

VMware App Volumes 4 Installation Guide

VMware App Volumes 2103

You can find the most up-to-date technical documentation on the VMware website at:

<https://docs.vmware.com/>

VMware, Inc.
3401 Hillview Ave.
Palo Alto, CA 94304
www.vmware.com

Copyright © 2019, 2021 VMware, Inc. All rights reserved. [Copyright and trademark information.](#)

Contents

- 1** About This Book 4
- 2** Introduction to VMware App Volumes 5
- 3** System Requirements 8
- 4** Installing App Volumes 10
 - User Accounts and Credentials 10
 - Install App Volumes Manager 11
 - Install App Volumes Manager Silently 13
 - Install App Volumes Agent 14
 - Install App Volumes Agent Silently 15
 - Install App Volumes Application Capture Command-Line Program 16
 - Verify License 17
 - Scaling the App Volumes Manager 17
 - Supported App Volumes Scenarios 18
- 5** Upgrading App Volumes Components 20
 - Upgrade App Volumes Manager 20
 - Perform Rolling Upgrades 22
 - Managing Packages and AppStacks in App Volumes Manager 23
 - Configuring visibility and management of App Volumes Manager 2.x UI 24
 - Upgrade App Volumes Agent 25
 - Upgrade App Volumes Agent Silently 25

About This Book

1

The *VMware App Volumes Installation Guide* provides information on how to install, deploy, and upgrade VMware App Volumes[®].

Intended Audience

This information is intended for experienced IT system administrators who are familiar with virtual machine technology and datacenter operations.

Introduction to VMware App Volumes

2

VMware App Volumes provides a system to deliver applications to desktops through virtual disks. Applications are delivered by attaching a standard VMDK or VHD file to a virtual machine. You can centrally manage the applications with the App Volumes Manager and there is no need to modify the desktops or individual applications.

Applications delivered using App Volumes based on assignments look and feel natively installed to the end user.

All Application Programs are packaged as fully installed and delivered in real-time to the user's session.

A typical App Volumes environment consists of a few key components that interact with each other and an external infrastructure.

Table 2-1. App Volumes Components

Component	Description
App Volumes Manager	Web-based interface integrated with Active Directory (AD) and vSphere. Consists of services that orchestrate application delivery and interface the vSphere environment. You can use App Volumes Manager for the following tasks: <ul style="list-style-type: none">■ Manage assignments of volumes to users, groups, and target computers.■ Collect Application Packages and Writable Volumes usage information.■ Maintain a history of administrative actions.■ Automate assignment of applications and Writable Volumes for agents during desktop startup and user login. See Install App Volumes Manager and the Configuring App Volumes Manager in the administration guide.
App Volumes database	A Microsoft SQL or SQL Server Express database that contains configuration information for Application Packages, Writable Volumes, and users. See Chapter 3 System Requirements .
App Volumes agent	Software installed on all Windows desktops where Application Packages and Writable Volumes are assigned. See Install App Volumes Agent .
Application	An Application represents a collection of packaged versions of that Application. Users, Groups, Computers, or OUs (Organizational Units) can be entitled to receive a current Package or be assigned to a specific Package.
Package	A Package stores one or more Programs required for an Application to run. A single Package can be delivered to multiple computers and one or many users.

Table 2-1. App Volumes Components (continued)

Component	Description
Writable Volume	<p>Writable Volumes provide storage for application profile settings, documents, and installed applications. The mode of storage is determined by the template that is selected during creation.</p> <p>Note Users cannot have more than one Writable Volume assigned to them. For more information about using Writable Volumes, see the <i>VMware App Volumes Administration Guide</i> at VMware Docs.</p>
Programs	<p>Programs are installed during the packaging process. When an Application is assigned and a Package is delivered to a desktop, the Programs are then visible inside Windows under Programs and Features and available from the Start Menu.</p>
Packaging Desktop	<p>A clean virtual machine that contains the necessary programs for installation into Application Packages. The desktop must have the App Volumes agent installed and configured to connect to the App Volumes Manager.</p>
Target Computer	<p>A VDI desktop, physical client computer, Remote Desktop Services (RDS) Host or Citrix XenApp Server where users log in to access their applications delivered from the Package. The target computer must have the App Volumes agent installed and configured to connect to the App Volumes Manager.</p>
VMware vCenter Server	<p>App Volumes uses vCenter Server to connect to resources within the vSphere environment. See <i>Configuring a Machine Manager</i> section in the App Volumes administration guide.</p>

