

GUIDE – JANUARY 2019

PRINTED 2 APRIL 2019

# UPGRADING APP VOLUMES MANAGER SERVERS AND AGENTS: VMWARE APP VOLUMES OPERATIONAL TUTORIAL

VMware Horizon

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# Upgrading App Volumes Manager Servers and Agents: VMware App Volumes Operational Tutorial

## Overview

### Introduction

VMware provides this operational tutorial to help you with your [VMware App Volumes™](#) environment. App Volumes provides real-time application delivery and life-cycle management. IT can use App Volumes to quickly deliver applications and data to users without compromising the user experience.

We are often asked about recommendations for upgrading App Volumes. The topic *Upgrading App Volumes Components*, in the [VMware App Volumes Installation Guide](#), provides the technical steps to perform an upgrade.

But how should upgrades be done in your environment? Can end users remain logged in during the upgrade? Can you maintain 100 percent uptime using a rolling upgrade, or should you schedule a maintenance window and take a brief outage?

### Purpose of This Tutorial

In this operational tutorial, we will address these questions to improve your App Volumes upgrade experience.

This tutorial takes you through the steps to upgrade App Volumes Manager server and App Volumes Agents. Before you begin, you should have an App Volumes 2.12.0 or later environment available. See the [Quick-Start Tutorial for VMware App Volumes](#) to get started with a proof-of-concept, or see the [VMware App Volumes Installation Guide](#) for production installations.

**Note:** This tutorial covers upgrades of App Volumes Manager servers, App Volumes Agents, and prepackaged templates. It does not cover upgrades of App Volumes AppStacks and writable volumes. That subject is covered in [Updating AppStacks and Writable Volumes: VMware App Volumes Operational Tutorial](#).

### Audience

This tutorial is intended for IT administrators and App Volumes administrators of existing production environments. Both current and new administrators can benefit from using this tutorial. Knowledge of [VMware vSphere®](#), [VMware vCenter Server®](#), [Microsoft SQL Server](#), and [VMware Horizon® 7](#) is helpful.

## Upgrading App Volumes Manager Servers

### Upgrade Options for App Volumes

There are basically two strategies for upgrading during a scheduled maintenance window:

- **Full change window** – In an ideal world, we recommend planning a full change window (outage), meaning you would take the App Volumes Manager servers offline and make sure no users are connected to the environment. You could then update all servers before bringing them back online. This is the safest method because it ensures that no changes are made to the environment during the upgrade process. That being said, we recognize this is not always possible.
- **Rolling upgrade** – A rolling upgrade of the App Volumes Manager servers can alternatively be performed during the change window. In this model, you update the App Volumes Manager component on one server at a time, rolling through the upgrade process until all servers are upgraded. Because only one server is taken offline at a time, the App Volumes Manager service remains available, and end users will still have AppStacks and writable volumes attached to their virtual machines during the upgrade process.

### Prerequisites for Server Upgrades

1. If you plan to perform a rolling upgrade, take the necessary precautions to ensure that administrators will not log in to the App Volumes Manager web-based UI and make any configuration or assignment changes.

For example, send email notifying the administrators of the change window you plan to use.

2. If you plan to use a full change window for the upgrade, and take all App Volumes Manager servers offline at the same time, be sure to notify both administrators and end users that they will not be allowed to connect to the environment during the change window.

**Note:** New logins would be affected during the upgrade process. If you take all servers offline at the same time, or if you have only one server (not recommended for production environments), the App Volumes Manager service will be unavailable during the upgrade. AppStacks and writable volumes would not be attached if end users logged in to their virtual machines during the upgrade.

