

Hawkeye

Release 6.0.7

Getting Started Guide

Notices

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<i>Americas</i>		
US, Canada	1-888-829-5558	8h00 – 17h00
Brazil	0800-892-0522	8h00 – 17h00
Mexico	001-888-829-5558	8h00 – 17h00
Other	+1-719-273-6516	8h00 – 17h00
<i>EMEA</i>		
Belgium	0800-18686	8h30 – 17h30
Finland	0800-913-352	8h30 – 17h30
France	0800-917228	8h30 – 17h30
Germany	0800-0824099	8h30 – 17h30
India	1800-18-02552	8h30 – 17h30
Ireland	1800-949245	8h30 – 17h30
Israel	1-809-454975	8h30 – 17h30
Italy	0800-790571	8h30 – 17h30
Luxembourg	0800-25112	8h30 – 17h30
Netherlands	0800-022-9086	8h30 – 17h30

Romania	0213 015 699	8h30 – 17h30
Spain	800-654386	8h30 – 17h30
Sweden	0201-202266	8h30 – 17h30
United Kingdom	0800-0293882	8h30 – 17h30
<i>Asia and Australia</i>		
Australia	1-800-370-558	8h30 – 17h00
China Mainland	800-810-0005	8h30 – 17h30
	400-810-0005	8h30 – 17h30
Hong Kong	800-931-613	9h00 – 18h00
Japan	0120-421-621	9h00 – 17h30
Malaysia	1800-819 092	8h30 – 17h30
South Korea	080-770-0800	8h30 – 17h30
Singapore	800-101-3797	8h30 – 17h30
Taiwan	0800-699-880	9h00 – 18h00
Other	+65 6215 7600	8h30 – 17h30 (Singapore)

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CHAPTER 1

Overview

Hawkeye is an integrated solution for Carrier Service Providers (CSPs) and Enterprises for live network verification. It allows CSPs and enterprises to predict, detect, and handle issues that may arise in their networks. Hawkeye verifies network reliability and customer SLAs, checking that the demarcation points are deployed in strategic network locations. Points of Presence (POP) are non-intrusive to existing live services, and customer application traffic runs over the actual customer path (VPN, PVC). It integrates with carrier OSS for closed loop resolution; it is independent of network type, vendors, and end user deployment types (enterprise, residential, government, and small to medium business).

Hawkeye provides a network active test solution with the following features:

- Design fit for live network operations.
- Predictable network traffic injection to measure and control SLAs.
- Interval testing for continual monitoring.
- Distributed testing with low cost software and hardware probes.
- Open framework for integration into OSS/EMS/IT environment.
- Web based solution with multiuser operation.
- Scalable solution.

Hawkeye typical topology

Hawkeye server resides in one central point. Probes for both hardware or software are deployed through the network at different layers, such as, core, distribution, and access. Test are configured in the management server and sent to the probes. The test results and statistics are collected from the probes to generate reports.

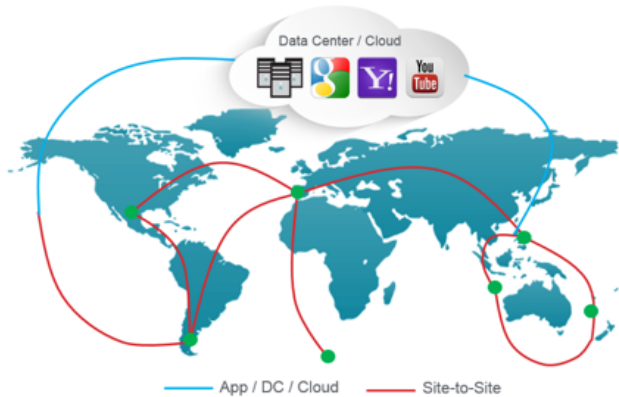
Hawkeye deployment architecture

Distributed architecture

- Central management on Linux virtual appliance
- 100% software agents called performance endpoints
- Turnkey XR hardware agents 
- Active monitoring of physical or all virtual

Key Capabilities

- Active traffic on a schedule
- SLA pass/fail with alerts
- Service quality metrics
- Deep analytics and trending built-in



CHAPTER 2

Prerequisites

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Server requirements

The Hawkeye server is delivered as a virtual image in either of the following formats:

- As an OVA image, which is hosted on a virtual (VMware) solution.
- As a QCOW2 image, which is hosted in KVM on a bare metal Debian 12 or later.

Following sections explain the software requirements for each of the solutions mentioned above.

VMware solution

Following are the software requirements for delivering Hawkeye server as an OVA image, which is hosted within a virtualization (VMware) solution.

- VMware ESXi 7.0 or higher (qualified with 7.0u3)

The Hawkeye virtual image requires 64-bit support from the host operating system or from the specific hypervisor. The CPU virtualization instructions, such as, Intel VT-x and AMD-V must be supported and enabled.