Table 2-1. App Volumes Components (continued)

Component	Description
Storage Group	<p>You can use Storage Groups to automatically replicate Application Packages or distribute Writable Volumes across many datastores. They are also used to define a group of datastores that should all contain the same Application Packages. Some of the attributes for the group, such as template location and strategy, only apply when using the group for distributing writable volumes. The distribution strategy setting controls how Writable Volumes are distributed across the group.</p> <ul style="list-style-type: none"> ■ Spread. Distribute files evenly across all the storage locations. When a file is created, the storage with the most available space is selected. ■ Round Robin. Distribute files by sequentially using the storage locations. When a file is created, the storage with the oldest used time is selected. <p>You can manage the capabilities of storage groups by selecting required storage and ignoring unwanted or slow-performing storages while mounting volumes. When you mark a storage as Not Attachable, the App Volumes Manager ignores the storage while mounting volumes.</p> <p>For example, you can set up two vCenter Server instances. Each server can have a local storage and shared storage capability. You can mark the slower-performing storage as Not Attachable. This storage is ignored by the App Volumes Manager while mounting volumes and can be used solely for replication of Application Packages.</p>
App Volumes Application Capture Command-Line Program	<p>Standalone, software program that captures an application install into a package in the .vhd and .vmdk file formats.</p> <p>Use this program to easily automate the process of capturing applications by working with packages outside of App Volumes Manager console. The program can also be used to test and validate the captured application before delivering the application package to end users.</p> <p>The command-line capture program must be installed on a virtual machine that has no other App Volumes components. You can run the program on the Windows command line and Windows PowerShell.</p> <p>For the install procedure, see Install App Volumes Application Capture Command-Line Program.</p> <p>For information about using the command-line capture program, command-line options, and capture workflows, see the <i>VMware App Volumes Administration Guide</i> at VMware Docs.</p>

System Requirements

3

Ensure that your system meets certain requirements before you install VMware App Volumes.

Table 3-1. Database, Browser, and Infrastructure Requirements

Component	Details
Database	<p>App Volumes Manager requires one of the following versions of the Microsoft SQL database:</p> <ul style="list-style-type: none">■ SQL Server 2019■ SQL Server 2017■ SQL Server 2016 SP2■ SQL Server 2014 SP1 and SP2■ Support for SQL server 2014 Enterprise SP3 64-bit <p>For High Availability, App Volumes supports the following database features:</p> <ul style="list-style-type: none">■ SQL Server Clustered Instances■ SQL Server Mirroring
Browser	<p>Use App Volumes Manager on one of the following supported browsers:</p> <ul style="list-style-type: none">■ Internet Explorer 9 or later■ Mozilla Firefox 28 or later■ Safari 7 or later■ Google Chrome 21 or later
App Volumes Manager	<ul style="list-style-type: none">■ Microsoft Windows Server 2019 Datacenter and Standard■ Microsoft Windows Server 2016 Datacenter and Standard■ 4 vCPU required■ 4 GB RAM■ 1 GB disk space

Table 3-1. Database, Browser, and Infrastructure Requirements (continued)

Component	Details
App Volumes Agent (client OS)	<ul style="list-style-type: none"> ■ Microsoft Windows 10, version 21H1 Enterprise and Pro ■ Microsoft Windows 10, version 20H2 Enterprise and Pro ■ Microsoft Windows 10, version 2004 Enterprise and Pro ■ Microsoft Windows 10, version 1909 Enterprise ■ Microsoft Windows 10 Enterprise LTSC 2019 (version 1809) ■ Microsoft Windows Server 2019 Datacenter and Standard ■ Microsoft Windows Server 2016 Datacenter and Standard ■ 64-bit versions of Microsoft Windows only ■ 1 GB RAM ■ 1 vCPU ■ 16 GB disk space
App Volumes Application Capture Command-Line Program	<p>System requirements for the command-line capture program is the same as that of the App Volumes agent.</p> <p>Note .NET Framework 3.5 is required for using PowerShell.</p>
Hypervisor (if using VMDK)	VMware ESXi and vCenter Server 6.5 or later (ESXi and vCenter Server must be the same version)
File share (if using VHD)	SMB version 3
Directory	Microsoft Active Directory domain, 2003 functional level or later. Read-only account access.

Table 3-2. Networking Requirements

Component	Purpose	Port number
App Volumes Manager	Agent and Manager communications	<ul style="list-style-type: none"> ■ TCP 80 (HTTP) ■ TCP 443 (HTTPS)
App Volumes SQL Database	Database communication	TCP 1433 (SQL)

Installing App Volumes

4

Installing App Volumes involves installing the App Volumes Manager, App Volumes agents, and related components.