3. Back up the App Volumes SQL database.

## Workflow to Upgrade App Volumes Manager Server

1. Perform the tasks outlined in the [Prerequisites](#) section, in this guide.
2. If you have multiple App Volumes servers behind a load balancer, remove or turn off authentication to the first App Volumes Manager server you plan to upgrade.
3. Use vCenter Server to take a VM snapshot of the App Volumes Manager server.  
Be sure to choose the **Snapshot the virtual machine's memory** option.
4. Back up the App Volumes Manager server certificate and the `nginx.conf` file, located in:  
`Drive\Cloud Volumes\nginx\conf` **Note:** App Volumes Manager uses TLS/SSL to communicate with Active Directory, machine managers, and App Volumes Agents. It is important to replace the self-signed certificates with CA-signed certificates, especially for AppVolumes implementations in a production environment. For more information, see *Using SSL Certificates with App Volumes Manager*, in the [VMware App Volumes Administration Guide](#).
5. On the first App Volumes Manager server to be upgraded, stop the App Volumes Manager service:  
From the **Start** menu, go to **Administrative Tools > Services** and stop the **App Volumes Manager** service.
6. Take note of the current time on the App Volumes Manager server.  
You will reference this time stamp in a later step when reviewing the App Volumes Manager log files.
7. Copy the server logs from `Drive\Program Files (86)\CloudVolumes\Manager\Log` to a remote file share.  
These log files will not exist after the upgrade, and you might need them for reference.
8. Log in to the App Volumes Manager server as an administrator and run the App Volumes installer.
9. Do not overwrite the database. Follow all prompts and connect using ODBC Native Client credentials.
10. When you choose network ports during App Volumes Manager installation, select the **Allow Connections Over HTTP (insecure)** option.  
This is optional but recommended when performing an upgrade. If you have any issues with your certificates or communications between components, you can try an alternate route (HTTP), which streamlines troubleshooting.  
**Note:** Be sure to disable this option once the upgrade is complete and functionality has been verified.
11. When installation is complete, navigate to the `svmanager_setup.log` file in the App Volumes Manager `Log` folder and verify that the upgrade was successful.  
Example path: `C:\Program Files (x86)\Cloud Volumes\Manager\Log` In the `svmanager_setup.log` file, which contains a list of migration steps performed, verify that the last entry is **AddTimeStampsToMachineManager**. If you see this entry, and there are no errors before that line, you can safely assume the upgrade worked successfully.
12. If you use a load balancer and removed or disabled authentication to the App Volumes Manager server in step 2, add the server back or turn on authentication.

Repeat this procedure on the remaining App Volumes Manager servers.

## Verifying a Successful Upgrade of App Volumes Manager Servers

To verify the upgrade, you examine some log files.

