StarWind Virtual SAN: Feature Configuration Guide for Deploying Zabbix Templates to Enable Centralized Infrastructure Monitoring

2025

TECHNICAL PAPERS

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StarWind is a pioneer in virtualization and a company that participated in the development of this technology from its earliest days. Now the company is among the leading vendors of software and hardware hyper-converged solutions. The company’s core product is the years-proven StarWind Virtual SAN, which allows SMB and ROBO to benefit from cost-efficient hyperconverged IT infrastructure. Having earned a reputation of reliability, StarWind created a hardware product line and is actively tapping into hyperconverged and storage appliances market. In 2016, Gartner named StarWind “Cool Vendor for Compute Platforms” following the success and popularity of StarWind HyperConverged Appliance. StarWind partners with world-known companies: Microsoft, VMware, Veeam, Intel, Dell, Mellanox, Citrix, Western Digital, etc.

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Annotation

Relevant Products

This guide is applicable to StarWind Virtual SAN and StarWind Virtual SAN Free (Version V8 (Build 15260, CVM Version 20231016) and later) and Zabbix v5.4.

Audience

This technical guide is intended for IT professionals and system administrators responsible for managing HCI environments, especially those overseeing multi-site deployments in diverse settings such as traditional data centers, remote industrial facilities, or mission-critical operations.

Expected Result

By following this guide, readers will gain the skills to set up and use StarWind Fleet Manager for centralized monitoring, automated updates, and efficient management of HCI environments. This enables improved performance, reliability, and scalability while reducing administrative overhead and operational costs.

System Requirements

Since the configuration involves StarWind CVM, Zabbix agent, and Zabbix server, the system requirements are defined by the components used in the configuration.

Internet connectivity is required on StarWind CVM to install the Zabbix agent package.

Port 10050 (default) is required for connectivity to the Zabbix server.

StarWind CVM system requirements:
https://www.starwindsoftware.com/system-requirements

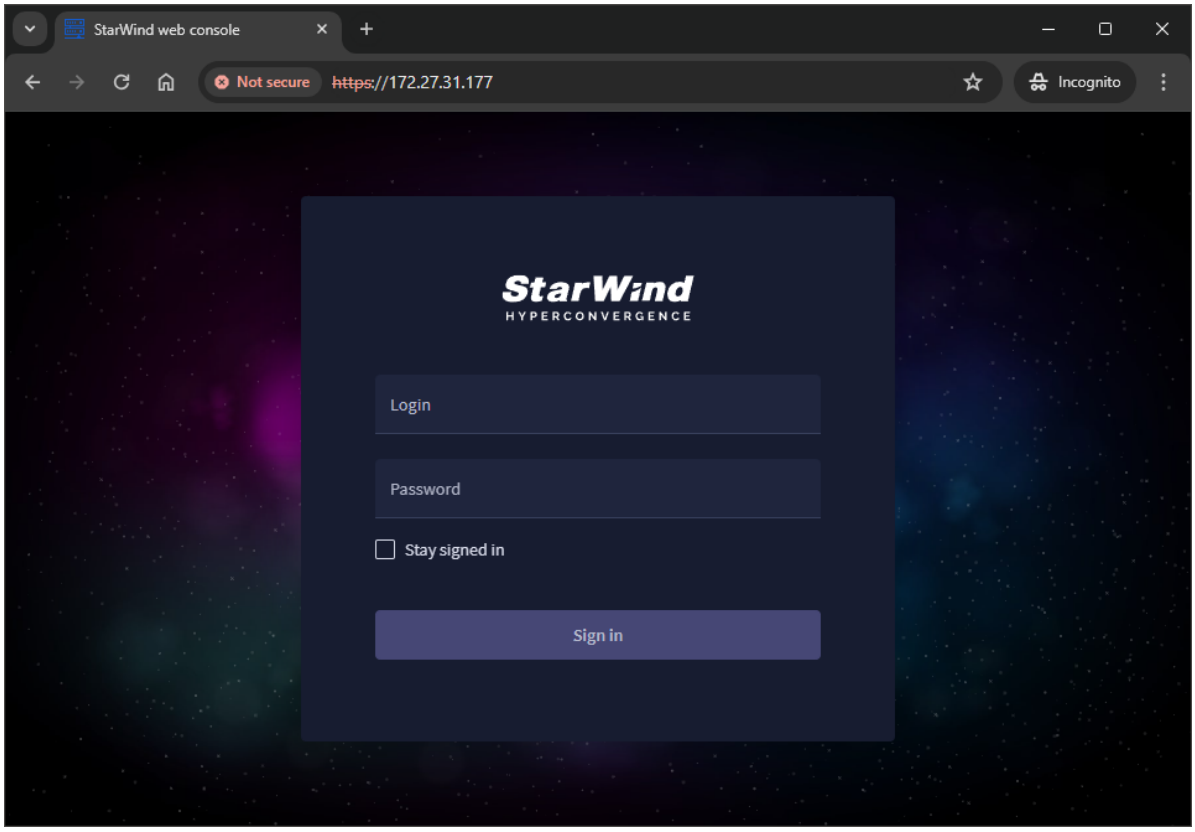
Zabbix server system requirements:
https://www.zabbix.com/documentation/5.4/en/manual/installation/requirements