Before installing App Volumes, ensure that you have created and set up the requisite user accounts and Active Directory credentials.

This chapter includes the following topics:

- [User Accounts and Credentials](#)
- [Install App Volumes Manager](#)
- [Install App Volumes Agent](#)
- [Install App Volumes Application Capture Command-Line Program](#)
- [Verify License](#)
- [Scaling the App Volumes Manager](#)
- [Supported App Volumes Scenarios](#)

User Accounts and Credentials

Users and administrators require certain account permissions to install and manage App Volumes components.

User Accounts

You can create user accounts and grant privileges for different roles. User names must contain only ASCII characters:

- To integrate App Volumes with vCenter Server, you must create a service account within a vCenter Server with administrator privileges. Optionally, you can create a service account with privileges granted by a custom user role.
- If you plan to use a direct connection to the ESXi host or plan to use the **Mount to Host** option with a vCenter Server connection, you must have administrator privileges on all ESXi hosts.

Active Directory Credentials

The App Volumes Manager connects to Active Directory using the service account. To prepare for installation, you must create an account within the Active Directory domain that meets the following requirements:

- Provides read access to the Active Directory domain. Administrator privileges are not required.
- Has a password that does not expire.

If your environment contains domains that are configured for one-way or two-way trust, you can configure separate credentials to access these domains. These credentials are used when connecting to any trust instead of the primary domain credentials.

Administrators Group

Access to the App Volumes Manager is restricted to the App Volumes administrators group. When you perform the initial configuration, you must provide the name of the Active Directory security group that will have access to the App Volumes Manager.

Local administrator privileges are required for the following actions:

- Install App Volumes components on target servers.
- Use writable volumes with user-installed applications.
- Package Application Packages.

Note The Active Directory service account user is not required to be an administrator.

Install App Volumes Manager

App Volumes Manager is a Web console that is used for administration and configuration of App Volumes and assignment of Application Packages and Writable Volumes.

Prerequisites

- Download the App Volumes installer.
- Ensure that you have the SQL Server authentication details with you.
- Verify that your environment meets the system requirements.
See [Chapter 3 System Requirements](#).
- Verify that your account has local administrator privileges on the target server.

Procedure

- 1 Run the `setup.msi` installer file.
- 2 Read and accept the End-User License Agreement and click **Next**.
- 3 Select **Install App Volumes Manager** and click **Next**.

4 Select a database option:

Option	Description
Local installation of SQL Server Express	The database is installed automatically.
Remote SQL Server	Enter the required server authentication details.

5 Select the database connection method.

Option	Description
Windows Integrated Authentication	Provide owner permissions on the new database to the App Volumes Manager server.
SQL authentication	Create a user and provide owner permissions to the user on the new database.

A new ODBC connection named svmanager is created.

6 Enter the name of the database.

Important Non-ASCII characters are not supported in the database name.

7 Choose a new database or continue to use the existing one.

Option	Action
Choose a new database.	Select the Overwrite existing database (if any) check box. Note When you upgrade App Volumes or install an additional instance of App Volumes Manager, this check box must not be selected.
Use the existing database.	Clear the Overwrite existing database (if any) check box. Important If old App Volumes Manager instances that pointed to the existing database are no longer online, then ensure that the records of all those instances are removed from the database.

8 If you do not have the relevant certificate to validate the SSL connection to SQL server, deselect the **Enable SQL Server certificate validation** check box and click **Next**.

By default, **Enable SQL Server certificate validation** check box is selected.

9 Select the ports on which App Volumes Manager can listen for incoming connections.

By default, communication occurs over SSL and the default value of the port is 443. Specify the port value as 80 (or equivalent) for App Volumes Manager to listen on a HTTP port.

10 (Optional) Check the **Allow Connections over HTTP (insecure)** box.

If you have specified the App Volumes Manager to listen on an HTTP port in Step 7, you must select this box. Selecting this box disables SSL and all communication with App Volumes Manager becomes insecure .

Caution Do not enable HTTP in a production environment.

11 Click **Next** and enter the path where App Volumes Manager must be installed.

12 To begin the installation, click **Install**.

What to do next

Log in to App Volumes Manager and configure the Active Directory, vCenter Server, Machine Managers, and Storage when you have installed App Volumes Manager. Configure the connection to the SQL database and SSL for App Volumes Manager. For more information, see the *App Volumes administration guide* on [VMware Docs](#).

