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Wazuh: Installation & Configuration

all our microphones are muted
ask your questions in Q&A, not in the Chat
use Chat for discussion, networking or applause

Agenda

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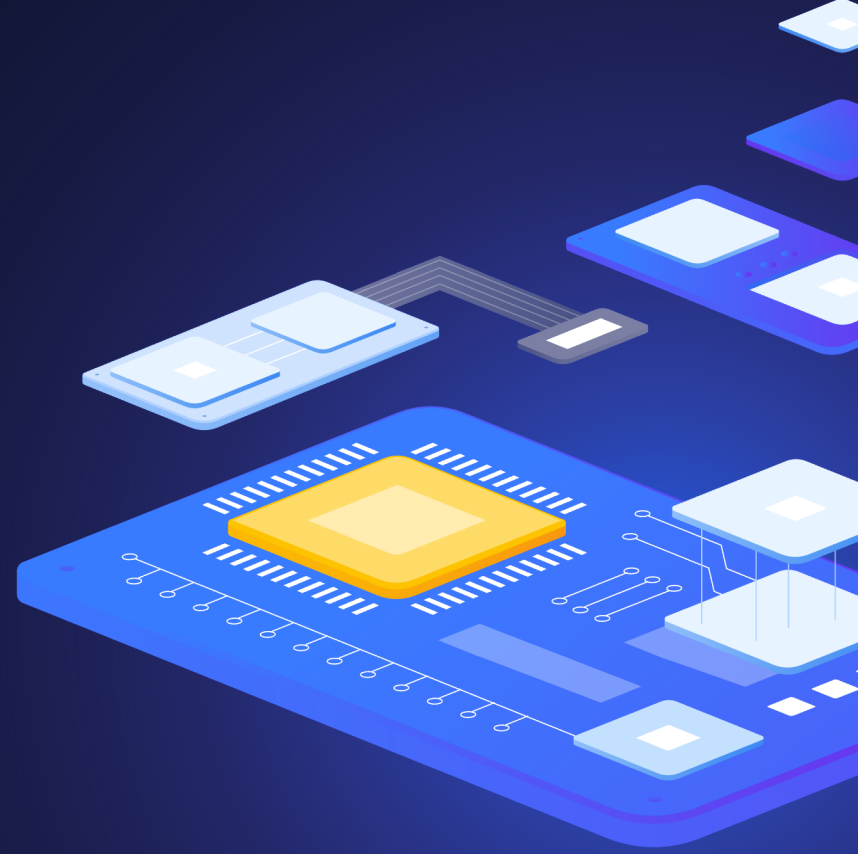
5. Demo



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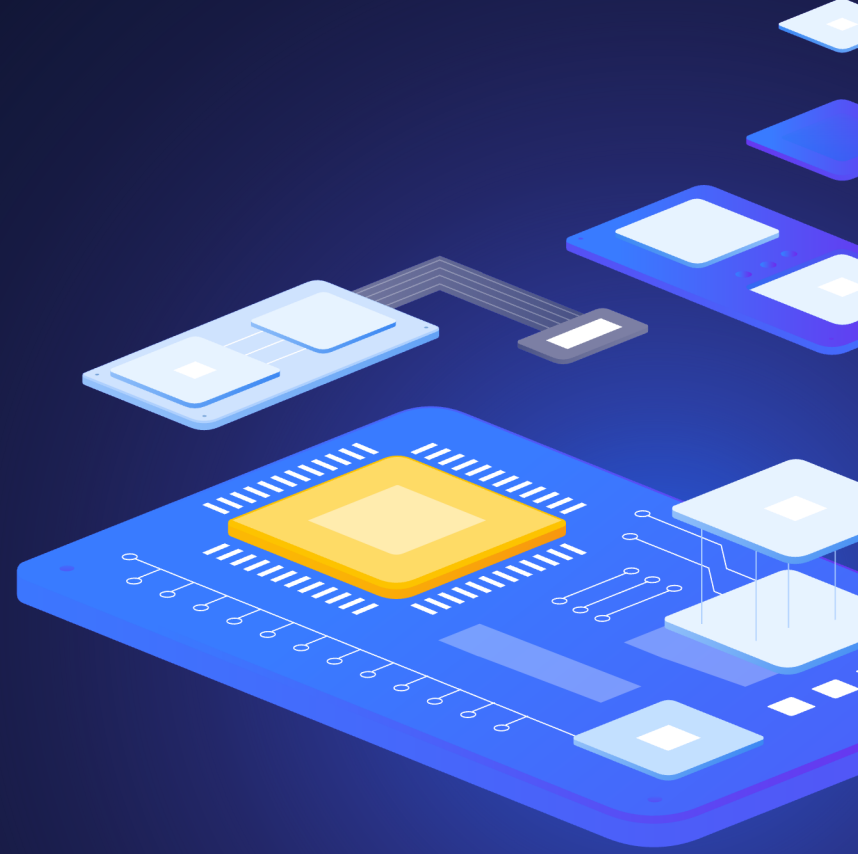
Intro