NOTE

While importing the virtual image, you may receive compatibility warning messages, ignore them and continue the import operation.

KVM/OpenStack solution

Hawkeye server can be installed on a Linux system running Debian 12 or equivalent with KVM. The Hawkeye server can be installed in OpenStack using version Liberty or higher. The Hawkeye virtual image is a 64-bit system and 256 GB.

Hawkeye server deployment requirements

Minimum computer configuration for deploying Hawkeye server varies based on number of concurrent users and usage. Following table shows the minimum and recommended configurations based on number of users and endpoints. Use the recommended configurations for best performance.

No of concurrent Users	No of endpoints	Minimum Requirements	Recommended
2	25	4 vCPU, 8GB RAM, 256GB	6 vCPU, 16GB RAM, 256GB

No of concurrent Users	No of endpoints	Minimum Requirements	Recommended
5	100	6 vCPU, 16GB RAM, 256GB	8 vCPU, 24GB RAM, 256GB
10	400	8 vCPU, 24GB RAM, 256GB	10 vCPU, 32GB RAM, 256GB

Browser requirements

Hawkeye is a web-based application. To access it you must install one of the following web browsers:

- Google Chrome v127 or higher
- Microsoft Edge

NOTE

Other web browsers may be supported but have not been tested.

Java script support must be enabled in the web browser. Please refer to your browser user guide for activation.

From the remote client in the web browser use either:

- `http://<machineIpOrUrl>`
- `https://<machineIpOrUrl>`

Assuming license has been applied, you will be prompted to provide your login credentials.

NOTE

For the first time access, the default sysadmin and Password0 can be used to login as Administrator. Keysight recommends you to change the default password for sysadmin as part of system optimization."

CHAPTER 3

How do I**Section contents:**

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Install and Upgrade Hawkeye

Complete the following steps to install and deploy Hawkeye:

1. Review the release notes
2. [Verify prerequisites](#)
3. For the first time install, complete the following:
 - Deploy virtual appliance
 - [Follow new installation using OVA or QCOW2](#)
 - [Install license](#)
 - See *System Optimization* section of *Hawkeye User Guide*.
4. [Upgrade Hawkeye](#)
5. [Backup, recover, or restore database](#)

Install Hawkeye server

The Hawkeye server is installed from an image in either OVA format or QCOW2. Installation of the Hawkeye server is to create a virtual machine using either the OVA or QCOW2 image. You can create the Hawkeye server virtual machine (VM) using the following mechanisms:

- VMware
- KVM (Linux)
- OpenStack (Linux)

1. After the deployment is complete, switch on the virtual machine.

NOTE

The default login credentials for Hawkeye is `ksuser/keysight`. You can then escalate privilege by issuing the `su` command and entering the same password. Keysight recommends you change all passwords upon installation.

2. After the VM is powered on, note down the Hawkeye server IP address from the console section and complete one of the following set of actions:

- If the IP address is available, use this IP address to access the server and proceed to the [step 3](#).
- If IP address is not available, complete the following steps to configure the Hawkeye console for the first instance:
 - a. The virtualization solution console attempts to obtain an IP address through DHCP. After waiting for DHCP for 30 seconds, it uses a static IP address: 192.168.0.200. The default host name is hawkeye (written in lower case).
 - b. If there is no DHCP server to provide an IP address, configure the server manually. The following steps require privilege escalation:
 - i. Configure `eth0` by editing `/etc/netplan/99_config.yaml`.

```
network:
  version: 2
  ethernets:
    eth0:
      addresses:
        - 172.31.20.50/24
      routes:
        - to: default
          via: 172.31.20.1
```

ii. Configure DNS server. Optional.

```
sudo vi /etc/systemd/resolved.conf
[Resolve]
# Some examples of DNS servers which may be used for DNS= and
FallbackDNS=:
# Cloudflare: 1.1.1.1#cloudflare-dns.com 1.0.0.1#cloudflare-dns.com
2606:4700:4700::1111#cloudflare-dns.com
2606:4700:4700::1001#cloudflare-dns.com
# Google: 8.8.8.8#dns.google 8.8.4.4#dns.google
2001:4860:4860::8888#dns.google 2001:4860:4860::8844#dns.google
# Quad9: 9.9.9.9#dns.quad9.net 149.112.112.112#dns.quad9.net
2620:fe::fe#dns.quad9.net 2620:fe::9#dns.quad9.net
DNS=[Desired.dns.server]
#FallbackDNS=
#Domains=
```

```
#DNSSEC=no
#DNSOverTLS=no
#MulticastDNS=yes
#LLMNR=yes
#Cache=yes
#CacheFromLocalhost=no
#DNSStubListener=yes
#DNSStubListenerExtra=
#ReadEtcHosts=yes
#ResolveUnicastSingleLabel=no
```

3. Change the Hawkeye server hostname by entering the following commands:

```
renameHost <hostname>
```

4. Set Server Time Zone

Action	Command
List available time zones	timedatectl list-timezones
Set time zone	timedatectl set-timezone ZONE
Example set time zone	timedatectl set-timezone America/New_York

5. Run the following command to reboot the system for all changes to take effect.

```
sudo reboot
```

6. Browse to <https://<hostname>> or https://<ip_address>.

NOTE

For large scale or production setup, Keysight recommends to follow information on System Optimization section of this help.