# 1. Use the App Volumes Manager Dashboard to View System Messages

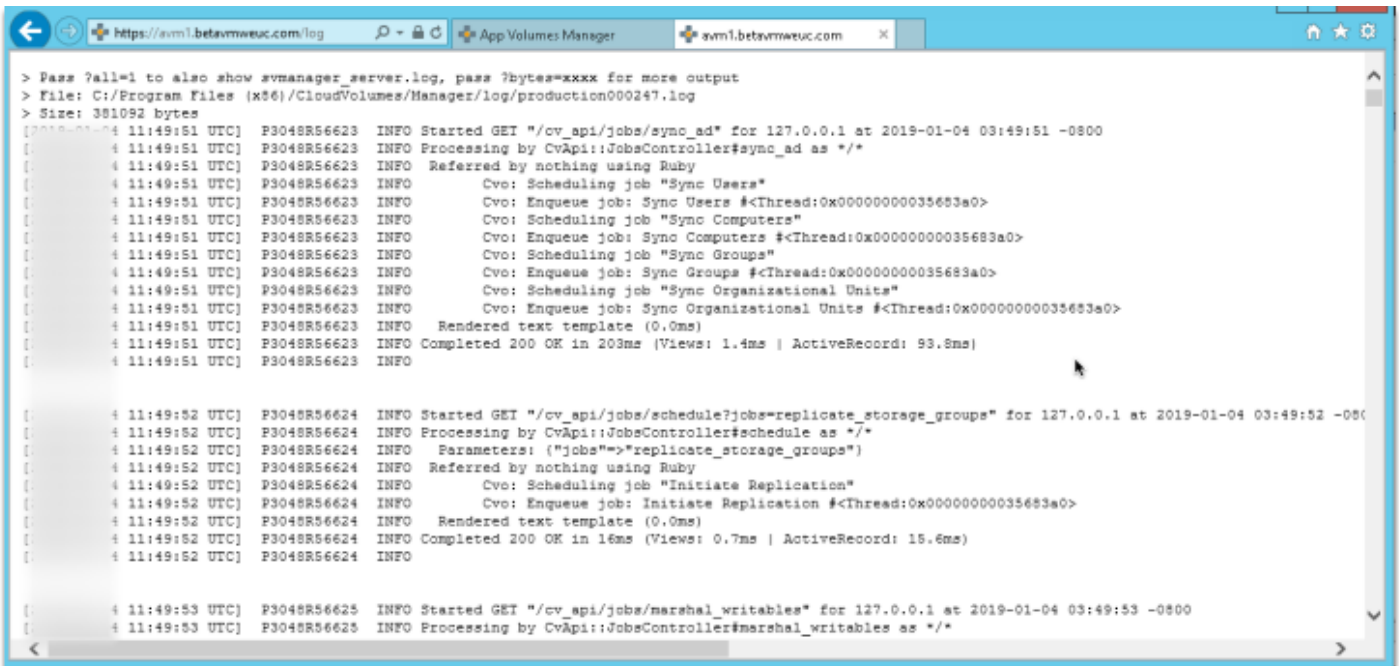
The screenshot shows the App Volumes Manager interface. At the top, there's a navigation bar with tabs: VOLUMES, DIRECTORY, INFRASTRUCTURE, **ACTIVITY**, and CONFIGURATION. Under the ACTIVITY tab, there are sub-tabs: Pending Actions, Activity Log, **System Messages**, Server Log, and Troubleshooting. The System Messages tab is active, displaying a list of messages. A 'Cleanup' button is visible in the top right of the messages area. The messages list has a 'Show 10' dropdown and a 'Filter' input field. The messages are as follows:

Time (-08:00)	Message
Dec 30 10:35AM	Unable to determine current user during /logout
Dec 23 08:24AM	Unable to determine current user during /logout
Dec 08 04:34PM	Unable to determine current user during /logout
Dec 01 06:13PM	Unable to determine current user during /logout
Nov 24 04:29PM	Unable to determine current user during /logout
Nov 20 07:26AM	Volume "BETAVMWEUC\eterpel" from "[13600-01-Beta-VDI-3-1] cloudvolumes214PR/writable/BETAVMWEUC\5C\eterpel.vmdk" is no longer attached to "Machine <uem96-2> (503a8dcd-1e77-bcf7-d3da-d4eac907bc20)" on "Computer <BETAVMWEUC\UEM96-2>"
Nov 20 07:26AM	Unable to determine if volume is mounted because VM identified by UUID "503a8dcd-1e77-bcf7-d3da-d4eac907bc20" was not found
Nov 20 07:26AM	Last User Login already ended, no previous log record to match User Logout for User 7
Nov 20 07:26AM	Unable to unmount volumes because VM identified by UUID "503a8dcd-1e77-bcf7-d3da-d4eac907bc20" was not found
Nov 20 07:26AM	Unable to unmount volumes because VM identified by UUID "503a8dcd-1e77-bcf7-d3da-d4eac907bc20" was not found

At the bottom of the messages list, it says "Showing 1 to 10 of 1,000 entries" and includes navigation buttons: First, Previous, 1, 2, 3, 4, 5, ..., 100, Next, Last.

Once the upgrade is complete on all servers, login to the App Volumes Manager dashboard, select the **System Messages** tab, and make sure there are no errors in the logs.