Pre-Configuring Starwind Cvm For Zabbix Monitoring

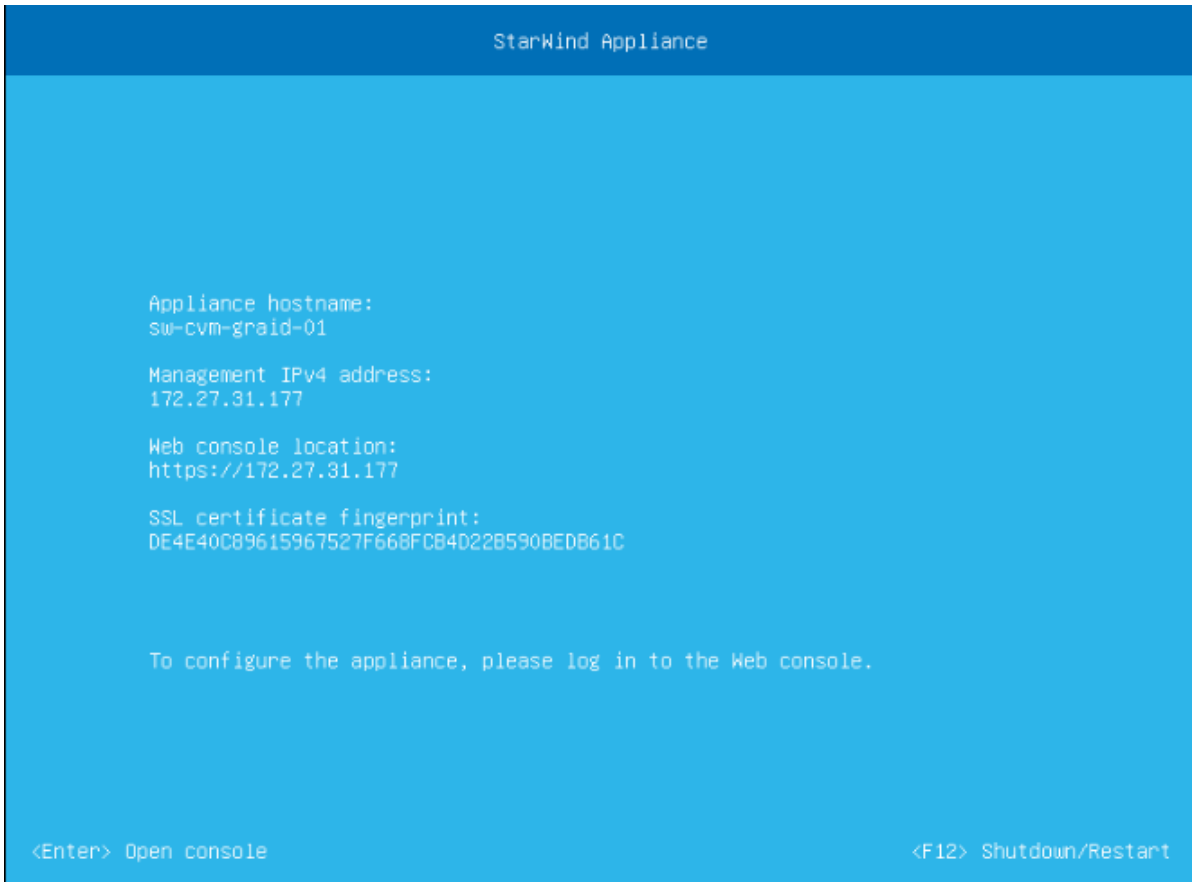
To configure the monitoring of StarWind CVM, the Zabbix Agent must first be installed on the CVM. This process requires SSH access to be enabled on the StarWind CVM.

Follow the steps below to enable SSH and install the Zabbix Agent on the StarWind CVM:

1. Using the browser, log into the StarWind CVM web console.

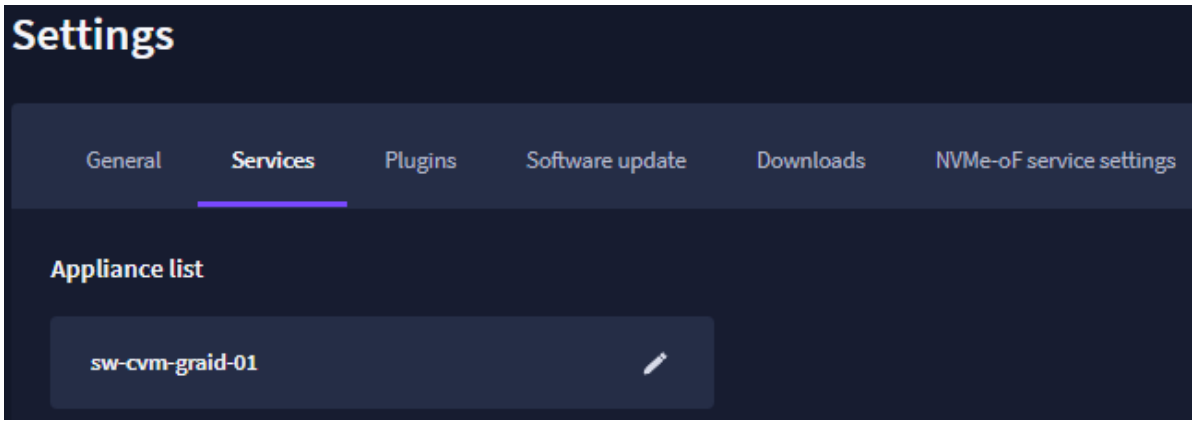


NOTE: The StarWind CVM web console IP address can be found in the terminal user interface (TUI).

