# HYCU Data Protection for Enterprise Clouds

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**HYCU®**

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# Source environments

This section provides support information for source environments.

## Nutanix AOS

The following Nutanix AOS versions are compatible with HYCU:

| Nutanix AOS version[a] | Supported |
|---|---|
| 5.15 | ✓ |
| 5.20[b] | ✓ |
| 6.0 | ✓ |

[a] HYCU supports AHV and ESXi.
[b] Protecting virtual machines with secure boot enabled on a Nutanix AHV cluster is supported with this AOS version or later.

## VMware vSphere

The following VMware vSphere versions are compatible with HYCU:

| VMware vSphere version[ab] | Supported |
|---|---|
| 6.5 | ✓ |
| 6.7 | ✓ |
| 7.0 | ✓ |

[a] Both your vCenter Server and ESXi hosts must be running the supported version.
[b] The supported hardware versions of virtual machines in a vSphere environment are 4 and later.

## Nutanix Files

The following Nutanix Files versions are compatible with HYCU:

| Nutanix Files version | Notes |
|---|---|
| 3.7.0–3.7.3.1 | • Both SMB and NFS protocols are supported. |
| 3.8.0–3.8.1.3 | • For the NFS protocol, the None and System |
| 4.0.0–4.0.0.1 | authentication methods are supported. |

# Virtual machines

This section provides support information for virtual machines.

## Virtual machine guest operating systems

HYCU can perform the backup and restore of any virtual machine regardless of the operating system that is running on it, whereas restore of applications and individual files is available only for the following virtual machine guest operating systems:

| Virtual machine guest operating system | Notes |
|---|---|
| Windows Server 2012<br>Windows Server 2012 R2<br>Windows Server 2016<br>Windows Server 2019 | • Dynamic disks are not supported.<br>• Windows Storage Spaces (WSS) is not supported.<br>• Windows Failover Cluster and Cluster Shared Volumes are supported.<br>• Restoring individual files from volumes with enabled data deduplication is not supported.<br>• WinRM must be enabled and configured by using the `winrm quickconfig` command. |
| Windows 8 (64-bit)<br>Windows 8.1 (64-bit)<br>Windows 10 (64-bit) | • Dynamic disks are not supported.<br>• Windows Storage Spaces (WSS) is not supported.<br>• Application-aware backup is not supported.<br>• WinRM must be enabled and configured by using the `winrm quickconfig` command.<br>• *For migrating virtual machines to cloud:* Windows PowerShell 4.0 must be installed. |
| Linux | • All versions with the supported file systems are supported. For details, see "Virtual machine file systems" on the next page.<br>• Standard LVM volumes and thin-provisioned LVM volumes are supported. Linux Cluster resource managers are not supported.<br>• Disks without partitions are not supported.<br>• Access to the virtual machine through SSH must be enabled.<br>• *For migrating virtual machines to cloud:* The following Linux |

| | operating systems are supported:<br>• CentOS 7.x and 8.x<br>• Oracle Linux 7.x and 8.x<br>• Red Hat Enterprise Linux 7.x and 8.x<br>• SUSE Linux Enterprise Server 12 and 15 |
|---|---|

# Virtual machine file systems

HYCU can perform the backup and restore of any virtual machine regardless of the file systems used on the virtual machine, whereas restore of applications and individual files is available only for the following virtual machine file systems:

| Virtual machine operating system | Supported virtual machine file systems |
|---|---|
| Windows | NTFS<br>FAT<br>FAT32<br>ReFS for applications only |
| Linux | FAT32<br>xfs<br>ext4/ext3/ext2<br>reiserfs<br>btrfs |

# Application awareness

HYCU can discover the following applications running on virtual machines:

| Application[ab] | Supported versions | Supported on operating systems | Notes |
|---|---|---|---|
| SQL Server | 2012[c]<br>2014[c]<br>2016<br>2017<br>2019 | Windows Server 2012<br>Windows Server 2016<br>Windows Server 2019 | • Data protection for Always On Availability Groups and Always On Basic Availability Groups is supported.<br>• SQL Server failover cluster is supported. |
| Active Directory | N/A | Windows Server 2012<br>Windows Server 2016<br>Windows Server 2019 | The following roles are supported for Active Directory: Active Directory Domain Services, Active |