Access the Hawkeye Server

This section discusses the step to confirm the accessibility of the Hawkeye server.

Confirm the accessibility of Hawkeye server

After you install the Hawkeye server virtual machine and you know the IP address of the Hawkeye server, do the following:

1. On the client computer, open a web browser and type the IP Address of the server as the URL. If the ports are open, the Hawkeye server licensing screen appears.
2. If the Hawkeye Server is not reachable from the web browser please confirm the client can reach the server:
 - a. Issue an ICMP ping command to the server's IP address. If the server replies to the ICMP packets sent, you have connectivity.
 - b. If there are no replies to the sent ICMP ping packet, please check the networking configuration and the firewall configuration, if any. The rules configured in the firewall should allow the traffic from client computer to Hawkeye server on port 443 and/or 80.

Install License

Before you activate your license, ensure that the hostname of the Hawkeye server is correct. Keysight recommends you not to change the hostname of the Hawkeye server after applying the license as this can cause licensing issues. To change the hostname, follow the steps given in Install Hawkeye server.

NOTE

If you find any difficulty in generating or applying license with IE, Keysight recommends you use Chrome as web browser.

Activate license online

To activate the license using the internet connection, do the following:

1. After Hawkeye server is installed and you access the server using the assigned IP address, following web page opens.



2. Select **Licensing** to open the **Hawkeye - Licensing** page.
3. Enter the activation code that you received in your registered email ID in the **Enter activation code** box and the number of licenses in the **Quantity** box.
4. Select **Activate**.

Licensing

Activate / Deactivate a license

License Server: localhost

HOST ID: 02d89d-d57163-930050-5452

Enter activation code: Quantity:

PRODUCT ALL	DESCRIPTION	LICENSE EXPIRATION	MAINTENANCE EXPIRATION	ACTIVATION CODE	QUANTITY	ONLINE DEACTIVATE
Hawkeye	IXIA Hawkeye, 50 Endpoint Solution Bundle	09-Nov-2019	2019-11-09	5C22-E869-D83B-DDB7	1	☒

NOTE

If there is no internet connectivity from the Console, you must activate your license offline. See [Activate license offline](#).

Activate license offline

To activate a license offline, do the following:

1. Register or login to Keysight Software Manager (KSM) at [Keysight Offline Activation Page](#).
2. Fill all the Personal details, and in the additional details, you need to enter the Order number and certificate number. You can find the order number and certificate number from order email

which you received or contact sales rep. Make sure there are no spaces at the end or beginning in the order number.

3. Select **Create Account** and continue to log in using the created credentials.
4. Select **You can request new licenses** option, it will show the number of licenses available to activate.
5. Under **Select host to assign licenses to** select **Click to add a host** then select **Add a new host**. Enter the Host ID of your Hawkeye. Host ID can be found under licensing page.
6. Select the licenses and quantities to assign and select **Assign Licenses** and select **Continue**. The provided quantity marks the desired number of total active licenses. In the next screen select **No** and then select **Continue**.
7. Select **Submit** and select **OK**. You can send the license file to yourself in an email. You can also copy others in that email.
8. Copy the license file to a computer where you can access Hawkeye.
9. In a web browser type the Hawkeye server assigned IP address. As Hawkeye server has not had a license applied it will go to a license Screen. Select **import license file** and select **BROWSE** and open the generated .bin license file. Then select **OK** to activate licenses.

Deactivate License Online

On the **Hawkeye – Licensing** page, for the license you want to deactivate select the cross button at the end of the line for the license. As this is an online deactivation the Hawkeye Server will communicate with Keysight license server to register the change.

Deactivate License Offline

To deactivate a license offline, do the following:

1. Login to Keysight Software Manager (KSM) at [Keysight Offline Deactivation Page](#)
2. Select on **Deactivate a License**.
3. Enter the host ID and select **Search**. You will get the activation code, part number and product description.
4. Enter **Qty to Deactivate** and select **Continue**.
5. The deactivation license file will be sent to you, make sure the email address is correct. You can also send a copy to other email addresses.
6. Select **Deactivate**.

NOTE

Do not close this window, you need to enter the confirmation code at the end.

7. Now check your inbox and copy the license file to a computer where you have access to Hawkeye server Web UI.
8. Select **Browse** and import the license file then select **OK**.
9. Copy the confirmation code and enter it in KSM and select **Complete the confirmation**.