## 2. Use the Browser to View Logs



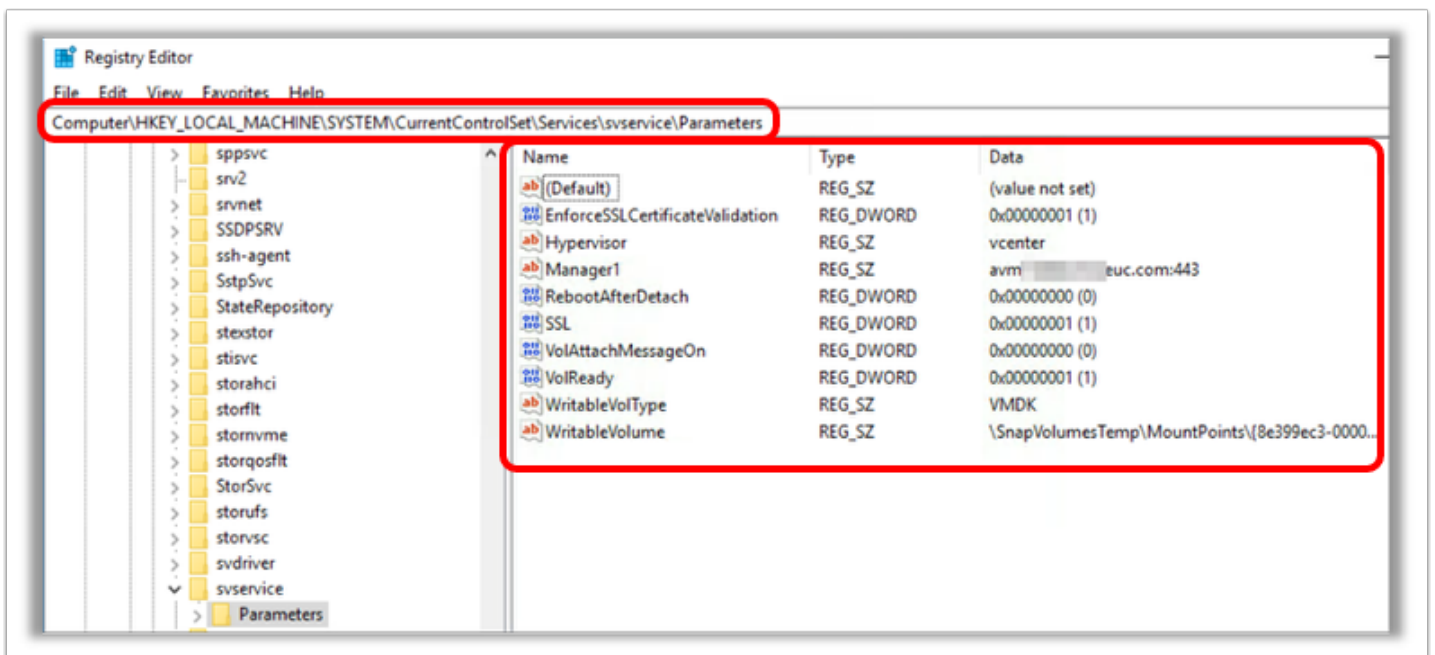
Navigate to [https://<avm\\_FQDN>/log](https://<avm_FQDN>/log) and find the timestamp you noted in the previous exercise. Look for any errors. If errors are found, troubleshoot and open a ticket with VMware Global Support Services as needed.

