BeyondTrust

U-Series Appliance 4.0.4 Installation Guide

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U-Series Appliance Installation

This guide provides information on U-Series 20 and U-Series 50 and diagnostics information. This guide is intended for network security administrators responsible for protecting their organization's computing assets. A familiarity with networking and security concepts is needed.

FCC Certification

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Limited Hardware U-Series Appliance Warranty

This hardware U-Series Appliance is accompanied by a three-year manufacturer's warranty based on the invoice date. (Extended warranties available on request.) The warranty covers all hardware, including internal components supplied in this shipment. The warranty does not cover additional items, such as keyboards, monitors, and mice, not included in this shipment. During the warranty period, the U-Series Appliance will be repaired or replaced at no cost under the warranty terms.

Due to continuing changes in the computer industry, if a replacement is necessary, the U-Series Appliance manufacturer reserves the right to make product substitutions of equal or greater value.

Do not ship any U-Series Appliance without first contacting BeyondTrust Technical Support to coordinate any repairs or replacements. Do not try to repair the U-Series Appliance yourself.

Please back up all data before having the U-Series Appliance serviced or repaired. Neither BeyondTrust nor the U-Series Appliance manufacturer warrants that operation of the U-Series Appliance will be uninterrupted or error-free. In no event will BeyondTrust or the U-Series Appliance manufacturer be responsible or liable for loss or integrity of any data on the U-Series Appliance or any storage media.

Warranty Invalidation

This warranty is void in the event that:

- The U-Series Appliance is damaged due to accident, abuse, misuse, problems with electrical power, modifications or servicing not authorized by BeyondTrust or the U-Series Appliance manufacturer, or failure to operate in accordance with the U-Series Appliance instructions.
- Serial tags, receiving numbers, product stickers, or manufacturer seals have been removed, altered, or tampered with.
- The U-Series Appliance is opened for any reason.
- The U-Series Appliance is damaged due to improper or inadequate packaging when returned for repair or replacement.
- The U-Series Appliance has been tampered with, such as overclocking.

Labor and services performed on items or systems that are found not to be defective may be subject to a separate charge. In addition, the U-Series Appliance manufacturer reserves the right to charge a ten percent restocking fee for items returned which are found not to be defective.

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IMPORTANT!

Do not log on to the Console or Remote Desktop to the Virtual U-Series Appliance unless directed to do so by BeyondTrust Technical Support. Installing any software or changing any additional settings may void your warranty.

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U-Series Appliance Requirements

In this document, "U-Series Appliance" applies to U-Series 20, U-Series v20, U-Series 20 SQL Free, U-Series v20 SQL Free, and U-Series 50.

Client Requirements

Supported browsers:

- Microsoft Edge
- Firefox
- Google Chrome
- Safari

U-Series Appliance Requirements

- 10/100/1000MB Ethernet Connection
- TCP/IP v4
- Rack Mount

Physical U-Series Appliance Package Contents

The U-Series Appliance package consists of the following items. Please verify all materials listed are present and free from visible damage or defects before proceeding. If any item appears to be missing or damaged, please contact BeyondTrust Technical Support.

- U-Series Appliance
- Two Power Cords
- Getting Started Guide
- Rack Mount Kit

Virtual U-Series Appliance Specifications

U-Series v20 and U-Series v20 SQL Free

Requirement	Description
Hard Disk	300GB
RAM	32GB ***Note:*** *For a BeyondInsight deployment with a local SQL Server instance, the minimum requirement is 32GB. If SQL Server is remote or can be turned off based on the roles you are configuring, the minimum requirement can be set to 16GB.*

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Requirement	Description
OS	Microsoft Windows Server 2022 Standard
Database	Microsoft SQL Server 2019 Standard ***Note:*** *The database information does not apply to the U-Series v20 SQL Free. The U-Series v20 SQL Free does not include a database.*
Form Factor	VMware OVA for vSphere ESX 6.5 or Microsoft VHDX for Hyper-V (Gen 2 2012 R2 or later)

Note: *The license included with the U-Series v20 and U-Series v20 SQL Free for Microsoft Windows Server 2022 covers up to 16 cores on the physical virtualization (host) server.*