Upgrade Hawkeye server

You can upgrade the Hawkeye server in both online and offline processes.

Online upgrade

You can upgrade the Hawkeye server running Hawkeye 5.0.1 or later versions with a connection to the internet to the latest release of Hawkeye from the UI:

Select **System** from the side bar and select the **Check for updates** button:

The screenshot shows the Hawkeye System UI. The top navigation bar has a hamburger menu icon and the word 'System'. On the right, there are icons for notifications, help, and a user profile labeled 'sysadmin'. Below the navigation bar, there is a 'Check for updates' button. Below this, there are two tabs: 'System' (selected) and 'License Usage'. The main content area is divided into two panels. The left panel, titled 'System', contains a table of system information. The right panel, titled 'Runtime', contains a table of runtime statistics.

System	
System Version	5.0.1 (10762971)
Server Address	10.36.32.22
Disk Usage	5% of 255G used
Client Session Idle Time (seconds)	3600
List Display Refresh Time (milliseconds)	120000
Log files Retention Time (minutes)	240
Database Records Retention (Days)	365
Time on Server	2020-12-08 03:33:37
Time on Client	2020-12-07 22:33:37
Daylight Saving Setting	0

Runtime	
Number of active probes	13
Number of active concurrent users	2
Number of Tests currently running	0
Number of Mesh Tests currently running	0
Number of Node to Node Tests currently running	0
Number of Real Service Tests currently running	0
Number of total pairs in Last Run	2
Average Pairs executed Last Day	4
Max Pairs executed Last Day	12
Min Pairs executed Last Day	1

If an update is available, the **Update Server** button will appear. Select **Update Server** button to start the update dialog.

Update Server
✕

Good to know:

- Update could take from 1 hour to many depending on your hardware capabilities.
- It is recommended to leave "Backup Configuration" and "Backup Results" set on.
(In case o failure you can restore your system.)
- During update your system will be unavailable to use.
- After update your system might require a reboot.

Required:

- Make sure your system is connected to internet.
- **DO NOT** interact with system during the update.
(The only one interaction allowed is to access system from a web browser.)
- **DO NOT** power off system during update.

Backup Configuration

On

Backup Results

On

 **Update**

Here you have the option to have either your configuration or your results or both backed up prior to the upgrade. Once your selections are made select **Update** button. You will be asked to confirm that update by selecting **OK** to start you update.

After the Update has started you will be redirected to an Update Status page. This page reports when each step in the update is done and will check to see if the system will need to be rebooted once the update is complete. If a reboot is required, you will be prompted to reboot by selecting the **Reboot Now** button otherwise you will be redirected to the login page when the update completes.

Updating Hawkeye in progress ...

Start checking basic requirements ...
DONE: Basic requirements for update have been met.
 Configuration backup in progress ...
DONE: Configuration backup was executed with success.
 Results backup in progress ...
DONE: Results backup executed with success.
 Upgrading server in progress ...
 Dependency checking ...
DONE: Dependency checking
 Downloading packages ...
DONE: Downloading packages
 Installing updates ...
DONE: Installing updates
 Cleaning Up ...
DONE: Cleaning Up
 Verifying updates ...
DONE: Verifying updates
DONE: Server was updated with success.
 Check if reboot machine is needed ...
 Now you have to reboot the system ...

Reboot Now

NOTE

During the update the system will not be available for tests or access by other users.

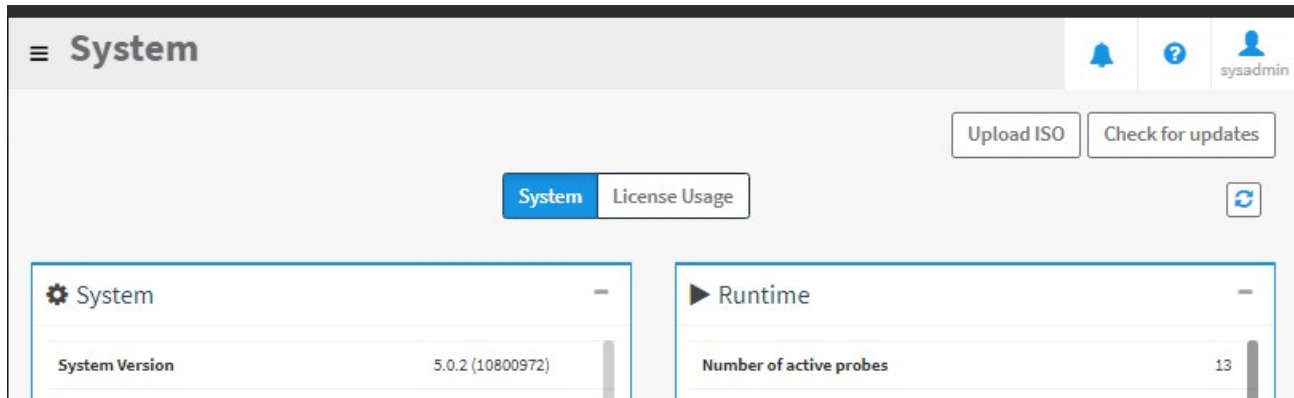
Offline upgrade

You can upgrade Hawkeye server in offline mode either from user interface (UI) or from the command line program (CLI). Both these processes are mentioned in this section.