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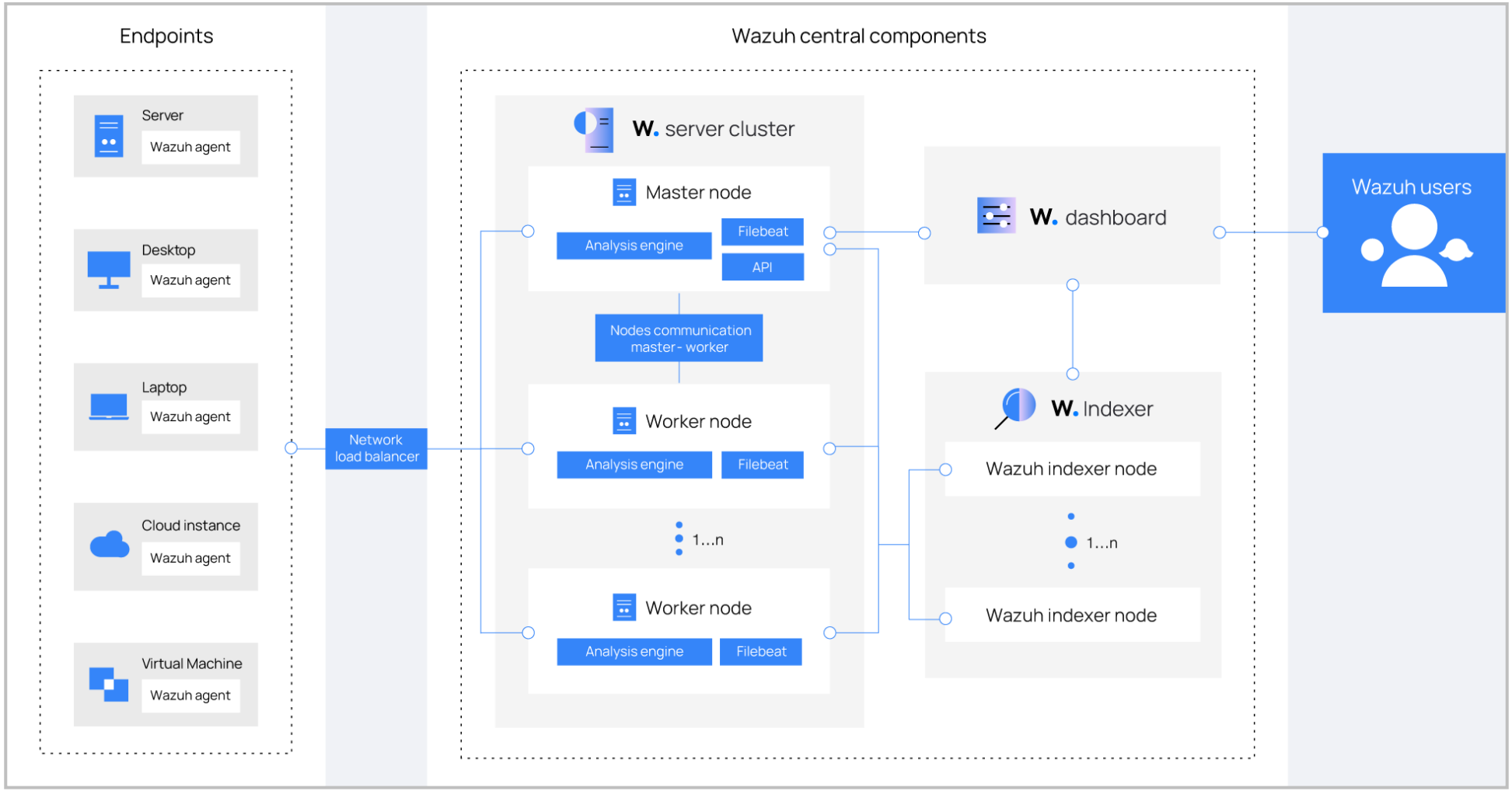
Architecture



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Requirements

- Hardware – all in one
  - The minimum requirements for 25 agents and 90 days of history are as follows:
    - 4 CPU
    - 8 GB RAM
    - 50 GB available disk space – preferably SSD

- Recommended operating systems
  - CentOS 7, 8
  - Ubuntu 16.04, 18.04, 20.04, 22.04
  - Red Hat Enterprise Linux 7, 8, 9
  - Amazon Linux 2