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| Application[ab] | Supported versions | Supported on operating systems | Notes |
|---|---|---|---|
| | | | Directory Lightweight Directory Services, Active Directory Certificate Services, Active Directory Federation Services, and Active Directory Rights Management Services. |
| Exchange Server | 2013 2016 2019 | Windows Server 2012 Windows Server 2016 Windows Server 2019 | Data protection for Database Availability Groups is supported. |
| Oracle | 12c | CentOS 6.x Oracle Linux 7.x and 8.x Red Hat Enterprise Linux 7.x SUSE Linux Enterprise Server 12 | Data protection for Oracle Real Application Clusters is not supported. |
| | 19c | Oracle Linux 7.4 and 8.x Red Hat Enterprise Linux 7.5 and 8.x SUSE Linux Enterprise Server 12 SP3 | |
| SAP HANA | 2.0 | SUSE Linux Enterprise Server 12 | <ul><li>Supported on Nutanix AHV clusters only.</li><li>SAP HANA single-host and multiple-host (distributed) configurations are supported.</li></ul> |

[a] Discovery and data protection are supported only for 64-bit applications.
[b] HYCU leverages VSS technology to create application-consistent backups of Active Directory and Exchange Server. Other VSS-based applications and services are not supported.
[c] Not supported for Always On Basic Availability Groups.

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# Targets

The following targets are supported for storing data protected by HYCU:

| Target type | Supported | Notes |
| --- | --- | --- |
| NFS | ✓<br><br>Versions: 3 and 4 | A Nutanix Files share can be used as an NFS target. |
| SMB | ✓<br><br>Versions: 1.0, 2.0, 2.1, 3.0, and 3.1.1 | A Nutanix Files share can be used as an SMB target. |
| Nutanix | AOS versions: 5.15 and later | Storing file share data to this type of target is not supported. |
| Nutanix Objects | ✓<br><br>Versions: 3.0, 3.1, and 3.2 | Backing up data to a Nutanix Objects target that has WORM enabled is supported. |
| iSCSI | ✓ | <ul><li>HYCU can use iSCSI targets with one or more storage processors for storing data.</li><li>File share protection is not supported.</li></ul> |
| AWS S3/Compatible<br>AWS Government<br>AWS China | ✓ | <ul><li>The S3-compatible cloud storage solutions that are currently certified by HYCU are Scality, Cloudian, Minio, Tencent Cloud, Alibaba Cloud, and Snowball.</li><li>Using Object Lock (WORM) is supported for AWS S3 and Cloudian S3-compatible targets.</li></ul> |
| Azure<br>Azure Government<br>Azure China | ✓ | Backing up data to an Azure target that has WORM enabled is not supported. |
| Google Cloud | ✓ | Backing up data to a Google Cloud target that has WORM enabled is not supported. |

| QStar NFS | ✓ | QStar ASM software version 6 must be installed on the system to which tape is connected. |
|-----------|---|---|
| QStar SMB | ✓ | |

# Physical machines

This section provides support information for physical machines.

## Physical machine operating systems

HYCU can perform the backup and restore of physical machines (including restore of applications and individual files) that are running the following operating systems:

| Physical machine operating system | Notes |
|---|---|
| Windows Server 2012<br>Windows Server 2012 R2<br>Windows Server 2016<br>Windows Server 2019 | • The VSS service must be enabled and running, and the VSS writer status must be stable.<br>• WinRM must be enabled and configured by using the `winrm quickconfig` command.<br>• The latest Windows Server updates must be installed.<br>• MBR basic disks and GPT basic disks are supported (MBR supports only primary partitions).<br>• Dynamic disks are not supported.<br>• Windows failover clusters are not supported.<br>• Windows Storage Spaces (WSS) is not supported.<br>• Restoring individual files from volumes with enabled data deduplication is not supported. |
| Red Hat Enterprise Linux 7.x<br>Red Hat Enterprise Linux 8.x | • Access to the physical machine through SSH must be enabled.<br>• Only LVM volumes are supported.[a]<br>• Encrypted volumes are not supported. |
| Oracle Linux 7.x<br>Oracle Linux 8.x | |
| CentOS 7.x<br>CentOS 8.x | |

[a] This does not apply to the boot disk.