Physical U-Series Appliance Specifications

U-Series 20 Specifications

Specification	Description
AC Input Voltage	110 to 240 VAC
Rated Input Frequency	50 to 60Hz
Cooling	5 Standard Fans; 1 Standard 1U Heatsink.
Chassis	Chassis with up to 8, 3.5in. Hard Drives
Dimensions	1U rack-mountable server H: 1.68in. (4.28cm) (10.75in. shipping) W: 18.97in. (48.18cm) (24in. shipping) D: 26.89in. (68.30cm) (35.75in. shipping) Weight: approx 45lbs. (48lbs. shipping)
Microprocessor	Intel Xeon Silver 4112, 2.6GHz, 4-Core, 8-Thread, 8.25M Cache, Turbo, HT
Hard Drive	2 × 2TB 7.2 RPM NLAS 12Gbps 512n 2.5in Hot-plug
RAM	128GB
RAID Configuration	RAID 1
RAID Controller	PERC H730P, 2GB NV Cache
NIC	Broadcom 57416 2 Port 10Gb Base-T + 5720 2 Port 1Gb Base-T, rNDC
Power Supply	Dual, hot-plug, Redundant Power Supply (1+1), 495W
Power Cords	2 × NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m)
Rack Rails	ReadyRails™ Sliding Rails with Cable Management Arm
PCIe Riser	Risers with up to 4, x8 PCIe Slots + 2, x16 PCIe Slots
Operating System	Embedded Windows Server 2016 Standard
Database	Microsoft SQL Server 2016 Standard

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U-Series 20 SQL Free

Specification	Description
AC Input Voltage	110 to 240 VAC
Rated Input Frequency	50 to 60Hz
Cooling	5 Standard Fans; 1 Standard 1U Heatsink.
Chassis	Chassis with up to 8, 3.5in. Hard Drives
Dimensions	1U rack-mountable server H: 1.68in. (4.28cm) (10.75in. shipping) W: 18.97in. (48.18cm) (24in. shipping) D: 26.89in. (68.30cm) (35.75in. shipping) Weight: approx 45lbs. (48lbs. shipping)
Microprocessor	Intel Xeon Silver 4112, 2.6GHz, 4-Core, 8-Thread, 8.25M Cache, Turbo, HT
Hard Drive	2 × 2TB 7.2 RPM NLAS 12Gbps 512n 2.5in Hot-plug
RAM	128GB
RAID Configuration	RAID 1
RAID Controller	PERC H730P, 2GB NV Cache
NIC	Broadcom 57416 2 Port 10Gb Base-T + 5720 2 Port 1Gb Base-T, rNDC
Power Supply	Dual, hot-plug, Redundant Power Supply (1+1), 495W
Power Cords	2 × NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m)
Rack Rails	ReadyRails™ Sliding Rails with Cable Management Arm
PCIe Riser	Risers with up to 4, x8 PCIe Slots + 2, x16 PCIe Slots
Operating System	Embedded Windows Server 2016 Standard

U-Series 50 Specifications

Specification	Description
AC Input Voltage	110 to 240 V AC, autoranging
Rated Input Frequency	50 to 60Hz
Cooling	8 Standard Fans, 2 Standard 1U Heatsinks
Chassis	Chassis with up to 8, 3.5in. Hard Drives
Dimensions	1U rack-mountable server H: 1.68in. (4.28 cm) (10.75in. shipping) W: 18.97in. (48.18cm) (24in. shipping) D: 26.89in. (68.30cm) (35.75in. shipping) Weight: approx 45lbs. (48lbs. shipping)
Microprocessor	2 x Intel Xeon Silver 4110, 2.1GHz, 8-Core, 16-Thread, 11M Cache, Turbo, HT
Hard Drive	8 x 960GB SSD SAS Mix Use 12Gbps 512n 2.5in. Hot-plug
RAM	256GB
RAID Configuration	RAID 10

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Specification	Description
RAID Controller	PERC H740P, 8GB NV Cache
NIC	Broadcom 57416 2 Port 10Gb Base-T + 5720 2 Port 1Gb Base-T, rNDC
Power Supply	Dual, hot-plug, Redundant Power Supply (1+1), 750W
Power Cords	2 x NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m)
Rack Rails	ReadyRails™ Sliding Rails with Cable Management Arm
PCIe Riser	Risers with up to 4, x8 PCIe slots + 2, x16 PCIe slots
Operating System	Embedded Windows Server 2016 Standard
Database	Microsoft SQL Server 2016 Standard

Note: *All physical BeyondTrust U-Series Appliances are licensed for the Microsoft Windows Server Operating System and Microsoft SQL Server based on Microsoft Core CAL licenses. U-Series Appliances ship with the Microsoft Certificate of Authenticity (COA) as proof of this licensing.*

However, vSphere and Hyper-V images only have a SQL Server license. The Windows OS license key is provided with information to download images.