Install App Volumes Manager Silently

You can install App Volumes Manager silently using the Microsoft Windows Installer (MSI).

You might want to perform a silent installation when you want to run the installation unattended.

Prerequisites

- You must have administrator privileges on the machine where you want to perform the silent installation.
- Ensure that your Windows Server has the latest OS security updates. See the Microsoft KB <https://support.microsoft.com/en-us/kb/2919355> for more information.
- You must have access to the `msodbcsql_17.2.0.1_x64.msi` which will install the ODBC 17.2 driver.
- Access `vc_redist.x64.exe` executable from the App Volumes Manager folder and run the executable.

Procedure

- 1 Open a command prompt and run the following command to install the ODBC driver:


```
msodbcsql_17.2.0.1_x64.msi /qn IACCEPTMSODBCSQLLICENSETERMS=YES /norestart
```
- 2 Install `App Volumes Manager.msi` with the following parameters:
 - Local database with Windows authentication - `IS_SQLSERVER_SERVER=(local) \SQLEXPRESS IS_SQLSERVER_DATABASE=svmanager_production RESET_DB=1 ALLOW_HTTP=1`
 - Remote database - `IS_SQLSERVER_SERVER=ip_address IS_SQLSERVER_DATABASE=database_name RESET_DB=0 ALLOW_HTTP=1 IS_SQLSERVER_USERNAME=username IS_SQLSERVER_PASSWORD=password IS_SQLSERVER_AUTHENTICATION=1`

Important Non-ASCII characters are not supported in the `database_name`.

```
Example: msisexec /i "App Volumes Manager.msi" /qb IS_SQLSERVER_SERVER=(local) \SQLEXPRESS IS_SQLSERVER_DATABASE=svmanager_production RESET_DB=1 ALLOW_HTTP=1
```

Install App Volumes Agent

After you have installed App Volumes Manager, install the App Volumes agent on the packaging computer and target desktops.

For improved security when using the App Volumes agent, disable weak ciphers in SSL and TLS to ensure that Windows-based machines running the agent do not use weak ciphers when they communicate using SSL/TLS protocol. See *Disable Weak Ciphers in SSL and TLS* in the Horizon 7 documentation.

Important Do not install the agent on the same machine where the App Volumes Manager is installed.

You can also install the agent silently using the Microsoft Windows Installer (MSI). See [Install App Volumes Agent Silently](#) for more information.

Prerequisites

- Ensure that you have installed the App Volumes Manager and you have the host IP address and port number.
- Verify that your environment meets the system requirements.
See [Chapter 3 System Requirements](#).
- Verify that your account has local administrator privileges on the target computer.
- Install the latest Windows Update on the target computer and subsequently disable the Update.

When you have application packages or Writable Volumes and the Windows Update is not disabled on the target computer, the system volume or the Writable Volumes might get corrupted.

- If you intend to use this virtual machine as a packaging computer, create a clean snapshot or take a backup of this machine. Revert to this snapshot or the backup before packaging new application packages.

Procedure

- 1 Run the App Volumes installer.

The same installer is used to install App Volumes Manager and the agent.

- 2 Read and accept the End User License Agreement and click Next.
- 3 Select **Install App Volumes Agent** and click Next.
- 4 Enter the IP address and port number.

The default port number for App Volumes Manager is 443. Enter 80 for the port number if you have configured App Volumes Manager to listen on an HTTP port.

- 5 (Optional) Check the **Disable Certificate Validation with App Volumes Manager** box if you do not want the agent to validate the App Volumes Manager certificate.

Certificate validation is enabled by default.

- 6 Click **Install** and follow any on-screen instructions.
- 7 Click **Finish** to exit the wizard after the installation is completed.
- 8 Restart your packaging virtual machine to complete the agent installation.

What to do next

Configure SSL certificates for the agent. You can also disable SSL communication and certificate validation between App Volumes Manager and agent. For more information, see the *VMware App Volumes Administration Guide* on [VMware Docs](#).

Install App Volumes Agent Silently

You can install App Volumes agent silently using the Microsoft Windows Installer (MSI).

You perform a silent install using the command line and you do not need to use the App Volumes installer. You can also upgrade the agent silently. See [Upgrade App Volumes Agent Silently](#).

Prerequisites

- Ensure that you have installed the App Volumes Manager and you have the host IP address and port number.
- Verify that your environment meets the system requirements.

See [Chapter 3 System Requirements](#).