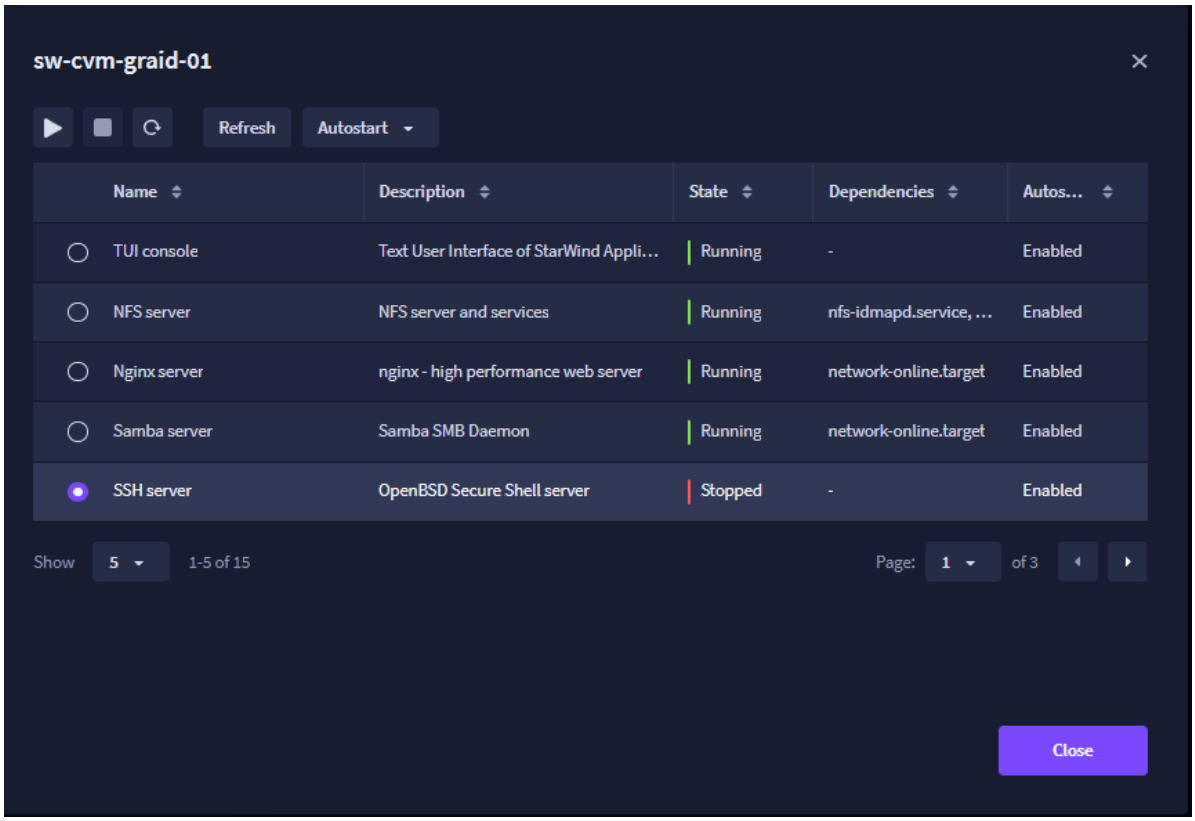


2. Click the  button at the top right of the window to access StarWind CVM settings.

3. Navigate to Services and click the Edit button.

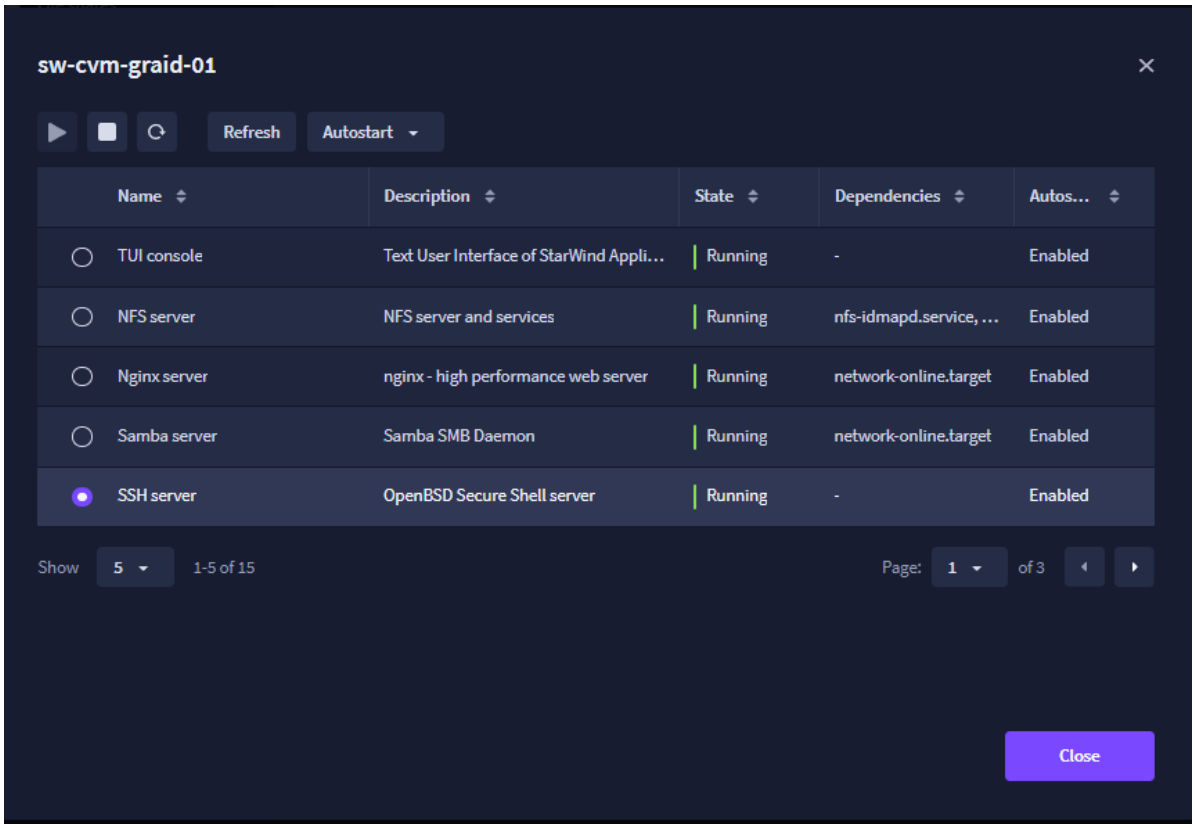


4. Locate the *SSH server* and press the Run button.



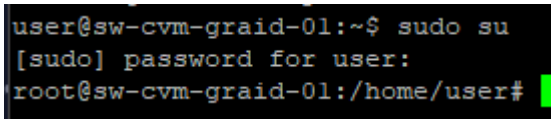
5. In the window, press the Start button to start the SSH service.

6. Make sure the SSH server state is Running, and then click Close.



7. Connect to StarWind CVM via SSH client client (e.g., Putty).

8. Type *sudo su* and type in the password: |



NOTE: The user must have an administrator role. Use the account created during the initial installation wizard or create a new one via Web UI (*Users* -> + -> *Fill in the blanks* -> *Specify user roles* -> *Create*).\

NOTE: The steps below imply internet connectivity in the StarWind CVM.

9. Add the apt repository for the Zabbix Agent from the official repository.

Use the *wget* command to download the latest **.deb* package.

Alternatively, save it locally and copy it to StarWind VSAN CVM with WinSCP, FileZilla, etc.

10. Type: *dpkg -i <package_name_deb>.deb*

11. Type: *apt update*

12. Install the Zabbix Agent: *apt install zabbix-agent2*

13. Repeat the steps above on each StarWind CVM that should be added to the monitoring.

Deploying Zabbix Server From Starwind'S Iso

NOTE: Skip this step if a Zabbix server has already been deployed.

1. Deploy a VM that fits the minimum requirements.

2. Attach StarFleet ISO, downloaded here: https://www.starwindsoftware.com/fleet-management