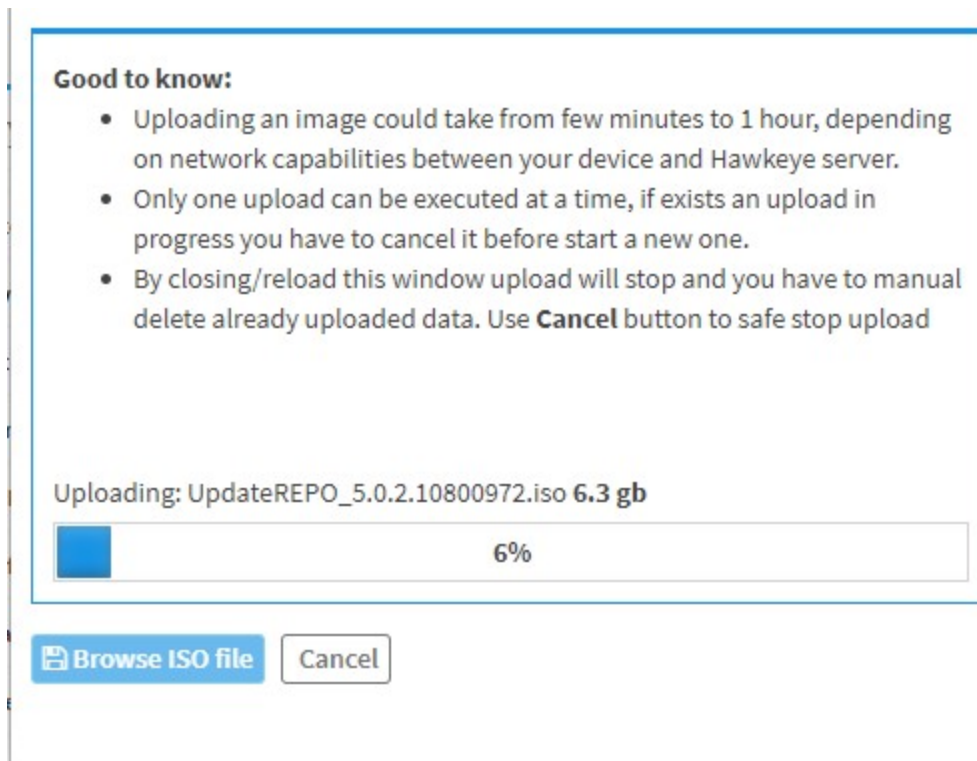
UI process

Hawkeye Servers running Version 5.0.2 or later support offline upgrade from the UI. This does require you to have already downloaded the UpdateRepo .iso file from support.ixiacom.com to your local machine ahead of time. After the file has been downloaded, you can perform the following steps to upload it to your Hawkeye server and upgrade your server.

Select **System** from the side bar and select the **Upload ISO** button.



The **Upload** dialog will open in a new browser window, select the **Browse ISO File** button and select the UpdateRepo.iso file that you previously downloaded. After you select **Open** the upload will start immediately. If you do not refresh or close this browser window, the update will continue while you continue to use Hawkeye.



After the upload completes the system will validate that it is a Keysight update repository ISO file and show a notification in the Hawkeye UI.

Notifications Details

Id	24
Type	ISO image validation success
Content	Image: UpdateREPO_5.0.2.10800972.iso was validated with success. Please refresh your browser.
Is Active	yes
Is Read	no
Login	sysadmin
Created At	2021-02-08 15:34:26

After Hawkeye validates the image, it will display the image available offline for update on the System page. Then you can select the **Update Server** button to start the update process and continue the process similar to online update.



CLI process

You can upgrade the Hawkeye server running Hawkeye 5.0.1 or higher versions offline to the latest release of Hawkeye from the CLI. To do this, you must download the .iso image from support.ixiacom.com.

After you have downloaded the .iso file, transfer it to the /tmp directory of your Hawkeye server and run the following command:

```
#updateServer --offline <path to .iso file>
```

If a reboot is required, Hawkeye will prompt you to reboot the system after the upgrade.

Note:

NOTE

The updateServer command can also perform backups and check for available updates if the server has an internet connection. To see other options available, run the following command:

```
#updateServer -h
```

Hawkeye server automatic backup

Hawkeye server is equipped with an Automatic Local backup system. This system creates local backups of both the Configuration database and the Results database. These two databases can be backed up on independent schedules.