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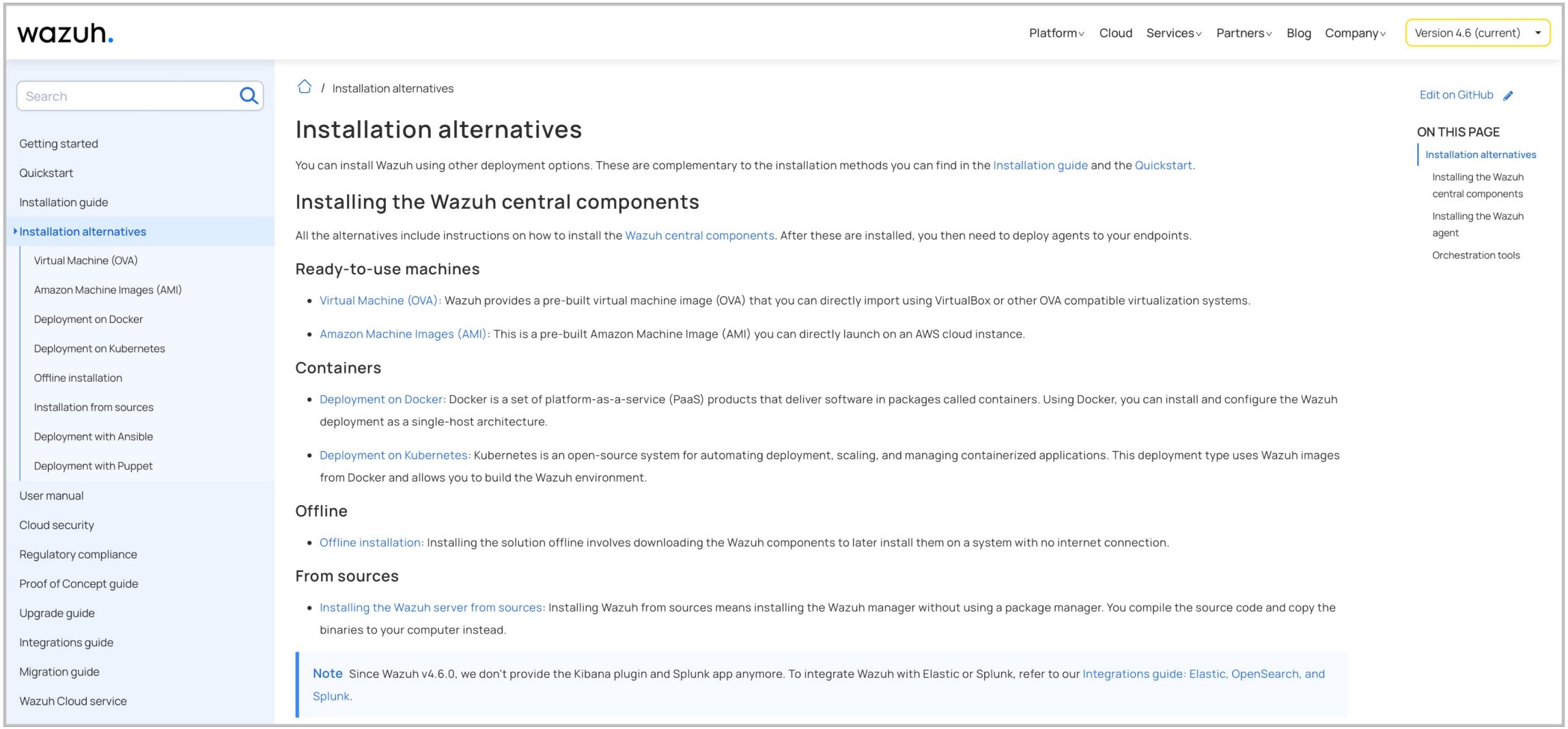
Installation alternatives



wazuh.

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Edit on GitHub

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Installation alternatives

You can install Wazuh using other deployment options. These are complementary to the installation methods you can find in the Installation guide and the Quickstart.

Installing the Wazuh central components

All the alternatives include instructions on how to install the Wazuh central components. After these are installed, you then need to deploy agents to your endpoints.

Ready-to-use machines

- Virtual Machine (OVA): Wazuh provides a pre-built virtual machine image (OVA) that you can directly import using VirtualBox or other OVA compatible virtualization systems.
- Amazon Machine Images (AMI): This is a pre-built Amazon Machine Image (AMI) you can directly launch on an AWS cloud instance.

Containers

- Deployment on Docker: Docker is a set of platform-as-a-service (PaaS) products that deliver software in packages called containers. Using Docker, you can install and configure the Wazuh deployment as a single-host architecture.
- Deployment on Kubernetes: Kubernetes is an open-source system for automating deployment, scaling, and managing containerized applications. This deployment type uses Wazuh images from Docker and allows you to build the Wazuh environment.

Offline

- Offline installation: Installing the solution offline involves downloading the Wazuh components to later install them on a system with no internet connection.

From sources

- Installing the Wazuh server from sources: Installing Wazuh from sources means installing the Wazuh manager without using a package manager. You compile the source code and copy the binaries to your computer instead.