- Verify that your account has local administrator privileges on the target computer.
- Install the latest Windows Update on the target computer and subsequently disable the Update.

When you have application packages or Writable Volumes and the Windows Update is not disabled on the target computer, the system volume or the Writable Volumes might get corrupted.

- If you intend to use this virtual machine as a packaging computer, create a clean snapshot or take a backup of this machine. Revert to this snapshot or back up before you package new Application Packages.

Procedure

- 1 Open a Windows command prompt on your machine.
- 2 In the command prompt, access the App Volumes Agent.msi file location.

3 To install the agent, use the following command:

Option	Description
App Volumes 4 Update 1 and later	<pre>msiexec.exe /i "App Volumes Agent.msi" /qn MANAGER_ADDR=<Manager_FQDN/IP> MANAGER_PORT=<port> EnforceSSLCertificateValidation=<0or1></pre> <p>Note EnforceSSLCertificateValidation is an optional parameter.</p>
App Volumes 4	<pre>msiexec.exe /i "App Volumes Agent.msi" /qn MANAGER_ADDR=<Manager_FQDN/IP> MANAGER_PORT=<port> EnforceSSLCertificateValidation=<0or1></pre> <p>Note All parameters are mandatory.</p>

Install App Volumes Application Capture Command-Line Program

To capture application installs into a package outside of App Volumes Manager console, you can install the standalone Windows, App Volumes Application Capture Command-Line Program on a virtual machine. After the capture session, .vhd and .vmdk (monolithic sparse) package formats are created and are accompanied by a .json metadata file.

Prerequisites

- Download the App Volumes installer from the [VMware Downloads](#) page.
- Ensure that no other App Volumes component is installed on the virtual machine where you intend to install the command-line capture program.

If you have an App Volumes component installed on the machine, take a snapshot of the machine, clone it, and uninstall the component.

If you have used the machine to package an application, then you must revert the machine to its original state. It is necessary to revert because the capture process can leave remnants that can adversely impact other application installs.

- Ensure that your virtual machine has sufficient disk space for all the application packages that you intend to create.

The amount of disk space required depends on the number and size of the programs that you intend to install during the capture process.

Procedure

- 1 Run the setup.msi installer.

The same installer is used to install App Volumes Manager and the agent.

- 2 Read and accept the End User License Agreement and click **Next**.

- 3 Select **Install App Volumes Tools** and click **Install**.

- 4 Follow any on-screen instructions.
- 5 To exit the wizard after the installation is completed, click **Finish**.
- 6 To complete the App Volumes Application Capture Command-Line Program installation, restart your virtual machine.

App Volumes Application Capture Command-Line Program gets installed at C:\Program Files (x86)\VMware\AppCapture.

What to do next

For more information about how to use the command-line capture program, see the *VMware App Volumes Administration Guide* at [VMware Docs](#).

Verify License

You must enter the App Volumes license information before configuring other components. A valid license is required to activate and use App Volumes.

Prerequisites

Ensure that you have downloaded and installed the App Volumes license file. The production license file can be downloaded from the VMware App Volumes product download page.

Procedure

- 1 From the App Volumes Manager console, click **CONFIGURATION > License**.
- 2 Verify the license information that is displayed.
If you have an evaluation license, you can use App Volumes until the expiration date.
- 3 (Optional) To apply a different license, click **Edit** and browse to the location of the license you want to upload.
- 4 Click **Upload** to upload the App Volumes license file.
- 5 Click **Next** and follow on-screen instructions.

Scaling the App Volumes Manager

You can install an additional App Volumes Manager component on multiple servers and point them to a shared SQL database.

Multiple App Volumes Manager instances can be load balanced by a hardware load balancer. Alternatively, you can configure the App Volumes agent to communicate with multiple App Volumes Manager servers.

Procedure

- 1 To install additional App Volumes Manager instances, follow standard installation procedures and point a new instance to the existing SQL database.

Important In the installation wizard, ensure that you have deselected the **Create a new database or overwrite the existing database** check box.

Install App Volumes Manager

- 2 Configure the App Volumes agent to communicate with multiple App Volumes Manager instances by modifying the following registry key: `HKLM\SYSTEM\CurrentControlSet\Services\svservice\Parameters`.
You can specify the load balanced FQDN of the App Volumes Manager.
- 3 In the registry key, add string value named *ManagerN* and value data App Volumes Manager *FQDN, colon, and port number*.

- *N* ranges between 0 to 9
- By default, the port number is 443.

