Node

specified in
`/etc/sysconfig/nfs`
- variables
`MOUNTD_PORT` (TCP
and UDP),
`STATD_PORT` (TCP
and UDP),
`LOCKD_TCP` (TCP),
`LOCKD_UDP` (UDP)

NFS access to
browse mountable
backups and logs
from administrative
portal (using IP that
is detected as the
source IP - shown
in the Node list in
the portal)

Network consideration

- Depending on where the node is located you need to verify if data will not pass via low-bandwidth links.
- Access to the internet network from the node may be required in the following scenarios:
 - Installation, when using the external repositories
 - Backup and restore of Amazon EC2, Google Cloud Platform, Azure Cloud and M365
- Node requires connectivity with backup destinations
- Node needs connectivity with the Hypervisor or Hypervisor Manager.
- If a netcat transfer is used for Red Hat Virtualization/oVirt/Oracle Linux VM/Proxmox VE/KVM stand-alone environments - **16000-16999** ports must be reachable from the hypervisors to the node which is responsible for those hypervisors.

Nutanix AHV

Disk attachment

Connection URL: `https://PRISM_HOST:9440/api/nutanix/v3` (Prism Central or Prism Elements)

Note: when connecting via Prism Central, the same credentials will be used to access all Prism Elements

Source	Destination	Ports	Description
Node	Prism Elements (and optionally Prism Central if used)	9440/tcp	API access to the Nutanix manager

Network Ports

OpenStack

Disk attachment

Connection URL: `https://KEYSTONE_HOST:5000/v3`

Source	Destination	Ports	Description
Node	Keystone, Nova, Glance, Cinder	ports that were defined in endpoints for OpenStack services	API access to the OpenStack management services - using endpoint type that has been specified in hypervisor manager details
Node	Ceph monitors	3300/tcp, 6789/tcp	if Ceph RBD is used as the backend storage - used to collect changed- blocks lists from Ceph

SSH transfer

Connection URL: `https://KEYSTONE_HOST:5000/v3`

Note: You also must provide SSH credentials to all hypervisors that have been detected during inventory sync

Source	Destination	Ports	Description
Node	Hypervisor	22/tcp	SSH access
Hypervisor	Node	netcat port range defined in node configuration - by default 16000-16999/tcp	optional netcat access for data transfer
Node	Ceph monitors	3300/tcp, 6789/tcp, 10809/tcp	if Ceph RBD is used as the backend storage - used for data transfer over NBD

OpenNebula

Disk attachment

Connection URL: `https://MANAGER_HOST`

Source	Destination	Ports	Description
Node	Manager Host	XML-RPC API port - 2633/tcp by default	API access to the OpenNebula management services

oVirt/RHV/OLVM

Export storage domain

Connection URL: `https://RHV_MGR_HOST/ovirt-engine/api`

Source	Destination	Ports	Description
Node	oVirt/RHV/OLVM manager	443/tcp	oVirt/RHV/OLVM API access
oVirt/RHV/OLVM host selected in export storage domain configuration	Node	<p>If Node is hosting staging space: 111/tcp, 111/UDP, 2049/tcp, 2049/UDP, ports specified in <code>/etc/sysconfig/nfs</code> - variables <code>MOUNTD_PORT</code> (TCP and UDP), <code>STATD_PORT</code> (TCP and UDP), <code>LOCKD_TCPPORT</code> (TCP), <code>LOCKD_UDPPORT</code> (UDP), otherwise check the documentation of your NFS storage provider</p>	if staging space (export storage domain) is hosted on the Node - NFS access
Node and oVirt/RHV/OLVM host selected in export storage domain configuration	shared NFS storage	check the documentation of your NFS storage provider	if staging space (export storage domain) is hosted on the shared storage - NFS access

Disk attachment

Connection URL: `https://MANAGER_HOST/ovirt-engine/api`

Source	Destination	Ports	Description
Node	oVirt/RHV/OLVM manager	443/tcp	oVirt/RHV/OLVM API access

Disk Image Transfer

Connection URL: `https://MANAGER_HOST/ovirt-engine/api`

Source	Destination	Ports	Description
Node	oVirt/RHV/OLVM manager	443/tcp	oVirt/RHV/OLVM API access
Node	oVirt/RHV/OLVM hypervisor	54322/tcp	oVirt/RHV/OLVM ImageIO services - for data transfer (primary source)
Node	oVirt/RHV/OLVM manager	54323/tcp	oVirt/RHV/OLVM ImageIO services - for data transfer (fallback to ImageIO Proxy)

SSH Transfer

Connection URL: `https://MANAGER_HOST/ovirt-engine/api`

Note: You also must provide SSH credentials to all hypervisors that have been detected during inventory sync

Source	Destination	Ports	Description
Node	oVirt/RHV/OLVM manager	443/tcp	oVirt/RHV/OLVM API access
Node	oVirt/RHV/OLVM hypervisor	22/tcp	SSH access for data transfer
oVirt/RHV/OLVM hypervisor	Node	netcat port range defined in node configuration - by default 16000-16999/tcp	optional netcat access for data transfer