Note Since Wazuh v4.6.0, we don't provide the Kibana plugin and Splunk app anymore. To integrate Wazuh with Elastic or Splunk, refer to our Integrations guide: Elastic, OpenSearch, and Splunk.

https://documentation.wazuh.com/current/deployment-options/index.html

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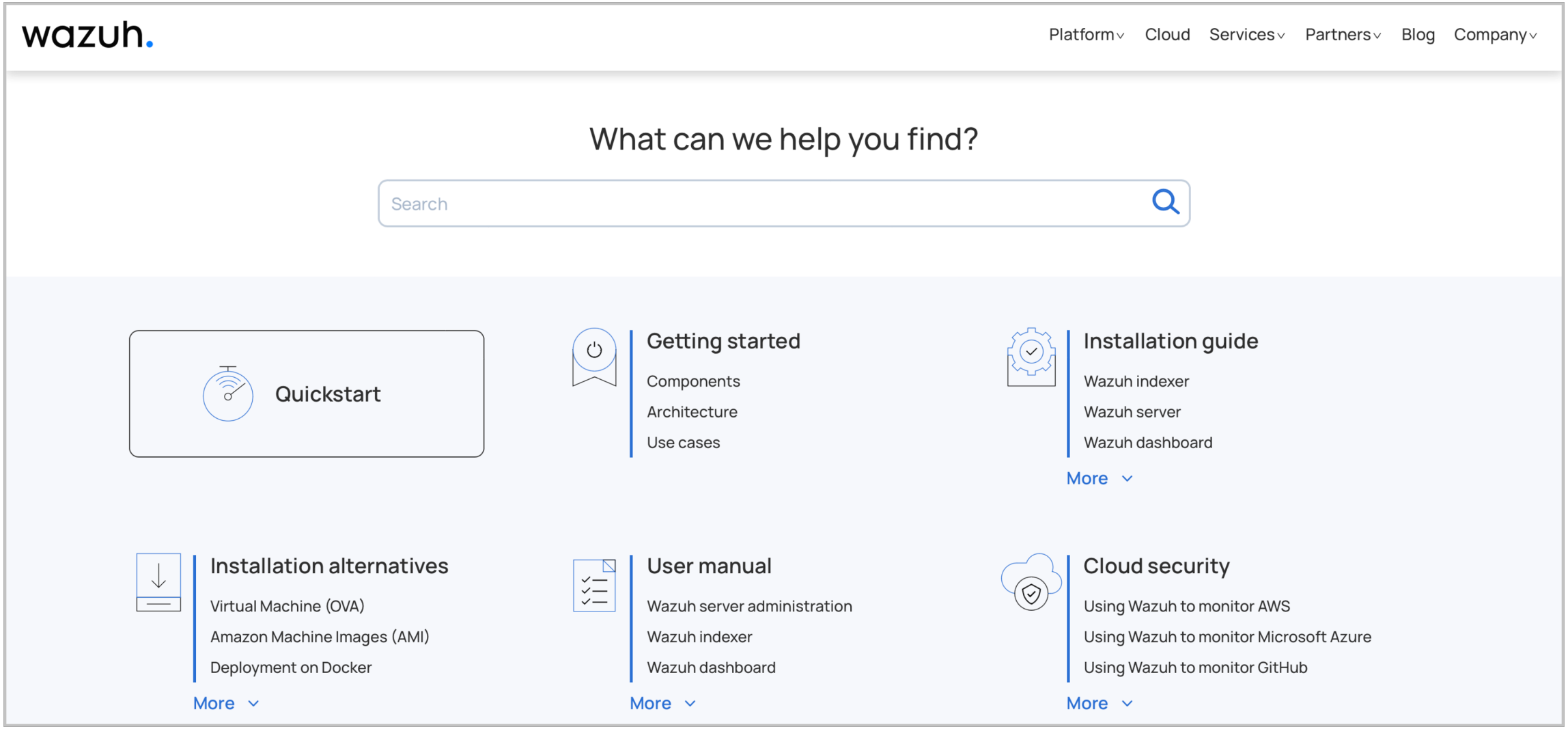
Documentation



https://documentation.wazuh.com/current/index.html

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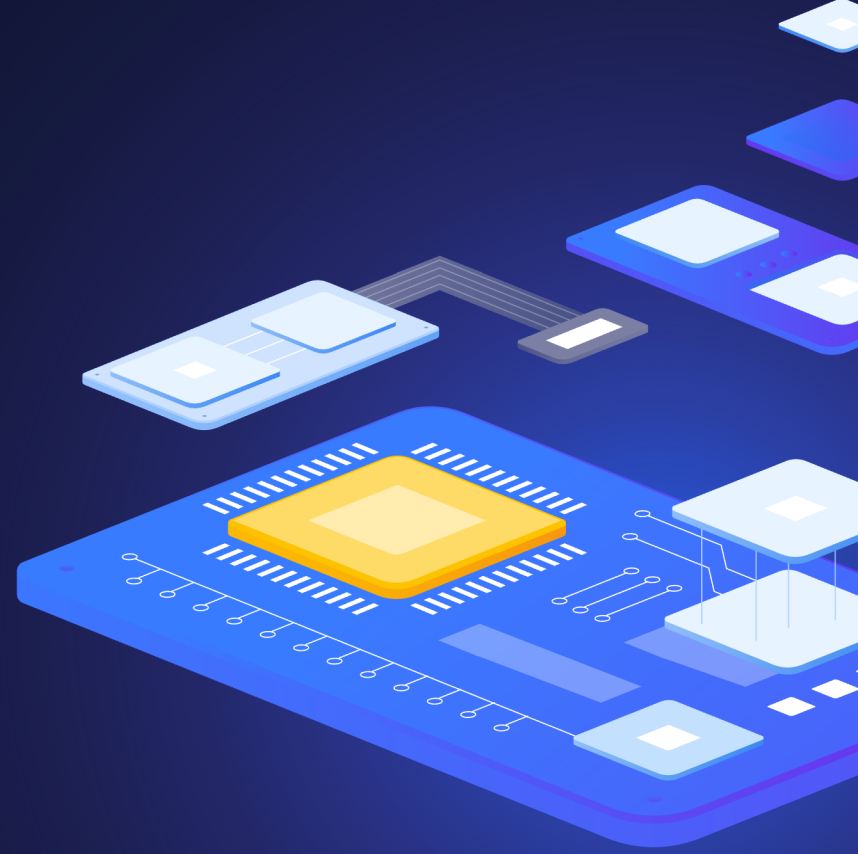
Wazuh indexer