3. Start the VM and boot from ISO for the OS installation.

4. Configure internet connectivity on the deployed VM.

Setting Up The Zabbix Agent Inside Starwind Cvm

NOTE: The steps below require superuser privileges.

1. Connect to StarWind CVM via SSH client client (e.g., Putty).

2. Type *sudo su* and type in the password:

```
user@sw-cvm-graid-01:~$ sudo su
[sudo] password for user:
root@sw-cvm-graid-01:/home/user#
```

3. Open port *10050* for communication: *ufw allow 10050*

4. Grant permissions for Zabbix by editing */etc/sudoers* to allow Zabbix to restart StarWind VSAN services and reboot:

```
zabbix ALL=(ALL) NOPASSWD: /bin/systemctl restart starwind*

zabbix ALL=(ALL) NOPASSWD: /sbin/reboot
```

Locate the Zabbix agent configuration file: *nano /etc/zabbix/zabbix_agent2.conf*

Edit the following lines in the configuration file:

```
PidFile=/var/run/zabbix/zabbix_agent2.pid

LogFile=/var/log/zabbix/zabbix_agent2.log

LogFileSize=0

Server=<zabbix server ip address>

ServerActive=<zabbix server ip address>

HostMetadata=StarWind

Timeout=30

Include=/etc/zabbix/zabbix_agent2.d/*.conf

PluginTimeout=30

PluginSocket=/run/zabbix/agent.plugin.sock

ControlSocket=/run/zabbix/agent.sock

AllowKey=system.run[*]

Include=/etc/zabbix/zabbix_agent2.d/plugins.d/*.conf
```

NOTE: Make sure that the correct values are set for the following lines:

```
Server=<zabbix server ip address>

ServerActive =<zabbix server ip address>

HostMetadata=StarWind
```

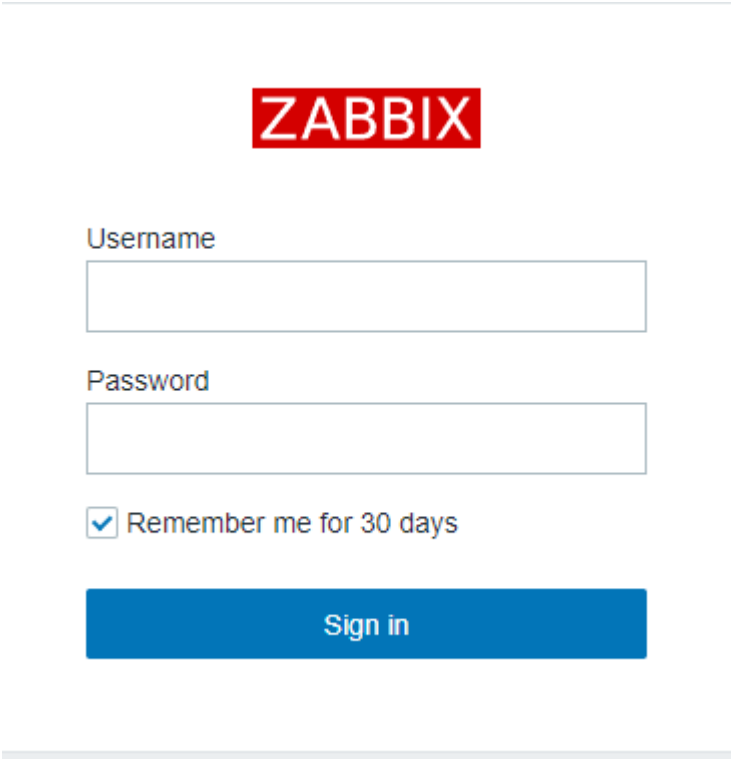
```
Timeout=30

PluginTimeout=30

AllowKey=system.run[*]
```