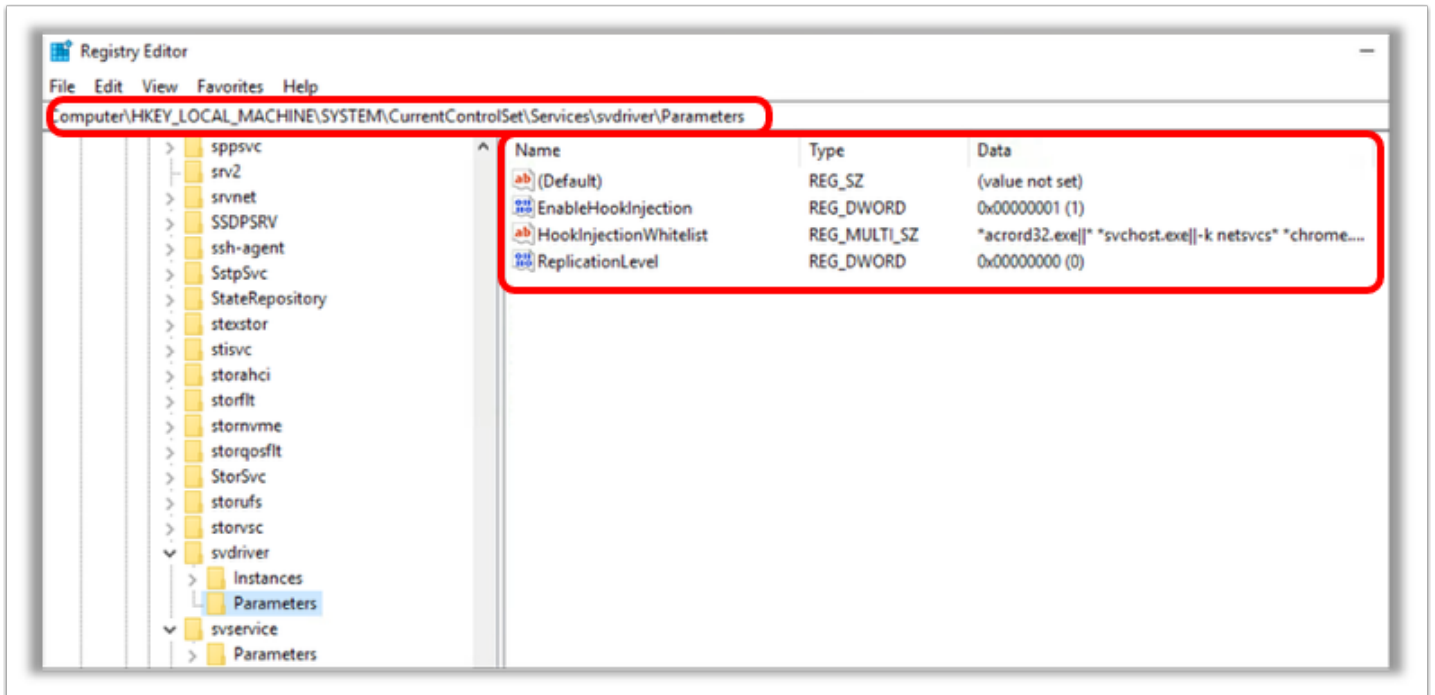
## Upgrading App Volumes Agents

### Verifying Existing App Volumes Agents

Before you upgrade the agents, note the Windows Registry configuration information, for comparison purposes later if you find upgrade issues. Also verify that the newly upgraded App Volumes Manager servers work with the existing agents.