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Wazuh indexer

- Hardware recommendations for each node
  - Minimum
    - 2 CPU
    - 4 GB RAM
  - Recommended
    - 8 CPU
    - 16 GB RAM

Monitored endpoints	APS	Storage in Wazuh indexer (GB/90 days)
Servers	0.25	3.7
Workstations	0.1	1.5
Network devices	0.5	7.4

- Disk space requirements
  - The amount of data depends on the generated alerts per second (APS).
  - For example, for an environment with 80 workstations, 10 servers, and 10 network devices, the storage needed on the Wazuh indexer server for 90 days of alerts is 230 GB.

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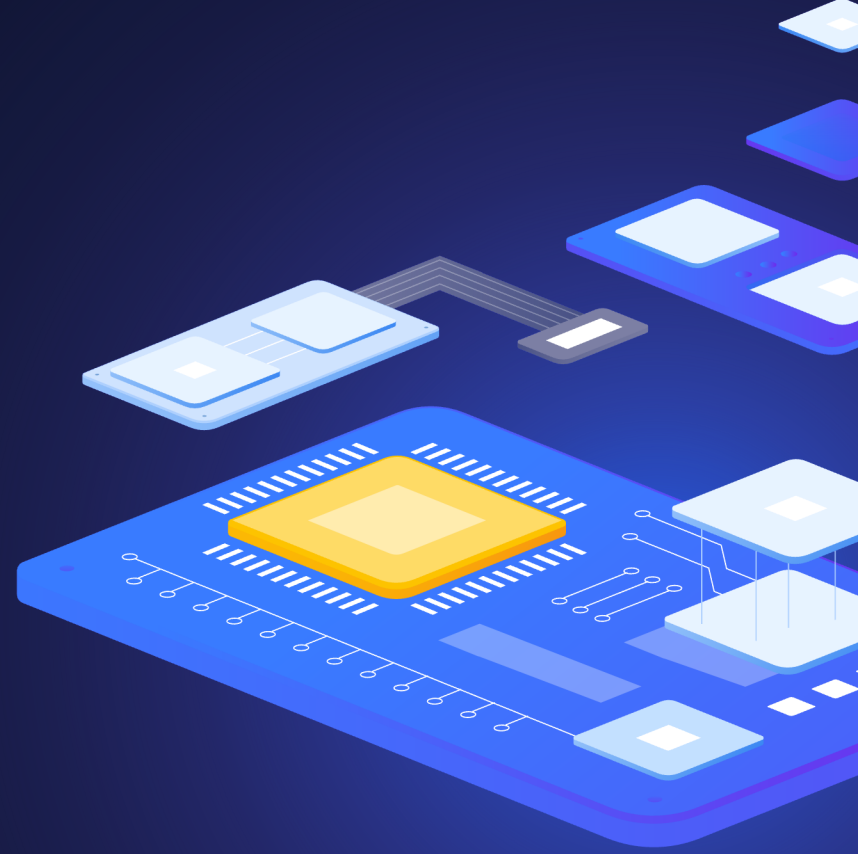
Wazuh server