For example, to add the data for the additional App Volumes Manager instance whose IP address is 192.168.127.53 and port 443, perform the following:

- a Open `regedit.exe`.
- b Access the registry key `Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\svservice\Parameters`.
- c Right click on the registry key and select **New > String Value**.
- d Add the value as `Manager2`.
- e Double-click **Manager2** and add the data as `192.168.127.53:443`.

- 4 Click **OK**.

What to do next

Restart the virtual machine on which you have installed the App Volumes agent.

Supported App Volumes Scenarios

The information presented here lists the possible and supported scenarios of applications and Writable Volumes assigned to user and computer entities with different types of virtual desktop pools. This information also includes the supported App Volumes scenarios when used in RDSH environments.

You must be aware of the following:

- Scenarios without delete or refresh of a machine on logoff (persistent) are not supported.

- For RDSH scenarios, similarly, a refresh at computer shutdown is required.
- For supported Horizon scenarios in the virtual desktop environment, the appropriate configuration options for the following criteria must be selected in the desktop pool settings:
 - Delete machine after logoff
 - Refresh OS disk after logoff

For more information about the virtual desktop pool configuration options and related information, you can see [Horizon documentation](#) such as *Setting Up Virtual Desktops in Horizon 7*.

The following table lists the possible scenarios for application and Writable Volumes when assigned to a user and computer in a virtual desktop pool and RDSH environments.

Assignment Type	Volume Type	Instant-Clone Desktops	Linked-Clone Desktops		RDSH	
			Floating	Dedicated	Application	Desktop
User	Application	Yes	Yes	Yes	No	No
	Writable Volume	Yes	Yes	Yes	No	No
Computer	Application	Yes	Yes	Yes	Yes	Yes
	Writable Volume	Yes	No	Yes	Yes	Yes

Upgrading App Volumes Components

5

You can upgrade the different components of App Volumes by using the installer.

If you have App Volumes 2.18 installed on your system, you can upgrade to the latest version without uninstalling your currently installed version.

If you have installed an App Volumes version earlier than 2.18, you must first upgrade to 2.18 and then upgrade to the latest version.

This chapter includes the following topics:

- [Upgrade App Volumes Manager](#)
- [Upgrade App Volumes Agent](#)

Upgrade App Volumes Manager

Download and run the latest version of the App Volumes installer to upgrade your App Volumes Manager. You can upgrade from App Volumes Manager 2.18 to the latest App Volumes Manager version.

If you want to upgrade multiple App Volumes Managers which point to a central database, open `services.msc` and stop the App Volumes Manager service on each server. You must then run the installer on each server to upgrade App Volumes.

The import functionality has changed in App Volumes 4, version 2012. For optimal import functionality, ensure all App Volumes Manager servers are upgraded to App Volumes 4, 2012 before performing import actions. For more information about the behavior of imported application packages, see the latest version of *VMware App Volumes 4 Administration guide* at [VMware Docs](#).

For minor and maintenance upgrades, see [Considerations for Performing Rolling Upgrades](#).

Prerequisites

- Download the latest App Volumes installer from My VMware.
- Schedule a maintenance window to ensure that there is no service degradation during the upgrade process.

- In the Windows **Start** menu, open **Control Panel** and click **Administrative Tools > ODBC data source**. Note down the database and server name defined in the system ODBC source *svmanager*.
- Back up the App Volumes database using SQL Server tools.
- Create a full server backup or snapshot of the App Volumes Manager server.
- If you are using App Volumes Manager earlier than 2.18, you must first upgrade to App Volumes Manager 2.18 or later.

Important Before upgrading from App Volumes Manager 2.x, you must stop all instances of App Volumes Manager service.

Procedure

- 1 Log in as administrator on the machine where App Volumes Manager is installed.
- 2 Locate the App Volumes installer that you downloaded and double-click the `setup.msi` file.
- 3 Select the App Volumes Manager component and click **Install**.
A notification window with the upgrade process details is displayed.
- 4 Click **Next** to confirm the upgrade.
- 5 Click **Install** to begin the installation.
A Status Bar shows the progress of the installation. The installation process takes from 5 through 10 minutes to finish. During this time, configuration information is first backed-up, new files are installed, and the configuration information is restored.
- 6 Click **Finish** to complete the installation.

Results

App Volumes Manager is upgraded.

Note All certificates that you had previously configured are retained and you do not need to reconfigure them.

What to do next

- Upgrade the App Volumes agent.
[Upgrade App Volumes Agent.](#)
- After you have upgraded App Volumes to the latest version, you can activate registration security. If you have a multi-manager setup, you must also register any additional App Volumes Manager servers.

