



# **Managing high availability**

## **OnCommand Workflow Automation 5.1**

NetApp  
August 30, 2024

# Table of Contents

- Managing high availability ..... 1
  - Set up Workflow Automation in VCS for high availability ..... 1
  - Configure an earlier version of OnCommand Workflow Automation for high availability ..... 5
  - Uninstall Workflow Automation in a VCS environment. .... 6
  - Back up and restore the OnCommand Workflow Automation database and configurations on Linux. .... 7

# Managing high availability

You can configure a high-availability setup to provide constant support for network operations. If one of the components fail, the mirrored component in the setup takes over the operation and provides uninterrupted network resources. You can also back up the WFA database and supported configurations so that you can recover the data in case of a disaster.

## Set up Workflow Automation in VCS for high availability

You must install and configure Workflow Automation (WFA) in a Veritas Cluster Server (VCS) environment to set up high availability and provide failover. Before you install WFA, you must verify that all required components are configured correctly.

A high-availability setup provides constant support for application operations. If one of the components fails, the mirrored component in the setup takes over the operation and provides uninterrupted network resources.



VCS is the only clustering solution that is supported by WFA on Linux.

## Configure VCS to install OnCommand Workflow Automation

Before you install OnCommand Workflow Automation (WFA) in Veritas Cluster Server (VCS), you must ensure that the cluster nodes are properly configured to support WFA.

- VCS must be installed on both nodes of the cluster according to the instructions in the *Veritas Cluster Server 6.1.1 Installation Guide*.
- To receive notifications about cluster events, VCS software must be configured for SNMP and SMTP according to the instructions in the *Veritas Cluster Server Administrator's Guide*.
- All requirements and guidelines for configuring cluster servers must be met according to the VCS documentation.
- SnapDrive for UNIX must be installed if you want to create LUNs using SnapDrive for UNIX.
- Both the cluster nodes must be running a supported version of the operating system.

The minimum supported operating systems are Red Hat Enterprise Linux 7.0 and VCS 6.1.1.

- The same version of WFA must be installed using the same path on both the cluster nodes.
- The WFA server must be connected to the storage system through Fibre Channel (FC) or iSCSI.
- The latency must be minimum between the WFA server and the storage system.
- The FC link must be active, and the LUNs that are created must be accessible to both the cluster nodes.
- A minimum of two network interfaces must be set up on each system: one for node-to-node communication and the other for node-to-client communication.
- The name of the network interface used for node-to-client communication should be the same on both the systems.
- A separate heartbeat link must be established between the cluster nodes; otherwise, the network interface is used to communicate between the cluster nodes.

- A shared location must be created for high availability.

You can use SnapDrive for UNIX to create the shared location.

You can also manage the LUNs using SnapDrive or the storage system command-line interface. See the SnapDrive for UNIX compatibility matrix for more information.

## Steps

1. Verify that VCS is installed correctly: `hastatus -summary`

Both the nodes must be online, and the VCS service must be running on both the nodes.

2. Verify that the LUNs are accessible to both the nodes by using one of the following options:
  - Manage the LUNs natively.
  - Use SnapDrive for UNIX:
    - i. Install SnapDrive for UNIX on both the nodes.
    - ii. Configure SnapDrive for UNIX on both nodes.
    - iii. From the first node, run the `snapdrive storage create` command to create a LUN.
    - iv. Verify that the LUN created on the first node is visible on the second node by running the `snapdrive storage show -all` command.

## Install OnCommand Workflow Automation on Linux

You can install OnCommand Workflow Automation (WFA) by using the command-line interface (CLI).

- You must have reviewed the installation prerequisites.

### [Installation prerequisites](#)

- You must have downloaded the WFA installer from the NetApp Support Site.

If you are installing WFA on a virtual machine (VM), the name of the VM must not include the underscore (`_`) character.

You can change the default installation location at the shell prompt: `./WFA-version_number.bin [-i WFA_install_directory] [-d mysql_data_directory]`

If you change the default installation location, the MySQL data directory is not deleted when you uninstall WFA. You must manually delete the directory.



Before reinstalling WFA 4.2 or later, you must delete the MySQL data directory if you have uninstalled MySQL.

## Steps

1. Log in to the Linux server as a `root` user.
2. Navigate to the directory where the executable `.bin` file is located.
3. Install WFA by choosing one of the following methods:

◦ Interactive installation

- i. Start the interactive session: `./WFA-version_number.bin`
- ii. Enter the credentials for the default admin user, and then press Enter.

You must note the credentials for the admin user and ensure that the password meets the following criteria:

- Minimum of eight characters
- One uppercase character
- One lowercase character
- One numeral
- One special character
- The following special characters are not supported in a password and cause installation failure:

``" ; < > , = & ^ |`

- iii. Accept the default ports for WFA configuration or provide custom ports, and then press Enter.
- iv. Specify your company name and a site name, and then press Enter.

The site name can include the location of the WFA installation, for example, Pittsburgh, PA.