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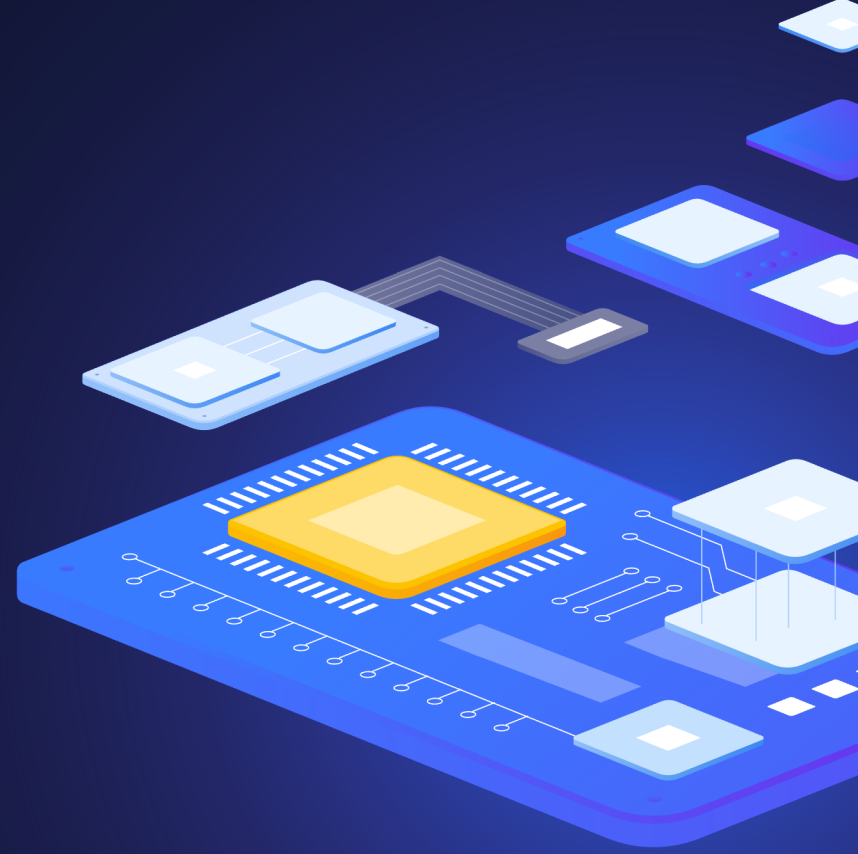
Wazuh server

- Hardware recommendations for each node
  - Minimum
    - 2 CPU
    - 2 GB RAM
  - Recommended
    - 8 CPU
    - 4 GB RAM

Monitored endpoints	APS	Storage in Wazuh Server (GB/90 days)
Servers	0.25	0.1
Workstations	0.1	0.04
Network devices	0.5	0.2

- Disk space requirements
  - The amount of data depends on the generated alerts per second (APS).
  - For example, for an environment with 80 workstations, 10 servers, and 10 network devices, the storage needed on the Wazuh server for 90 days of alerts is 6 GB.



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Wazuh dashboard & agents

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Wazuh dashboard

- Hardware recommendations for each node
  - Minimum
    - 2 CPU
    - 4 GB RAM
  - Recommended
    - 4 CPU
    - 8 GB RAM

- Browser compatibility
  - Chrome 95 or later
  - Firefox 93 or later
  - Safari 13.7 or later
  - Other Chromium-based browsers might also work. Internet Explorer 11 is not supported

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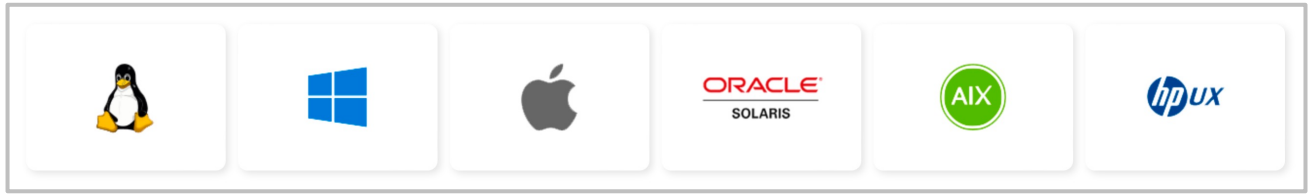
Wazuh agents

- The agent was developed considering the need to monitor a wide variety of different endpoints without impacting their performance
- Agent supported on the most popular operating systems
- Requires 35 MB of RAM on average



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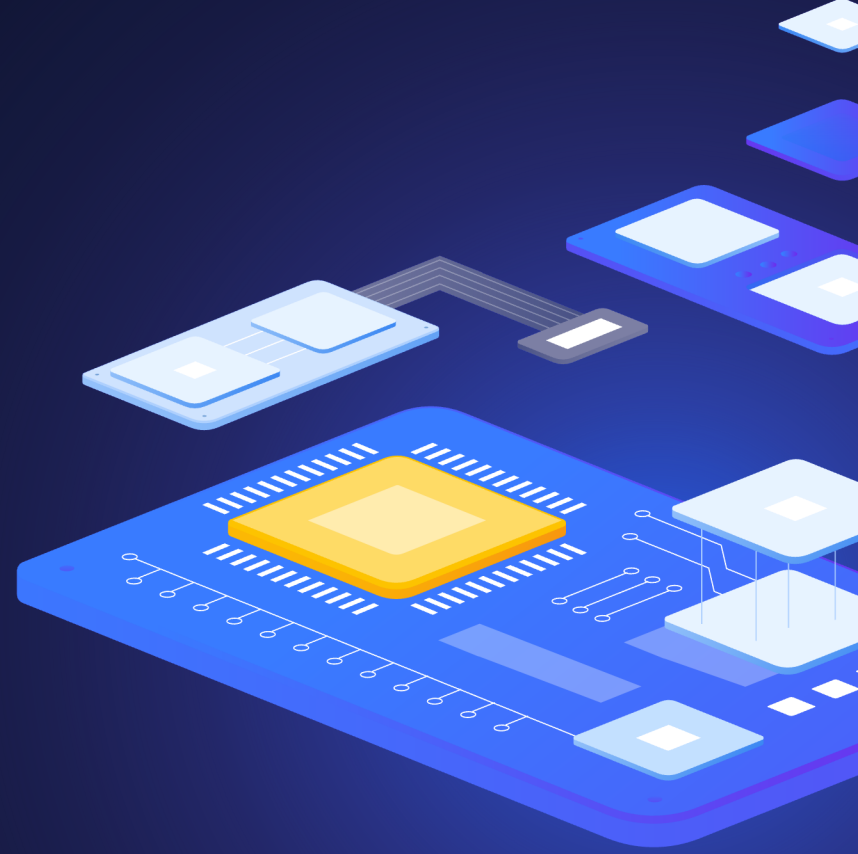
Demo time