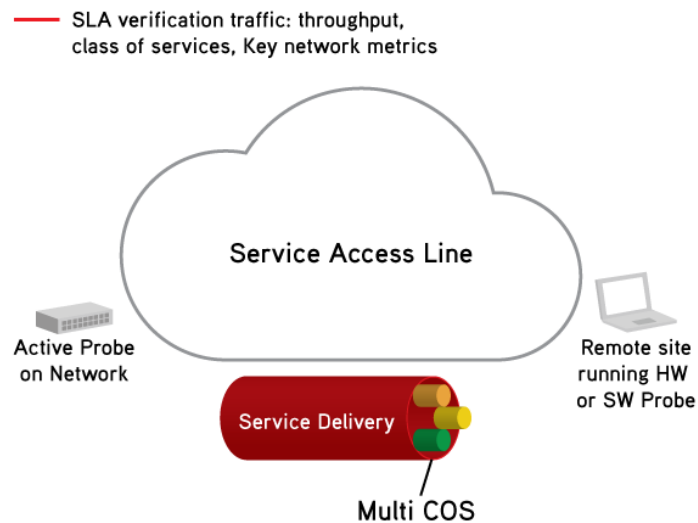
Interval of backups can be configured via Preferences. Under the Main Tab on the Preferences the System Administrator can set the interval to disabled/daily/weekly/monthly/yearly.

Parameter Name	Default Value	Available Values
Backup Configuration Interval	daily	disabled/daily/weekly/monthly/yearly
Backup Results Interval	daily	disabled/daily/weekly/monthly/yearly

Use Hawkeye

To use Hawkeye, complete the following:

1. [Deploy endpoints](#)
2. [Monitor distributed network on the facing page](#)
3. [Add endpoints and verify availability in probe management GUI](#)
4. [Select test type](#)
5. [Configure node to node tests](#)
6. [Configure Real Service tests](#)
7. [View test results](#)



Deploy endpoints

Typically endpoints are deployed at each site that needs monitoring and another endpoint is deployed at the central site. The Hawkeye server monitors performance by running tests between endpoints.

The following endpoint types are available:

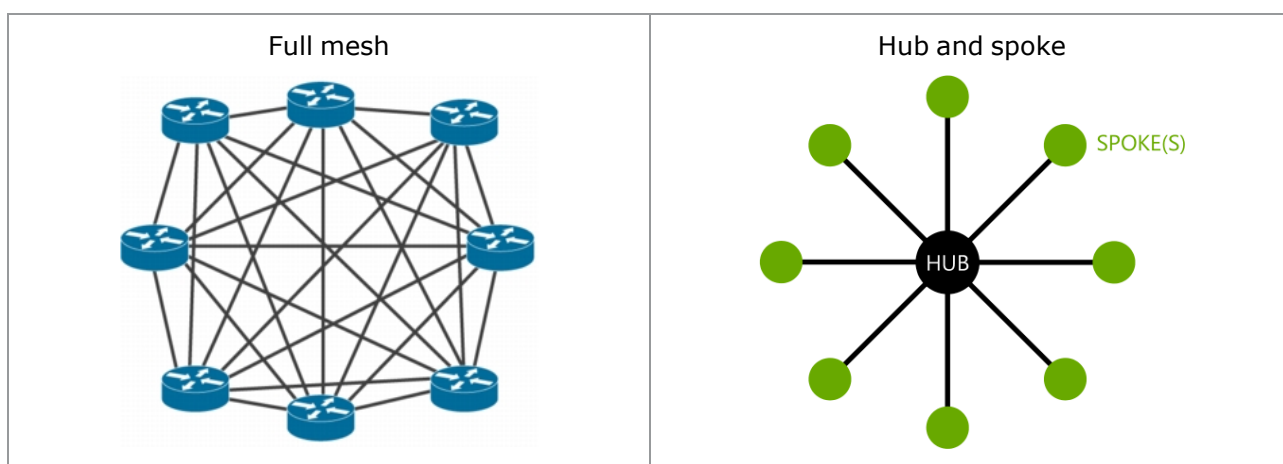
- XR3000 hardware endpoint
- XR-VM Virtual endpoint

- XRPi hardware endpoint
- XR Docker
- software endpoint
- XR-E1S

The advantage of using Keysight provided hardware endpoints, such as XR3000, XRPi, and Vision E1S is that the real service tests are available.

Monitor distributed network

Hawkeye is designed to support monitoring a widely distributed network. Node to node tests can then be used to monitor from point to point in a full mesh scenario or probe to probe. This design is particularly useful for distributed measurements for network KPI, but also for voice or Unified Communications testing.



Add endpoints

Each endpoint is configured with a unique name and an IP address. You can add additional information such as location and group, and change the endpoint name. After adding an endpoint to the Hawkeye server, you can view then in the Probe Management screen. The Auto Probe Management screen allows you to view the endpoint, view public and physical private IP, and other details, such as, connectivity status. Endpoints with green LED in the Status column are available for running tests.