For details, see the *Register App Volumes Manager Server* section in the *VMware App Volumes Administration Guide* at [VMware Docs](#).

Perform Rolling Upgrades

A rolling upgrade is a deployment strategy in which a cluster of App Volumes Manager server instances is upgraded by taking one App Volumes Manager offline at a time. Such a strategy reduces the overall downtime.

As only one App Volumes Manager server is taken offline at a time, the App Volumes Manager service is available and end users can continue to have the Applications and Writable Volumes attached to their virtual machines during the upgrade process.

The rolling upgrade process is finished when you perform the procedure described in this section for all App Volumes Manager instances in the cluster.

Prerequisites

- If you are in the Administrators role, ensure that users in other administrator roles do not make any configuration or assignment changes from the App Volumes Manager admin UI. For other user roles, see *Assigning and Managing Roles and Privileges* in the *VMware App Volumes Administration Guide* at [VMware Docs](#).
- Back up the App Volumes database using SQL Server tools.
- Be aware of the [Considerations for Performing Rolling Upgrades](#).
- Download the latest App Volumes installer from the [VMware Downloads](#) page.

Procedure

- 1 In the load balancer, remove the App Volumes Manager server that you intend to upgrade first.
- 2 In the vCenter Server, take a VM Snapshot of the App Volumes Manager server by selecting the **Snapshot the virtual machine's memory** option.
- 3 Make a note of the current time on the App Volumes Manager server.
This timestamp is necessary when reviewing the App Volumes Manager log files which must be done for verifying that the rolling upgrade is successful.
- 4 In the Administrator role, log into the App Volumes Manager server and run the App Volumes installer.
- 5 Follow the prompts to install the App Volumes Manager.
- 6 After the installation is complete, navigate to the App Volumes Manager Log folder, locate the `svmanager_setup.log` file, and verify that the installation is successful.
- 7 In the load balancer, add the App Volumes Manager server back which was removed in an earlier step.
- 8 Repeat the steps in this procedure for all the App Volumes Manager server instances in the cluster.

- 9 Verify the upgrade in the App Volumes Manager console by navigating to **ACTIVITY > System Messages** and ensure that there are no error messages from the upgrade.

Considerations for Performing Rolling Upgrades

To upgrade the App Volumes Manager servers without shutting down the services, you must be aware of certain guidelines.

Important Before upgrading from App Volumes 2.x, you must stop all instances of App Volumes Manager service.

You must be aware of the following considerations while planning for rolling upgrades:

- Rolling upgrades can be performed from earlier versions of App Volumes 4.
An upgrade from App Volumes 2.18 requires that App Volumes Manager services on servers must be stopped before performing the upgrade.
- A full server backup or snapshot of the App Volumes Manager server must be taken.
- Administrators cannot use the new functionality of the App Volumes Manager console until all App Volumes Manager instances within the cluster are upgraded to the desired version.
- Before performing a rolling upgrade, all App Volumes Manager instances must be on the same version.
- After upgrading the App Volumes Manager to the desired version, rolling back the upgrade might result in loss of new data that was created or updated in the database during the upgrade process.
- App Volumes Agent must be upgraded only after upgrading all App Volumes Manager servers.

Managing Packages and AppStacks in App Volumes Manager

If you are upgrading from App Volumes Manager 2.x, you can manage both Packages and AppStacks in the App Volumes Manager UI. App Volumes Manager supports the co-existence of both Application Packages (for current version of App Volumes Agent) and AppStacks (App Volumes Agent 2.x).

If AppStacks and Writable Volumes (2.x) are not in use, you can disable the **VOLUMES (2.X)** tab and other 2.x-related features in the App Volumes Manager UI by using the **Enable Volumes (2.x)** toggle switch. For example, this switch can be used to turn off 2.x-related features after migrating the AppStacks and Writable Volumes (2.x) from App Volumes Manager 2.x.

Note If you are upgrading from App Volumes Manager 2.x, the **Enable Volumes (2.x)** toggle switch is on by default.

For information about how to use the toggle switch, see [Configuring visibility and management of App Volumes Manager 2.x UI](#).

Considerations before migrating from AppStacks to Packages

The following AppStack functionalities are not available when managing Application Packages:

- Limiting AppStack attachments.

For more information, read the *Limiting AppStack Attachments* section in the *VMware App Volumes 2.18 Admin Guide*.

- Option to attach an AppStack immediately.