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Wazuh Indexer installation

```
firewall-cmd --permanent --add-port={514,443,1514,1515,1516,55000}/tcp
firewall-cmd --permanent --add-port={514,1514}/udp
firewall-cmd --reload

# Download the wazuh-certs-tool.sh script and the config.yml configuration file.
# This creates the certificates that encrypt communications between the Wazuh central components.
curl -sO https://packages.wazuh.com/4.5/wazuh-certs-tool.sh
curl -sO https://packages.wazuh.com/4.5/config.yml

# Edit ./config.yml and replace the node names and IP values with the corresponding names and IP addresses.
nano ./config.yml

# Run ./wazuh-certs-tool.sh to create the certificates
bash ./wazuh-certs-tool.sh -A

# Compress all the necessary files for future usage
tar -cvf ./wazuh-certificates.tar -C ./wazuh-certificates/ .

# Install the following packages if missing
yum install coreutils

# Adding the Wazuh repository
rpm --import https://packages.wazuh.com/key/GPG-KEY-WAZUH
echo -e '[wazuh]\ngpgcheck=1\ngpgkey=https://packages.wazuh.com/key/GPG-KEY-WAZUH\nenabled=1\nname=EL-$releasever -
Wazuh\nbaseurl=https://packages.wazuh.com/4.x/yum/\nprotect=1' | tee /etc/yum.repos.d/wazuh.repo
```

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Wazuh Indexer installation

```
# Install the Wazuh indexer package.
yum install wazuh-indexer

# Configuring the Wazuh indexer
nano /etc/wazuh-indexer/opensearch.yml

# Deploying certificates
NODE_NAME=wazuh-demo
mkdir /etc/wazuh-indexer/certs
tar -xf ./wazuh-certificates.tar -C /etc/wazuh-indexer/certs/ ./$NODE_NAME.pem ./$NODE_NAME-key.pem ./admin.pem ./admin-key.pem ./root-
ca.pem
mv -n /etc/wazuh-indexer/certs/$NODE_NAME.pem /etc/wazuh-indexer/certs/indexer.pem
mv -n /etc/wazuh-indexer/certs/$NODE_NAME-key.pem /etc/wazuh-indexer/certs/indexer-key.pem
chmod 500 /etc/wazuh-indexer/certs
chmod 400 /etc/wazuh-indexer/certs/*
chown -R wazuh-indexer:wazuh-indexer /etc/wazuh-indexer/certs

# Starting and enable the service
systemctl daemon-reload
systemctl enable wazuh-indexer --now

# Cluster initialization to load the new certificates information
/usr/share/wazuh-indexer/bin/indexer-security-init.sh

# Testing the cluster installation
curl -k -u admin:admin https://wazuh-demo.lab.initmax.cz:9200
curl -k -u admin:admin https://wazuh-demo.lab.initmax.cz:9200/_cat/nodes?v
```

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Wazuh Manager installation

```
# Install the Wazuh manager package.
yum -y install wazuh-manager

# Enable and start the Wazuh manager service.
systemctl daemon-reload
systemctl enable wazuh-manager --now

# Verify the Wazuh manager status.
systemctl status wazuh-manager

# Install the Filebeat package
yum -y install filebeat

# Download the preconfigured Filebeat configuration file.
curl -so /etc/filebeat/filebeat.yml https://packages.wazuh.com/4.5/tpl/wazuh/filebeat/filebeat.yml

# Edit the /etc/filebeat/filebeat.yml configuration file
nano /etc/filebeat/filebeat.yml

# Create a Filebeat keystore to securely store authentication credentials.
filebeat keystore create

# Add the default username and password admin:admin to the secrets keystore.
echo admin | filebeat keystore add username --stdin --force
echo admin | filebeat keystore add password --stdin --force
```

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Wazuh Manager installation

```
# Download template for the Wazuh indexer.
curl -so /etc/filebeat/wazuh-template.json https://raw.githubusercontent.com/wazuh/wazuh/4.7/extensions/elasticsearch/7.x/wazuh-
template.json
chmod go+r /etc/filebeat/wazuh-template.json

# Install the Wazuh module for Filebeat.
curl -s https://packages.wazuh.com/4.x/filebeat/wazuh-filebeat-0.3.tar.gz | tar -xvz -C /usr/share/filebeat/module

# Deploying certificates
NODE_NAME=wazuh-demo
mkdir /etc/filebeat/certs
tar -xf ./wazuh-certificates.tar -C /etc/filebeat/certs/ ./$NODE_NAME.pem ./$NODE_NAME-key.pem ./root-ca.pem
mv -n /etc/filebeat/certs/$NODE_NAME.pem /etc/filebeat/certs/filebeat.pem
mv -n /etc/filebeat/certs/$NODE_NAME-key.pem /etc/filebeat/certs/filebeat-key.pem
chmod 500 /etc/filebeat/certs
chmod 400 /etc/filebeat/certs/*
chown -R root:root /etc/filebeat/certs

# Enable and start the Filebeat service.
systemctl daemon-reload
systemctl enable filebeat --now

# Verify that Filebeat is successfully installed
filebeat test output
```