Restart the Zabbix Agent in StarWind CVM: *systemctl restart zabbix-agent2.service*

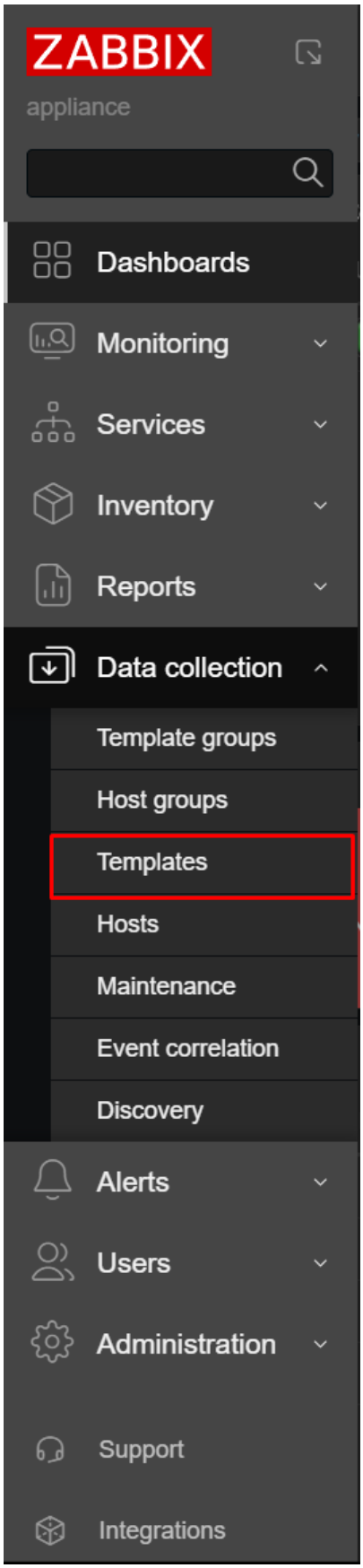
Integrating Starwind Cvm Into An Existing Deployment

This step involves connecting and importing the template into an already deployed Zabbix VM.

1. Login to the Zabbix Appliance.



2. Expand Data Collection and navigate to the Templates view.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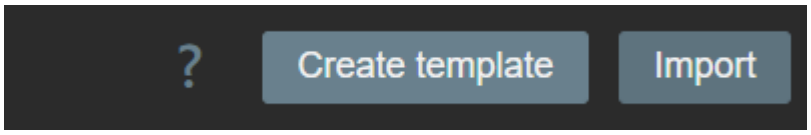
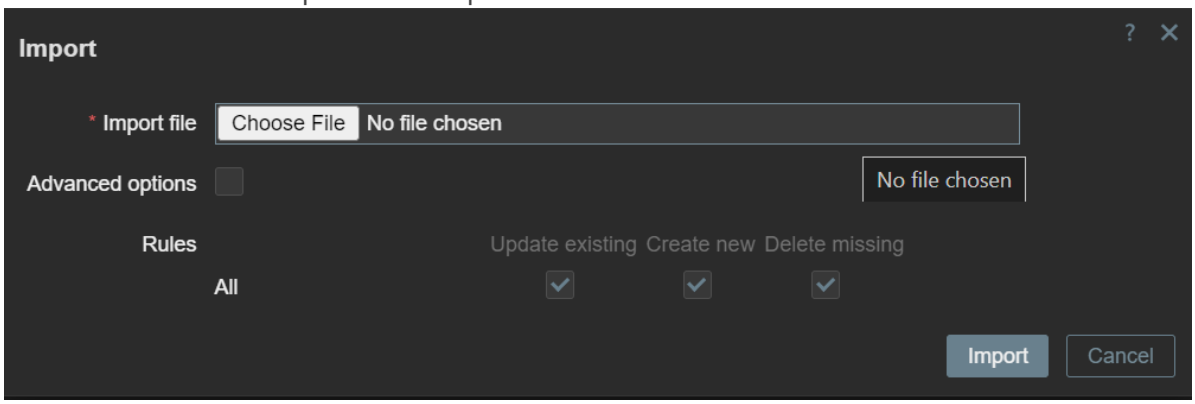
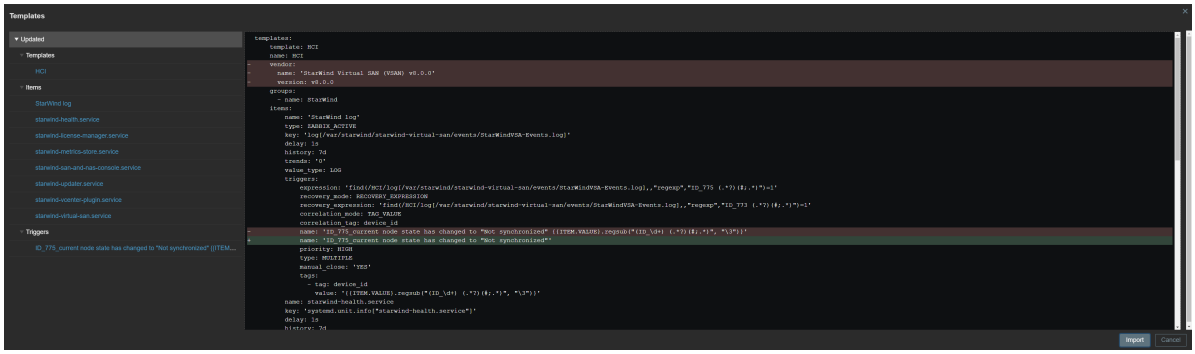
3. Press Import in the top right corner to import StarFleet template.