Change-Block Tracking

Connection URL: `https://MANAGER_HOST/ovirt-engine/api`

Source	Destination	Ports	Description
Node	oVirt/RHV/OLVM manager	443/tcp	oVirt/RHV/OLVM API access
Node	oVirt/RHV/OLVM hypervisor	54322/tcp	oVirt/RHV/OLVM ImageIO services - for data transfer (primary source)
Node	oVirt/RHV/OLVM manager	54323/tcp	oVirt/RHV/OLVM ImageIO services - for data transfer (fallback to ImageIO Proxy)

Oracle VM

Export storage domain

Connection URL: `https://MANAGER_HOST:7002`

Source	Destination	Ports	Description
Node	OVM manager	7002/tcp	OVM API access
Hypervisor	Node	If Node is hosting staging space: 111/tcp, 111/UDP, 2049/tcp, 2049/UDP, ports specified in <code>/etc/sysconfig/nfs</code> - variables <code>MOUNTD_PORT</code> (TCP and UDP), <code>STATD_PORT</code> (TCP and UDP), <code>LOCKD_TCPPORT</code> (TCP), <code>LOCKD_UDPPORT</code>	if staging space (export storage repository) is hosted on the Node - NFS access

		(UDP), otherwise check the documentation of your NFS storage provider	
Node and hypervisor	shared NFS storage	check the documentation of your NFS storage provider	if staging space (export storage repository) is hosted on the shared storage - NFS access

Citrix XenServer/xcp-ng

Note: all hosts in the pool must be defined

Single image (XVA-based)

Source	Destination	Ports	Description
Node	Hypervisor	443/tcp	API access (for data transfer management IP is used, unless <code>transfer NIC</code> parameter is configured in hypervisor details)

Changed-Block Tracking

Source	Destination	Ports	Description
Node	Hypervisor	443/tcp	API access (for data transfer management IP is used, unless <code>transfer NIC</code> parameter is

			configured in hypervisor details)
Node	Hypervisor	10809/tcp	NBD access (data transfer IP is returned by hypervisor)

KVM/Xen stand-alone

SSH transfer

Source	Destination	Ports	Description
Node	Hypervisor	22/tcp	SSH access
Hypervisor	Node	netcat port range defined in node configuration - by default 16000-16999/tcp	optional netcat access for data transfer
Node	Ceph monitors	3300/tcp, 6789/tcp, 10809/tcp	if Ceph RBD is used as the backend storage - used for data transfer over NBD

Proxmox VE

Export storage repository

Source	Destination	Ports	Description
Node	Hypervisor	22/tcp	SSH access
		If Node is hosting staging space: 111/tcp, 111/UDP, 2049/tcp, 2049/UDP, ports specified in	

Hypervisor	Node	<code>/etc/sysconfig/nfs</code> <code>s</code> - variables <code>MOUNTD_PORT</code> (TCP and UDP), <code>STATD_PORT</code> (TCP and UDP), <code>LOCKD_TCPPORT</code> (TCP), <code>LOCKD_UDPPORT</code> (UDP), otherwise check the documentation of your NFS storage provider	if staging space (export storage domain) is hosted on the Node - NFS access
Node and hypervisor	shared NFS storage	check the documentation of your NFS storage provider	if staging space (export storage domain) is hosted on the shared storage - NFS access

SSH transfer

Source	Destination	Ports	Description
Node	Hypervisor	22/tcp	SSH access
Hypervisor	Node	netcat port range defined in node configuration - by default 16000-16999/tcp	optional netcat access for data transfer

Microsoft 365

Source	Destination	Ports	Description
Node	Microsoft 365	443/tcp	Microsoft 365 API access

You can find more detailed description about Office 365 URLs and IP address ranges on [this page ↗](#).

To successfully synchronize M365 user account, it must fulfill following requirements:

- has an email,
- is not filtered by location, country or office location (user filter in UI),
- field `user type` is set to `Member`,
- has a license or is a shared mailbox.

Security Requirements

User Permissions

User `vprotect` must be a member of group "disk".

Sudo privileges are required for the following commands:

Data Protector for Cloud Workloads Node:

- `/usr/bin/targetcli`
- `/usr/sbin/exportfs`
- `/usr/sbin/kpartx`
- `/usr/sbin/dmsetup`
- `/usr/bin/qemu-nbd`
- `/usr/bin/guestmount`
- `/usr/bin/fusermount`
- `/bin/mount`
- `/bin/umount`
- `/usr/sbin/parted`
- `/usr/sbin/nbd-client`
- `/usr/bin/tee`

- `/opt/vprotect/scripts/vs/privileged.sh`
- `/usr/bin/yum`
- `/usr/sbin/mkfs.xfs`
- `/usr/sbin/fstrim`
- `/usr/sbin/xfs_growfs`
- `/usr/bin/docker`
- `/usr/bin/rbd`
- `/usr/bin/chown`
- `/usr/sbin/nvme`
- `/bin/cp`
- `/sbin/depmod`
- `/usr/sbin/modprobe`
- `/bin/bash`
- `/usr/local/sbin/nbd-client`
- `/bin/make`

Data Protector for Cloud Workloads Server:

- `/opt/vprotect/scripts/application/vp_license.sh`
- `/bin/umount`
- `/bin/mount`

SELinux

PERMISSIVE - currently it interferes with the mountable backups (file-level restore) mechanism. Optionally can be changed to ENFORCING if the file-level restore is not required.