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Wazuh Dashboard installation

```
# Install the following packages if missing.
yum install libcap

# Install the Wazuh dashboard package.
yum -y install wazuh-dashboard

# Configuring the Wazuh dashboard
nano /etc/wazuh-dashboard/opensearch_dashboards.yml

# Deploying certificates
NODE_NAME=wazuh-demo
mkdir /etc/wazuh-dashboard/certs
tar -xf ./wazuh-certificates.tar -C /etc/wazuh-dashboard/certs/ ./$NODE_NAME.pem ./$NODE_NAME-key.pem ./root-ca.pem
mv -n /etc/wazuh-dashboard/certs/$NODE_NAME.pem /etc/wazuh-dashboard/certs/dashboard.pem
mv -n /etc/wazuh-dashboard/certs/$NODE_NAME-key.pem /etc/wazuh-dashboard/certs/dashboard-key.pem
chmod 500 /etc/wazuh-dashboard/certs
chmod 400 /etc/wazuh-dashboard/certs/*
chown -R wazuh-dashboard:wazuh-dashboard /etc/wazuh-dashboard/certs
ll /etc/wazuh-dashboard/certs/

# Enable and start the Wazuh dashboard service
systemctl daemon-reload
systemctl enable wazuh-dashboard --now
```

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Wazuh Dashboard installation

```
# Enable password authentication for agents
nano /var/ossec/etc/ossec.conf  # <use_password>

# Set password for agents
nano /var/ossec/etc/authd.pass  # tajneheslo
cat /var/ossec/etc/authd.pass

systemctl restart wazuh-manager

# Securing your Wazuh installation
# You have now installed and configured all the Wazuh central components. We recommend changing the default credentials to protect your
infrastructure from possible attacks.

/usr/share/wazuh-indexer/plugins/opensearch-security/tools/wazuh-passwords-tool.sh --change-all --admin-user wazuh --admin-password wazuh

# Access the Wazuh web interface with your credentials.
https://192.168.91.15
```

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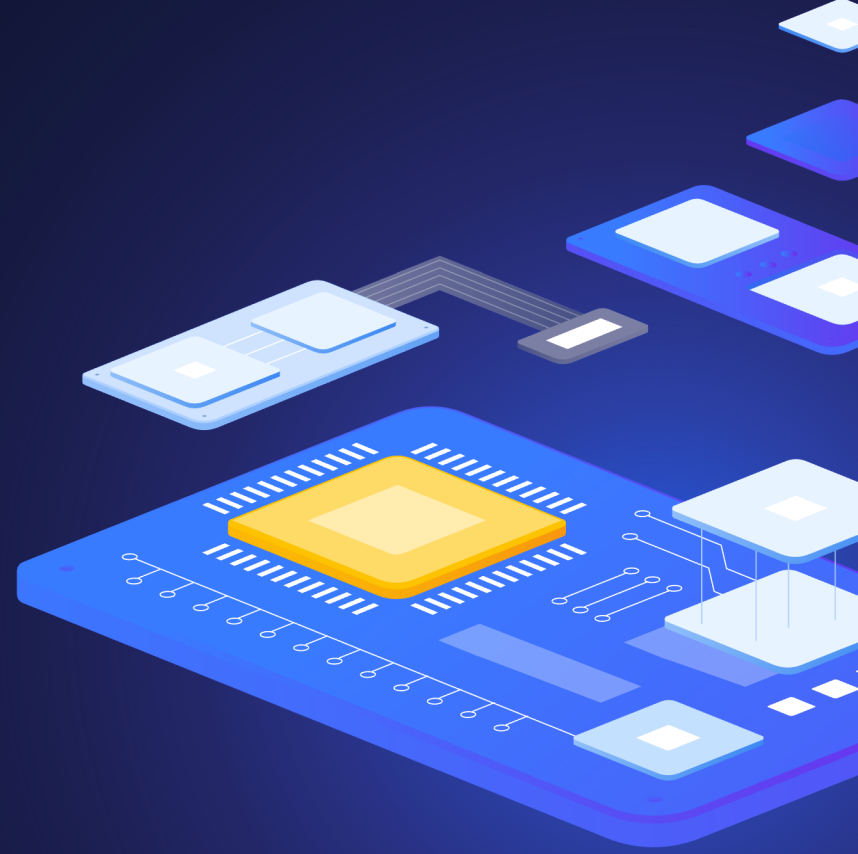
Questions?



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