See *Hawkeye User Guide* for information on adding and verifying availability of the endpoints.

KEYSIGHT
Hawkeye

Probes (12 Probes)

Install Probes All Up Down

Rescan Public/Private Show 25 entries

	Status	ID	IF Name	IP Addresses	Groups	Public/Private	Type	Location
☐		12	xr3k-P1	10.36.34.98	Administrators, Apple, BassPro, BookFace, BugenKing, IBM, KeySight, TacoBell, TechLeaders, WaynesWorld	Public	xr3000	
☐		11	xrvm-6-012	10.36.35.122	Administrators, Apple, BassPro, BookFace, BugenKing, IBM, KeySight, TacoBell, TechLeaders, WaynesWorld	Public	xr_vm	
☐		10	pi4-qe-1	10.36.32.112	Administrators, Apple, BassPro, BookFace, BugenKing, IBM, KeySight, TacoBell, TechLeaders, WaynesWorld	Public	pi4	

Views: Dashboards, Results, Reports, Alarms, SETTINGS, Probes, Tests, Meshes

Select test type

For the service turn up procedure, there are tests that can achieve the expected measurements. Following are some of the tests available:

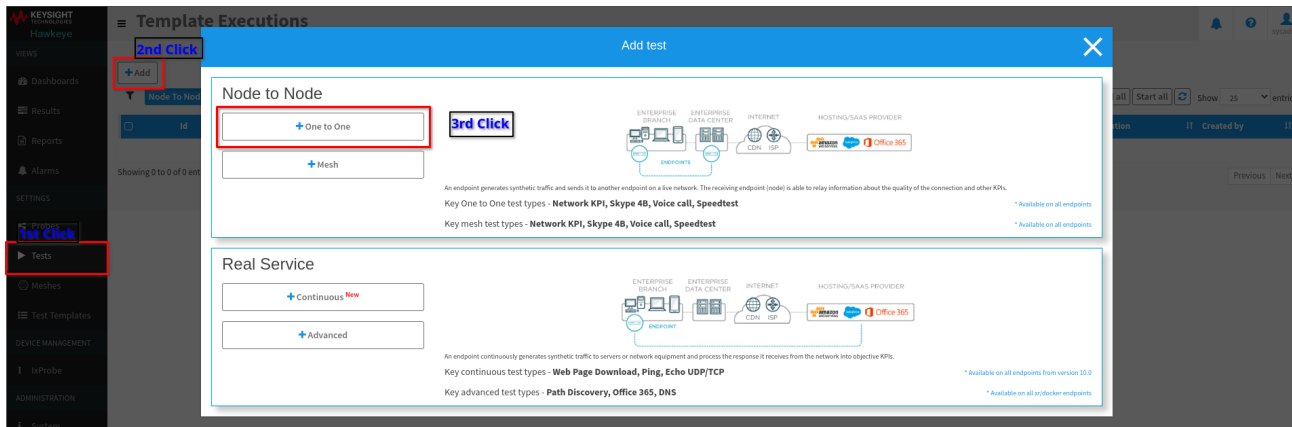
- Run UDP throughput test types to measure raw line capacity using bit blasting.
- Run TCP throughput with one or several streams to measure line capacity for specific TCP traffic without any class of services.
- Run COS validation tests to test different class of services and run oversubscription scenarios.
- Run the Network KPI (no throughput) or Video Test (for selecting throughput) to measure key IP SLA metrics (jitter, delay, loss).
- For UDP or RTP (video) traffic generation at high throughput, consider to send low jitter algorithm of UDP tests to optimize the traffic generation.

See *Hawkeye User Guide* for more information on each test.

Configure node to node test

The node to node test execution will allow the following selections:

- **Probe from:** probe where the test is executed FROM (can be network side)
- **Probe to:** probe where the test is executed TO (can be access side)
- **Test type:** the type of test that will be run
- **Test duration:** the duration of the test time while the active traffic will be generated
- **Test options:** depending on the test types, some options, such as, bit rate, packet size, and number of concurrent pairs would be available to select



For test execution configuration, use the configuration settings at the bottom of the page.

Add test [Back] [X]

Normal [Test Template]

Configuration Advanced Thresholds Alarms

Tag

Type Network KPI
Unidirectional Network Flow measuring Loss, Jitter, Delay

From HE-PI4v2-1 Default

To HE-PI4v2-1 Default

Traffic Duration 30 sec

Frequency 0 min

Enforce Schedule ☐ Off

☐ Add another

For each endpoint, select the interface IP address to use from the pull down window.

NOTE

The direction of the test will be from Node 1 to Node 2. When test names include from->to, the traffic will be generated from Node 1 to Node 2. When the name includes to->from the traffic will be generated from Node 2 to Node 1.