4. Choose the file and press the Import button.



NOTE: If the updated version of the template clashes with the existing *.*json*, the differences between them will be listed.

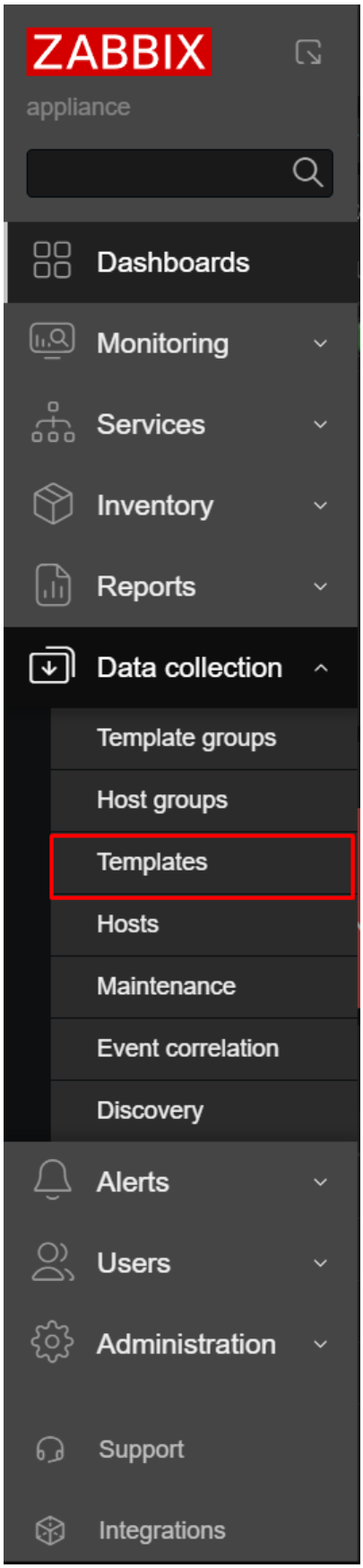


Adding Triggers And Customizing Monitoring

This section describes adding a custom trigger to Zabbix based on the event codes. The distributed Zabbix template provides the essential templates. The complete list of StarWind VSAN events is available here. It is also possible to add other metrics, e.g.,

MDRAID or PCI storage monitoring.

1. To access trigger configuration, navigate to Data Collection > Templates.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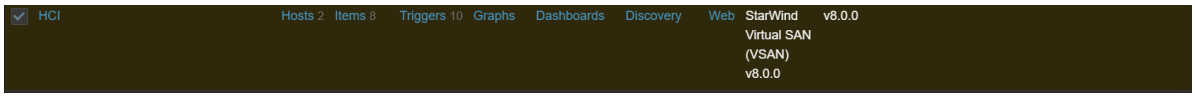
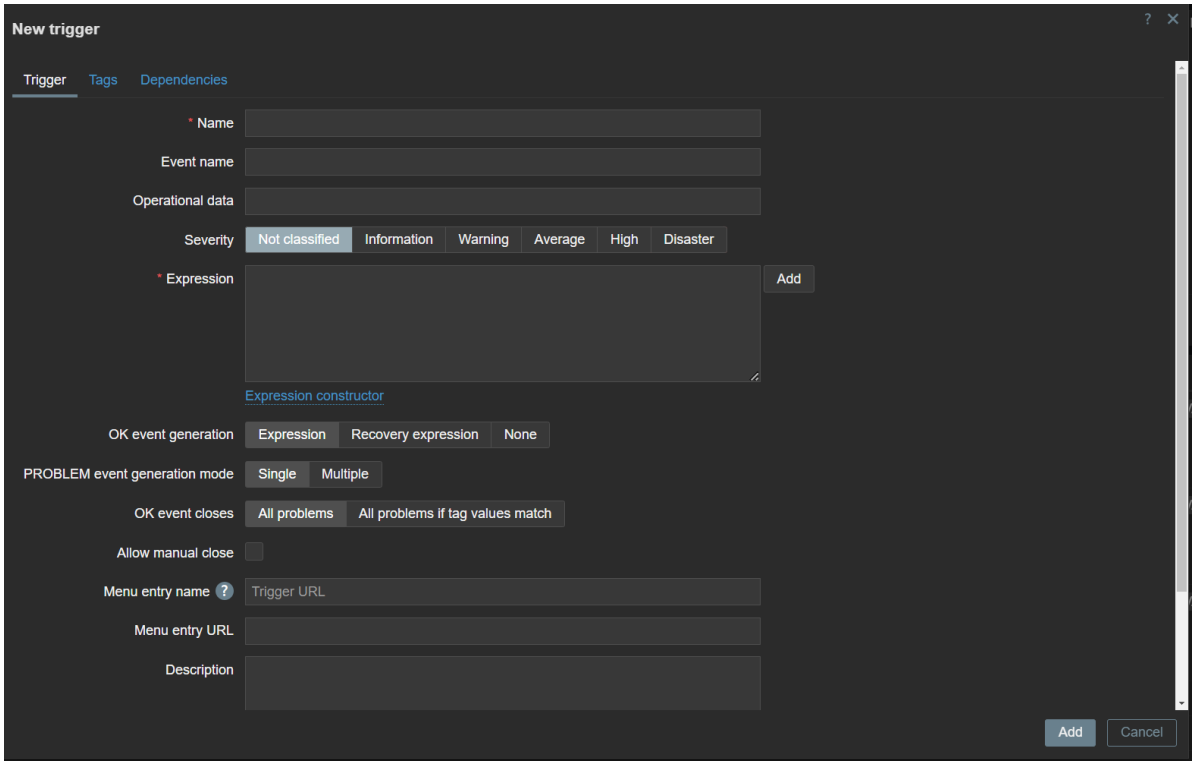
2. Locate the template that corresponds to StarWind VSAN CVM monitoring.