For more information, read the *Assign an AppStack to a User* section in the *VMware App Volumes 2.18 Admin Guide*.

- Option to edit the type of Operating System to which an AppStack is attached.

For more information, read the *Edit an AppStack* section in the *VMware App Volumes 2.18 Admin Guide*.

Note You can use the advanced setting in App Volumes Manager to allow package delivery to any operating system which is different from the operating system used during packaging. For more information about this setting, see *VMware App Volumes 2103 Administration Guide* at [VMware Docs](#).

- AppStacks precedence

For more information, read the *AppStacks Precedence* section in the *VMware App Volumes 2.18 Admin Guide*.

- Reassign a Computer Writable Volume

For more information, read the *Reassign a Writable Volume to a Computer* section in the *VMware App Volumes 2.18 Admin Guide*.

You can access the *VMware App Volumes 2.18 Admin Guide* at [VMware Docs](#).

Configuring visibility and management of App Volumes Manager 2.x UI

When you upgrade from App Volumes Manager 2.x, the UI supports co-existence of both Application Packages and AppStacks. If AppStacks and Writable Volumes (2.x) are not in use after migrating from 2.x, you can disable the 2.x-related features in the UI by using the **Enable Volumes (2.x)** toggle switch.

Prerequisites

If you have decided to disable the 2.x-related UI features, ensure the following:

- You have upgraded to the latest version of App Volumes Agent.
- You have migrated AppStacks and Writable Volumes (2.x) to the latest version of App Volumes template format.

Procedure

- 1 From App Volumes Manager, go to **CONFIGURATION > Settings**.
- 2 On the **Settings** page, click **Advanced Settings**.
- 3 To disable the **VOLUMES (2.X)** tab and other 2.x-related information, click the **Enable Volumes (2.x)** toggle switch.

By default, **Enable Volumes (2.x)** is on.

- 4 Refresh App Volumes Manager .
VOLUMES (2.X) tab and other 2.x-related features are disabled from the UI.

Upgrade App Volumes Agent

Download and run the latest version of the App Volumes installer to upgrade your App Volumes Agent. You can upgrade from App Volumes Agent 2.18 to the latest App Volumes Agent version.

You can also upgrade the agent silently. See [Upgrade App Volumes Agent Silently](#).

Prerequisites

- Download the latest App Volumes installer from My VMware.
- Schedule a maintenance window to ensure that there is no service degradation during the uninstall and subsequent upgrade process.
- Upgrade the App Volumes Manager. See [Upgrade App Volumes Manager](#).
- Unassign all AppStacks and writable volumes from the target computer where you plan to upgrade the agent.
- If you are using App Volumes Agent earlier than 2.18, you must first upgrade to App Volumes Agent 2.18 or later.

Procedure

- 1 Log in as administrator on the machine where the App Volumes agent is installed.
- 2 Locate the App Volumes installer you have downloaded and run the `setup.msi` file.
- 3 Select the App Volumes agent component in the **Installer** window and click **Install**.
- 4 Click **Next** to begin the installation.

The installer backs up the configuration files and services.

- 5 Click **Finish** when you see the confirmation message.

Upgrade App Volumes Agent Silently

You can also upgrade the App Volumes agent silently using the Microsoft Windows Installer (MSI).

You perform a silent upgrade using the command line and you do not need to use the App Volumes installer.

Prerequisites

- Schedule a maintenance window to ensure that there is no service degradation during the uninstall and subsequent upgrade process.
- Upgrade the App Volumes Manager. See [Upgrade App Volumes Manager](#).
- Unassign all AppStacks from the target computer where you plan to upgrade the agent.

Procedure

- 1 Open a Windows command prompt on your machine.
- 2 In the command prompt, access the App Volumes Agent.msi file location.
- 3 To upgrade the agent, use the following command:

Option	Description
App Volumes 4 Update 1	<pre>msiexec.exe /i "App Volumes Agent.msi" /qn MANAGER_ADDR=<Manager_FQDN/IP> MANAGER_PORT=<port> EnforceSSLCertificateValidation=<0or1></pre> <p>Note The following parameters are optional: MANAGER_ADDR, MANAGER_PORT, and EnforceSSLCertificateValidation.</p>
App Volumes 4	<pre>msiexec.exe /i "App Volumes Agent.msi" /qn MANAGER_ADDR=<Manager_FQDN/IP> MANAGER_PORT=<port> EnforceSSLCertificateValidation=<0or1></pre> <p>Note All parameters are mandatory.</p>