# Physical machine file systems

HYCU can perform the backup and restore of physical machines (including restore of applications and individual files) that use the following physical machine file systems:

| Physical machine operating system | Supported physical machine file system |
|---|---|
| Windows | NTFS |
| Linux | xfs<br>ext4/ext3/ext2 |

# Application awareness

HYCU can discover the following applications running on physical machines:

| Application[ab] | Supported versions | Supported on operating systems | Notes |
|---|---|---|---|
| SQL Server | 2012[c]<br>2014[c]<br>2016<br>2017<br>2019 | Windows Server 2012<br>Windows Server 2016<br>Windows Server 2019 | • Data protection for Always On Availability Groups and Always On Basic Availability Groups is supported.<br>• SQL Server failover cluster is not supported. |
| Active Directory | N/A | Windows Server 2012<br>Windows Server 2016<br>Windows Server 2019 | The following roles are supported for Active Directory: Active Directory Domain Services, Active Directory Lightweight Directory Services, Active Directory Certificate Services, Active Directory Federation Services, and Active Directory Rights Management Services. |
| Exchange Server | 2013<br>2016<br>2019 | Windows Server 2012<br>Windows Server 2016<br>Windows Server 2019 | Data protection for Database Availability Groups is supported. |
| Oracle | 12c | Red Hat Enterprise Linux 7.x<br>Oracle Linux 7.x | Data protection for Oracle Real Application Clusters is |

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| Application[ab] | Supported versions | Supported on operating systems | Notes |
|---|---|---|---|
| | 19c | Oracle Linux 7.4 and 8.x<br>Red Hat Enterprise Linux 7.5 and 8.x | not supported. |

[a] Discovery and data protection are supported only for 64-bit applications.
[b] HYCU leverages VSS technology to create application-consistent backups of Exchange Server. Other VSS-based applications and services are not supported.
[c] Not supported for Always On Basic Availability Groups.

## Targets

The following targets are supported for storing data protected by HYCU:

| Target type | Supported | Notes |
|---|---|---|
| NFS | ✓<br>Versions: 3 and 4 | Supported only for Linux operating systems. |
| SMB | ✓ | Supported only for Windows operating systems. |
| QStar NFS | ✓ | • Supported only for Linux operating systems.<br>• QStar ASM software version 6 is installed on the system to which tape is connected. |
| QStar SMB | ✓ | • Supported only for Windows operating systems.<br>• QStar ASM software version 6 is installed on the system to which tape is connected. |

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# Cipher suites

HYCU supports the following cipher suites:

| Cipher suite | Supported |
|---|---|
| ECDHE-ECDSA-AES128-GCM-SHA256 | ✓ |
| ECDHE-ECDSA-AES256-GCM-SHA384 | ✓ |
| ECDHE-ECDSA-CHACHA20-POLY1305 | ✓ |
| ECDHE-RSA-AES128-GCM-SHA256 | ✓ |
| ECDHE-RSA-AES256-GCM-SHA384 | ✓ |
| ECDHE-RSA-CHACHA20-POLY1305 | ✓ |
| DHE-RSA-AES128-GCM-SHA256 | ✓ |
| DHE-RSA-AES256-GCM-SHA384 | ✓ |
| AES256-GCM-SHA384 | ✓ |
| AES128-GCM-SHA256 | ✓ |

# Web browsers

The following web browsers can be used to access the HYCU web user interface:

| Web browser | Supported |
|---|---|
| Microsoft Edge | ✓ |
| Mozilla Firefox | ✓ |
| Google Chrome | ✓ |

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# Software availability in native languages

The following table lists the supported languages for HYCU:

| Language | Supported | Locale code |
|---|---|---|
| English | ✓ | EN |
| Japanese | ✓ | JA |

COMPATIBILITY MATRIX

# Provide feedback

For any suggestions and comments regarding this product or its documentation, send us an e-mail to:

info@hycu.com

We will be glad to hear from you!