## 1. Record the Current Registry Settings



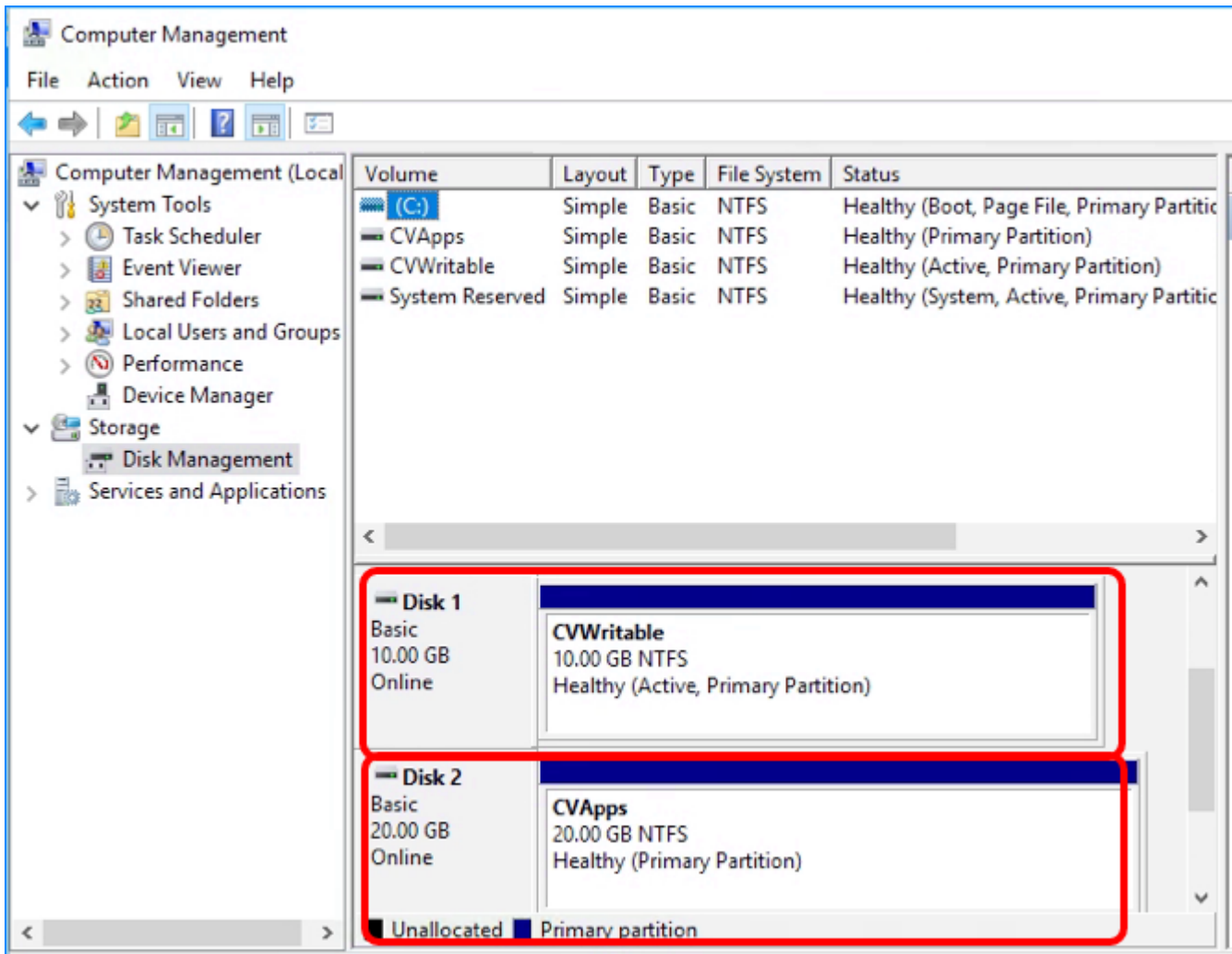


1. On the App Volumes Agent machine, open the Registry Editor and navigate to the following paths:  
 HKLM\SYSTEM\CurrentControlSet\services\svservice\Parameters  
 HKLM\SYSTEM\CurrentControlSet\services\svdriver\Parameters
2. Take a screenshot of all the information listed in each path.

This information is for troubleshooting purposes. If the upgrade is successful, you will not need to refer to this information again.

## 2. Verify That the Upgraded App Volumes Manager Works with Current Agents





1. Log in as an end user to a desktop that has the current App Volumes Agent installed.
2. Verify that AppStacks and writable volumes are attached and working as expected now that you have upgraded the App Volumes Manager servers.  
For example, you could open Disk Management to view that writable volumes (**CVWritable** in the screenshot) and AppStacks (**CVApps** in the screenshot) are attached.

### Optional Steps to Disable Certificate Validation with App Volumes Manager

These steps are only necessary if you want to disable secure communications between the App Volumes Agent and App Volumes Manager. This can be useful for initial testing, but should be changed to secure communications for production implementations.

1. In the Registry Editor, navigate to: `HKLM\System\CurrentControlSet\Services\svservices\Parameters`
2. Set the **SSL** key (zero).
3. Restart the App Volumes service.