3. Click Triggers and select Create Trigger in the top-right corner.

4. In the New Trigger window, fill in the required fields, such as Name.



5. In the Expression field, add a custom trigger to monitor StarWind events:

```
find(/HCI/log[/var/starwind/starwind-virtual-san/events/StarWindVSA-Events.log],,"regexp","ID_<EVENT_ID>(.*?)(#;.*)")=1
```

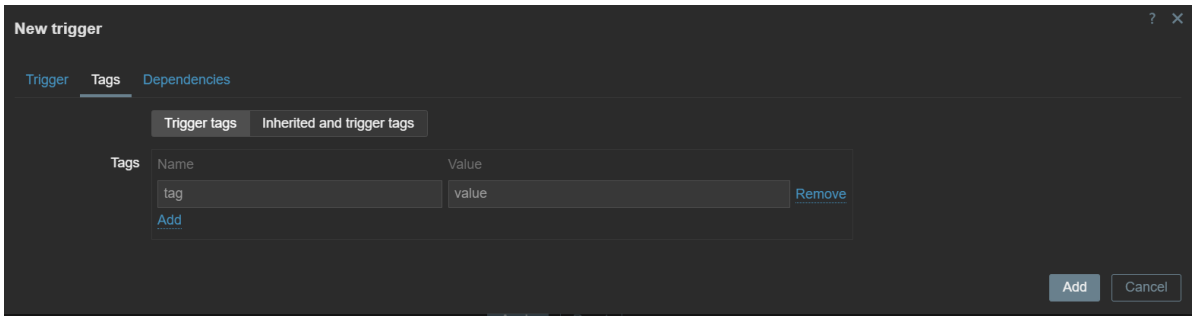
6. To resolve alerts, configure recovery expression like this:

```
find(/HCI/log[/var/starwind/starwind-virtual-san/events/StarWindVSA-Events.log],,"regexp","ID_<EVENT_ID>(.?)(#;.)")=1
```

NOTE: As an example, EVENT_ID_775 (local device synchronization drop) can be resolved by EVENT_ID_773 (local device synchronization completion).

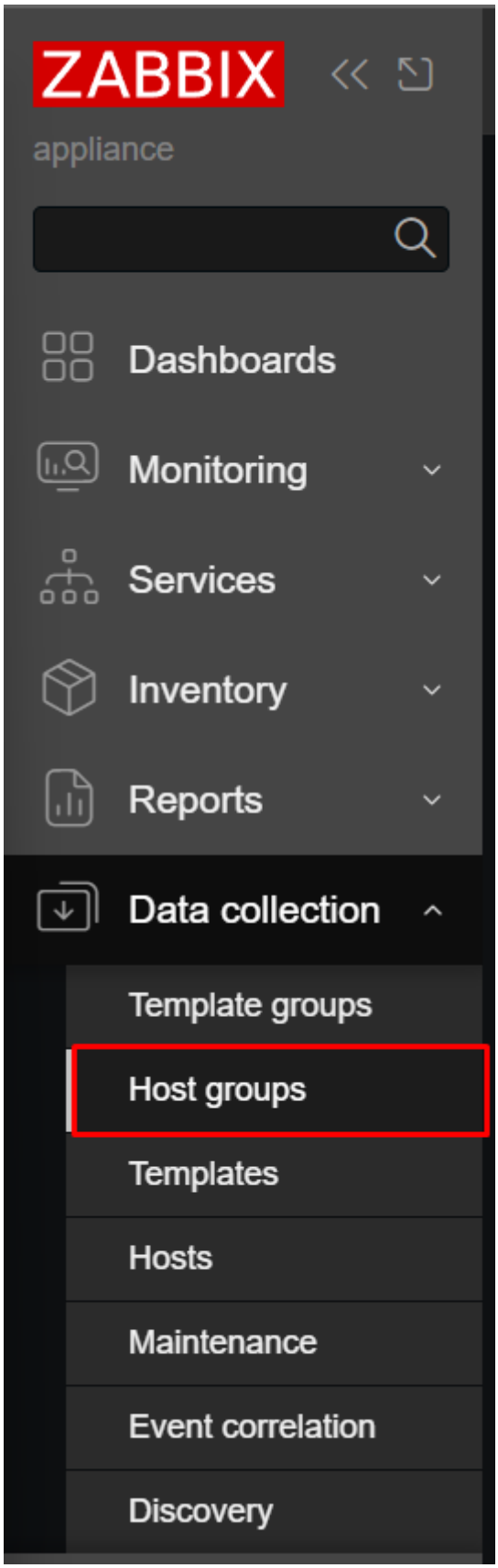
7. In the Tags tab, add/modify Tags.

NOTE: Tags simplify navigation and improve alert organization. For example, *{{ITEM.VALUE}.regsub("(ID_773|ID_775) (.?)(#;.*)", "\3")}* can be used for identifying a device that becomes not synchronized and synchronized.