- v. Verify that WFA is installed successfully by choosing one of the following actions:
  - Access WFA through a web browser.
  - Verify that the NetApp WFA Server service and the NetApp WFA Database service are running:

```
service wfa-server status
service wfa-db status
```

◦ Silent installation

At the shell prompt:

```
./WFA-version_number.bin [-u admin_user_name] [-p admin_user_password] [-m https_port] [-n http_port] [-c company_name] [-s site_name] [-i install_directory] [-d mysql_data_directory] [-y] [-b]
```

If you want to perform a silent installation, you must specify values for all of the command options. The command options are as follows:

Option	Description
-y	Option to skip Skips the installation confirmation
-b	Option to skip Skips creating a backup of the WFA database during an upgrade

Option	Description
-u	Admin user name
-p	Admin user password The admin user password must satisfy the following criteria: <ul style="list-style-type: none"> <li>• Minimum of eight characters</li> <li>• One uppercase character</li> <li>• One lowercase character</li> <li>• One numeral</li> <li>• One special character</li> <li>• The following characters are not allowed and cause password input to fail:  `" ; &lt; &gt; , = &amp; ^  </li> </ul>
-m	HTTPS port
-n	HTTP port
-s	Site name
-c	Company name
-i	Installation directory path
-d	MySQL data directory
-h	Option to display Displays the Help

## Related information

[NetApp Support](#)

## Configure Workflow Automation in VCS

After you install Workflow Automation (WFA) in VCS, you must configure WFA in VCS using configuration scripts for high availability.

- You must have installed the same version of WFA on both the cluster nodes.
- You must have the same installation path for both the nodes.
- You must create a backup of WFA.

## Steps

1. Log in to the first node of the cluster.
2. Use Cluster Manager to verify that the HA state of both nodes is running.
3. At the shell prompt, run the `ha_setup.pl` script to move the WFA data to the shared location and to configure WFA with VCS for failover: `perl ha_setup.pl --first [-t type_of_cluster_vcs] [-g cluster_group_name] [-e NIC_card_name] [-i IP_address] [-m Netmask] [-n cluster_name] [-f mount_point_of_shared_LUN] [-v name_of_logical_volume] [-d disk_group_name] [-l install_directory]`

For the default installation location, the script is available at `/opt/netapp/wfa/bin/ha/`.

```
perl ha_setup.pl --first -t vcs -g WFA -e eth0 -i 10.238.170.3 -m
255.255.255.0 -n wfa_cluster -f /mnt/wfa_mount/ -v lun_volume -d lun_dg -l
/opt/netapp/wfa
```

4. Use Cluster Manager to verify that the WFA services, mount point, virtual IP, NIC, and volume group are added to the cluster group.
5. Use Cluster Manager to move the WFA resources to the secondary node:
  - a. Select and right-click the cluster group.
  - b. Select **Switch To > Secondary Node**.
6. Verify that the data mount, virtual IP, volume group, and NIC cards are up on the second node of the cluster.
7. Take the WFA services offline by using Cluster Manager:
  - a. Select **WFA > Application > wfa-server**.
  - b. Right-click and select **Offline**.
  - c. Select **WFA > Application > wfa-db**.
  - d. Right-click and select **Offline**.
8. At the shell prompt, run the `ha_setup.pl` script on the secondary node of the cluster to configure WFA to use the data from the shared location: `perl ha_setup.pl --join [-t type_of_cluster_vcs] [-f mount_point_of_shared_LUN]`

For the default installation location, the script is available at `/opt/netapp/wfa/bin/ha/`.

```
perl ha_setup.pl --join -t vcs -f /mnt/wfa_mount/
```

9. Go to Cluster Manager and click **Cluster Group > Online > Server**.

It might take a while before Cluster Manager shows that the application resources are online. You can also right-click the application resources and verify whether the resources are online.

10. Ensure that WFA is accessible through the IP address used during this configuration.

## Configure an earlier version of OnCommand Workflow Automation for high availability

You can configure OnCommand Workflow Automation (WFA) versions earlier than 3.1 for high availability.

## Steps

1. Upgrade the existing version of WFA to the latest available version of WFA.

### [Upgrade WFA](#)

This upgraded version of WFA is the primary node of the cluster.

2. Create a backup of the WFA database.

### [Backing up the WFA database](#)

If any of the parameters were changed manually, you must create a backup of the WFA database, uninstall the existing WFA installation, install the latest available version of WFA, restore the backup, and then proceed with the Veritas Cluster Server (VCS) configuration.

3. Configure VCS to install WFA on the primary node.

### [Configure VCS to install WFA](#)

4. Install the latest available version of WFA on the secondary node.

### [Install WFA](#)

5. Configure WFA in VCS.

### [Configure WFA in VCS](#)

The WFA server is configured for high availability.

## Uninstall Workflow Automation in a VCS environment

You can uninstall Workflow Automation (WFA) from a cluster by deleting all the WFA services from the cluster nodes.

## Steps

1. Take the services offline by using Cluster Manager:
  - a. Right-click the cluster group.
  - b. Select **Offline**, and then select the node.
2. Uninstall WFA on the first node, and then uninstall WFA on the second node.

### [Uninstall OnCommand Workflow Automation](#)

3. Delete the cluster resources from Cluster Manager:
  - a. Right-click the cluster group.
  - b. Select **Delete**.
4. Manually delete the data in the shared location.



# Back up and restore the OnCommand Workflow Automation database and configurations on Linux

You can back up and restore the OnCommand Workflow Automation (WFA) database and supported configurations so that you can recover the data in case of a disaster. The supported configurations include data access, HTTP timeout, and SSL certificates.

You must have administrator privileges or architect credentials.

You must create the backup in a secure location because restoring the backup will provide access to all the storage systems that are accessed by WFA.



- A comprehensive backup of WFA databases and configurations is required during disaster recovery and can be used in both standalone and high-availability environments.
- You can use only the CLI commands or REST APIs for comprehensive backup and restore operations during disaster recovery.

You cannot use the web UI for backing up or restoring the WFA database during disaster recovery.

## Steps

1. Back up the OnCommand Workflow Automation database.

[Backing up the OnCommand Workflow Automation database](#)

2. Restore a previous backup of the OnCommand Workflow Automation database.

[Restoring the OnCommand Workflow Automation database](#)

## Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

## Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.