### Upgrading App Volumes Agents

1. Log in with Administrator privileges to the machine where the App Volumes Agent is installed.
2. Before beginning the App Volumes Agent upgrade process, make sure there are no AppStacks or writable volumes attached.  
For example, open Disk Management to view the disks.
3. Stop the App Volumes Agent service.
4. Install the latest App Volumes Agent.

### Verifying a Successful App Volumes Agent Upgrade

1. Test for end-user functionality using a VM with the new App Volumes Agent installed.

2. Verify AppStacks and writable volumes are attaching and working as expected before upgrading the App Volumes Agent on additional machines.

## Upgrading App Volumes Templates

### Preserving Existing Templates

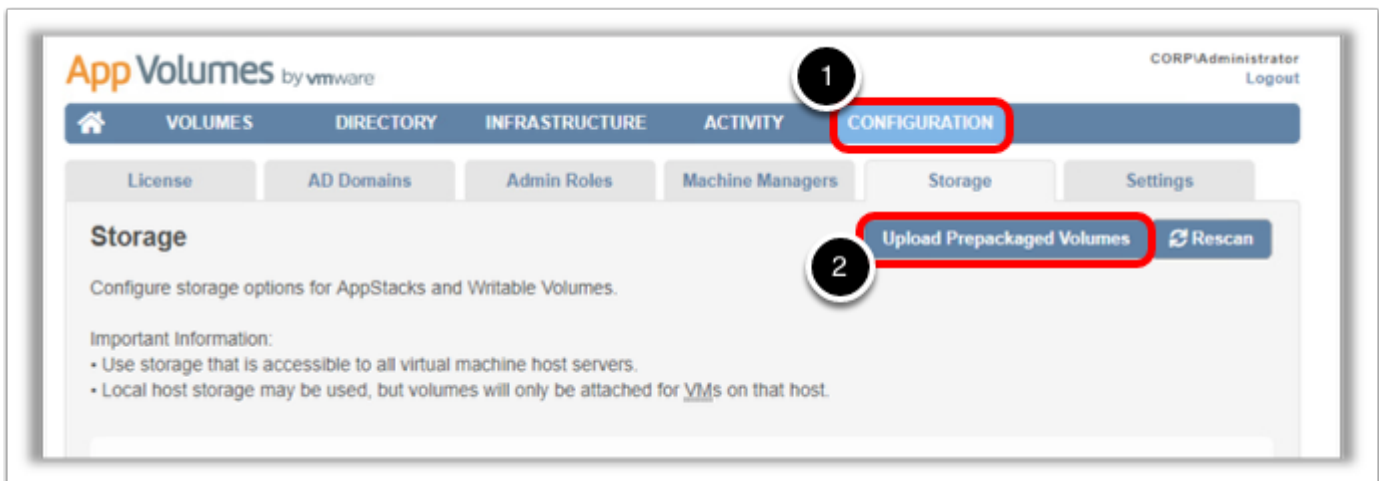
An App Volumes Manager upgrade will not automatically upgrade the existing templates.

There are multiple reasons why you might need to keep the current or existing templates in place for days or even weeks, especially in a production environment. For example, if you have customized templates, you might need to keep the existing version until you've had the time to customize, test, and upgrade to the new templates.