Connect Starwind Cvm To Zabbix

1. To create a Host Group, navigate to Data Collection > Host Groups and press Create Host Group in the top right corner.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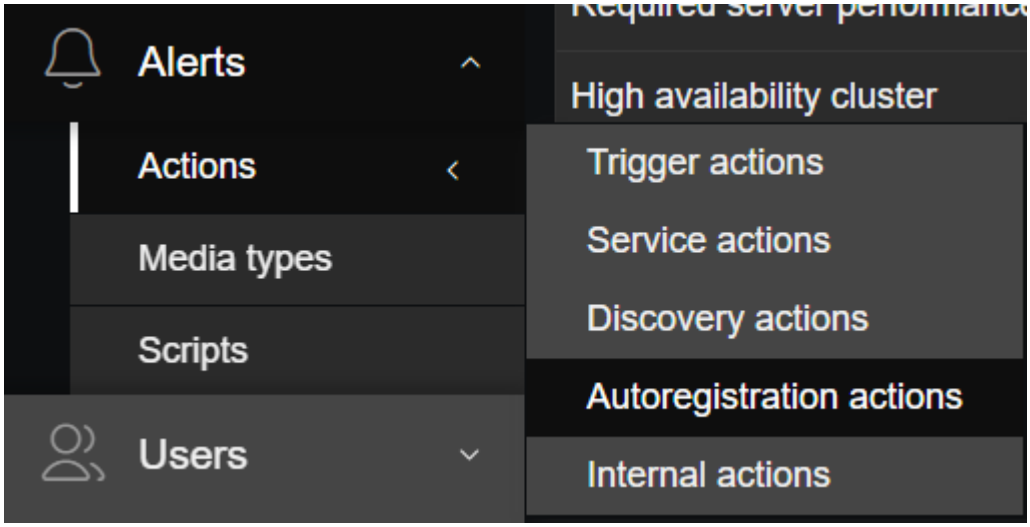
2. Name the group, e.g., StarWind.

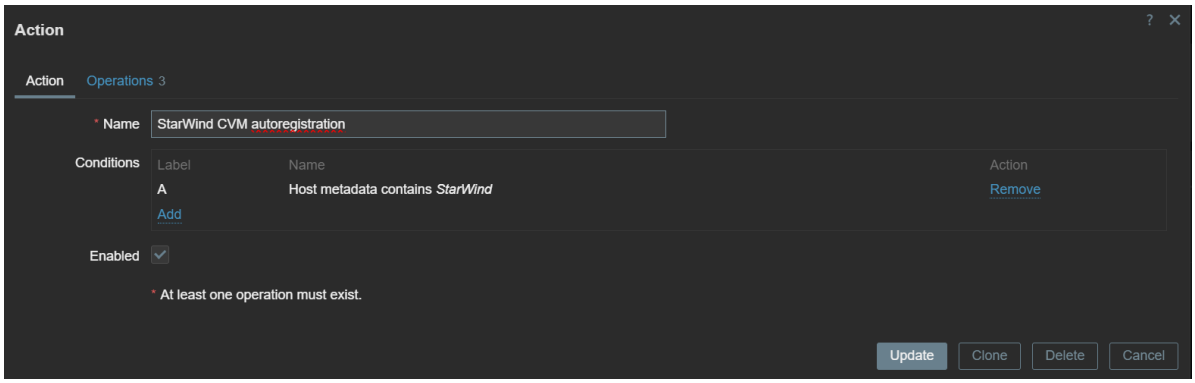
3. Enable Autoregistration to add StarWind nodes.

NOTE: This step will automatically connect all CVM instances on the network that can communicate via the 10050 port with the Zabbix server.



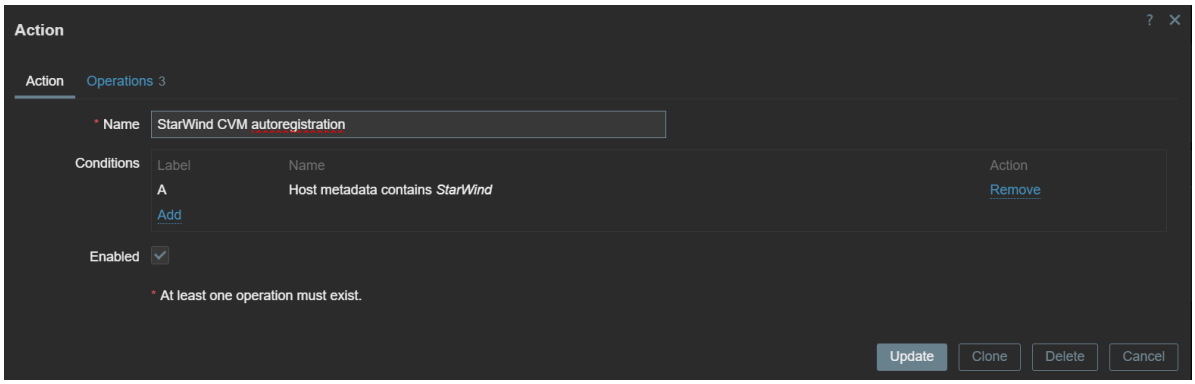
4. Ensure that all necessary fields in the Action tab are completed.

NOTE: Host metadata can be changed, but they should be aligned with ones set for the agent side.



5. Review the operations tab and edit them if required.

NOTE: At least one operation must exist.



Conclusion

Managing hyperconverged infrastructure (HCI) across multiple sites can be complex, but StarWind Fleet Manager simplifies the process by integrating seamlessly with Zabbix. This guide equips IT professionals with the tools to implement centralized monitoring, automate maintenance, and optimize multi-site HCI environments. Whether you're overseeing traditional data centers or remote, mission-critical operations, StarWind Fleet Manager ensures reliable performance, scalability, and efficient resource management, empowering you to focus on strategic goals rather than infrastructure challenges.

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