Configure test schedule

The test scheduling options are available for all type of test configurations. The functionality is the same for all configurations. The test execution list shows only the schedule currently active or active in the future. If all schedule are inactive, the list becomes empty.

Add test [Back] [X]

Normal [Test Template]

Configuration Advanced Thresholds Alarms

Tag

Type Network KPI
Unidirectional Network Flow measuring Loss, Jitter, Delay

From HE-PI4v2-1

To HE-PI4v2-1

Traffic Duration 30 sec

Frequency 3 min

Enforce Schedule ☒ Off

☐ Add another

Sep 06, 2024 @ 14:49 Sep 21, 2024 @ 14:49 [Apply] [Cancel]

2 :49 PM 2 :49 PM

< Sep 2024 > Oct 2024 >

Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
25	26	27	28	29	30	31	29	30	1	2	3	4	5
1	2	3	4	5	6	7	6	7	8	9	10	11	12
8	9	10	11	12	13	14	13	14	15	16	17	18	19
15	16	17	18	19	20	21	20	21	22	23	24	25	26
22	23	24	25	26	27	28	27	28	29	30	31	1	2
29	30	1	2	3	4	5	3	4	5	6	7	8	9

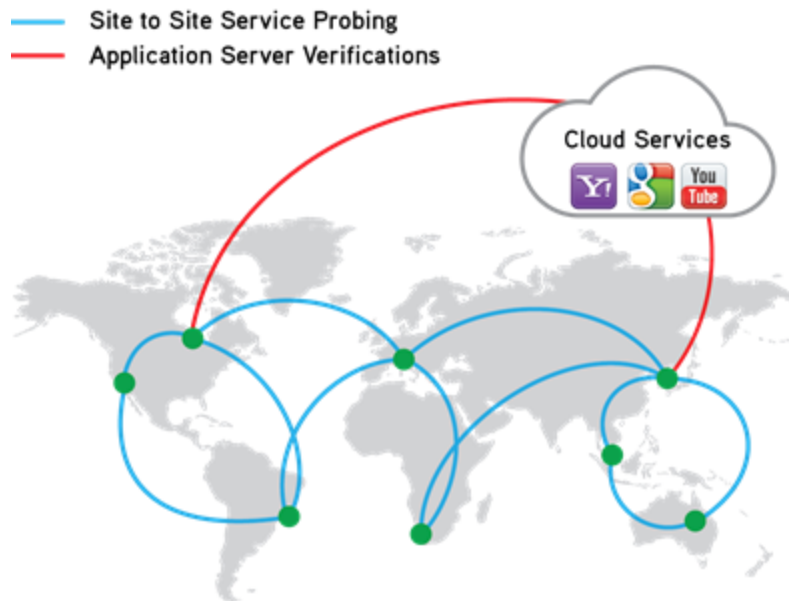
Period EDT Sep 06, 2024 @ 14:49 - Sep 06, 2124 @ 14:49

Description of fields

Field	Description
Test interval - [Minutes]	<p>It defines the time interval between tests. This interval is calculated on best effort basis, as the tests in the queue might be too numerous to allow all intervals to be respected. In case the interval is too small for tests to be run, the queue is automatically adjusted to the best possible interval to run the test.</p> <p>If the test interval is set to 0, the test is run only one time. This will appear as one shot test. In this case, the test appears into test execution table while waiting for execution (Queuing) or running. After the test is complete, it is removed from the test execution table and the results are available in the test results lists.</p>
Start schedule	<p>It defines the date when the schedule shall start.</p> <ul style="list-style-type: none"> • If this is left blank, Hawkeye applies the current date. • If test interval is set to 0 (one shot test), this field defines when to start the test (in batch mode). • To select the date and time, change time (24 hours selection), and then select it.
End schedule	<p>It defines the date when schedule must end.</p> <ul style="list-style-type: none"> • If this is left blank, the schedule will last forever. • If interval is set to 0 (one shot test), Hawkeye will not consider this end schedule. • To select the date and time, change time (24 hours selection), and then select it.

Configure real service tests

Hawkeye enables capability to test node to node but also from probes to servers, cloud services or router interfaces. This capability is provided by Real service test types. These services are designed to run tests against servers and provide information about network performance as well as quality of experience. The Real services differ from site to site tests as they only need one endpoint. They are also called one-arm tests.



View test results

1. After tests are run, go to the test result list web page to view the test results.
2. Open the specific test instances to view full test result information. Use the magnifier  to expand the test result list and to check result.
3. In case of tests with error, looking at detailed test type description as well as the error information of common N2N test to understand the nature of the problem.
4. Interpret the results of the different metric types by using the collected metrics. It is important to adapt the thresholds defined by default in the system to the expected behavior in your network. You can do that globally or for each test setup.

See *Hawkeye User Guide* for more information.

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