### Upgrading App Volumes Templates

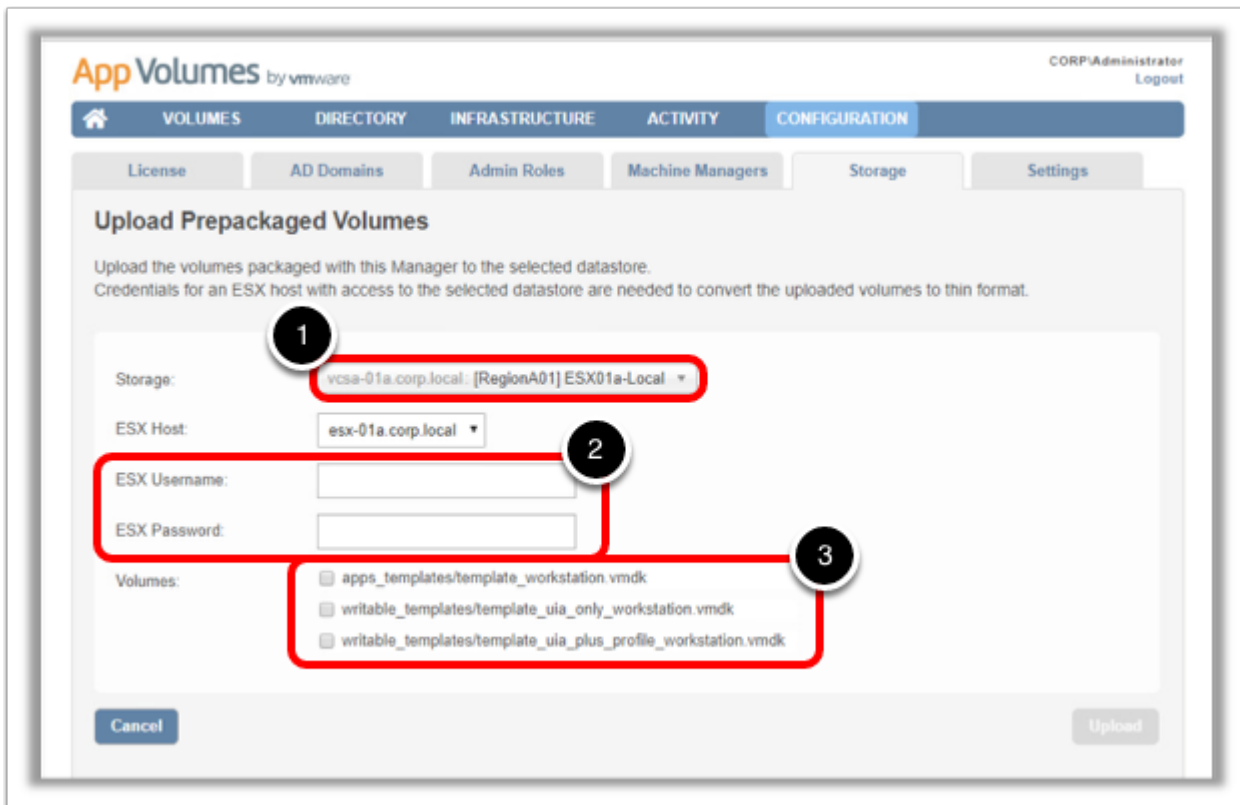
After you upgrade the App Volumes Manager servers, you must upload the prepackaged App Volumes templates again.

## 1. Select Upload Prepackaged Volumes



1. In the App Volumes Manager console, navigate to the **Configuration** tab.
2. Select **Upload Prepackaged Volumes**.

## 2. Enter Information for Accessing the Templates



1. Choose the storage location where you keep your App Volumes templates.
2. Enter your ESX username and password.
3. Choose which templates you want to upgrade, and click **Upload**.

## Summary and Additional Resources

### Summary

This operational tutorial provided recommended practices to upgrade App Volumes Manager servers and App Volumes Agents.

For information on upgrades of App Volumes AppStacks and writable volumes, see [Updating AppStacks and Writable Volumes: VMware App Volumes Operational Tutorial](#).

For more operational tutorials on VMware App Volumes, see [VMware Digital Workspace Tech Zone](#).

### Additional Resources

For more information, you can explore the following resources:

- [Quick-Start Tutorial for VMware App Volumes](#)
- [Updating AppStacks and Writable Volumes: VMware App Volumes Operational Tutorial](#)
- [VMware App Volumes Administration Guide](#)
- [VMware App Volumes Installation Guide](#)

### About the Author and Contributors

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## Feedback

To comment on this paper, contact VMware End-User-Computing Technical Marketing at [euc\\_tech\\_content\\_feedback@vmware.com](mailto:euc_tech_content_feedback@vmware.com).



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