U-Series Appliance Firewall Settings and Port Requirements

Firewall Settings

- All outgoing ports are allowed.
- Incoming ports are limited to the default Windows rules (includes allowing DCOM), plus the following:

TCP Ports

Port	Purpose	Target Program/System Resource	Initial Status
80	HTTP	System	Enabled
443	HTTPS	System	Enabled
445	SMB	System	Disabled
1433	SQL Server	C:\Program Files\Microsoft SQL Server\MSSQL13.MSSQLSERVER\MSSQL\Binn\sqlservr.exe	Enabled
2000	App Bus	C:\Program Files(x86)\Common Files\eEye Digital Security\Application Bus\eeyeevnt.exe	Disabled
2383	SQL Analysis Services	C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\bin\msmdsrv.exe	Enabled
3389	RDP	C:\Windows\System32\svchost.exe	Enabled
4422	Session Monitoring SSH	C:\Program Files(x86)\eEye Digital Security\Retina CS\pbsmd.exe	Enabled
4489	Session Monitoring RDP	C:\Program Files(x86)\eEye Digital Security\Retina CS\pbsmd.exe	Enabled

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Port	Purpose	Target Program/System Resource	Initial Status
5022	SQL Server Mirroring	C:\Program Files\Microsoft SQL Server\MSSQL13.MSSQLSERVER\MSSQL\Binn\sqlservr.exe	Enabled
5985	WinRM	System; Restricted to 10.0.0.0-16	Enabled
8530	WSUS HTTP	System	Disabled
8531	WSUS HTTPS	System	Disabled
10001	Central Policy v1	C:\Program Files(x86)\eEye Digital Security\Retina CS\REMCentralPolicyService.exe	Enabled
21690	App Bus	(C:\Program Files(x86)\Common Files\eEye Digital Security\Application Bus\eeyeevnt.exe	Enabled
21690	Event Server	C:\Program Files(x86)\Common Files\eEye Digital Security\Event Server\REMEventsSvc.exe	Enabled

UDP Port

Port	Purpose	Target Program/System Resource	Initial Status
4609	Appliance Discovery	C:\Program Files(x86)\Common Files\eEye Digital Security\Scheduler\eeyeschedulersvc.exe	Enabled

ICMPv4 Protocol

Port	Purpose	Target Program/System Resource	Protocol	Initial Status
Any	ICMP Type 3, Code 4- Destination Unreachable Fragmentation Needed	Any	ICMPv4	Enabled
Any	ICMP Type 8- Echo	Any	ICMPv4	Enabled

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View U-Series Appliance Firewall Settings and Port Requirements

Firewall Settings

- All outgoing ports are allowed.
- Incoming ports are limited to the default Windows rules (includes allowing DCOM), plus the following:

TCP Ports

Port	Purpose	Target Program/System Resource	Initial Status
80	HTTP	System	Enabled
443	HTTPS	System	Enabled
445	SMB	System	Disabled
1433	SQL Server	C:\Program Files\Microsoft SQL Server\MSSQL13.MSSQLSERVER\MSSQL\Binn\sqlservr.exe	Enabled
2000	App Bus	C:\Program Files(x86)\Common Files\eEye Digital Security\Application Bus\eeyeevnt.exe	Disabled
2383	SQL Analysis Services	C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\bin\msmdsrv.exe	Enabled
3389	RDP	C:\Windows\System32\svchost.exe	Enabled
4422	Session Monitoring SSH	C:\Program Files(x86)\eEye Digital Security\Retina CS\pbsmd.exe	Enabled
4489	Session Monitoring RDP	C:\Program Files(x86)\eEye Digital Security\Retina CS\pbsmd.exe	Enabled
5022	SQL Server Mirroring	C:\Program Files\Microsoft SQL Server\MSSQL13.MSSQLSERVER\MSSQL\Binn\sqlservr.exe	Enabled
5985	WinRM	System; Restricted to 10.0.0.0-16	Enabled
8530	WSUS HTTP	System	Disabled
8531	WSUS HTTPS	System	Disabled
10001	Central Policy v1	C:\Program Files(x86)\eEye Digital Security\Retina CS\REMCentralPolicyService.exe	Enabled
21690	App Bus	(C:\Program Files(x86)\Common Files\eEye Digital Security\Application Bus\eeyeevnt.exe	Enabled
21690	Event Server	C:\Program Files(x86)\Common Files\eEye Digital Security\Event Server\REMEventsSvc.exe	Enabled

UDP Port

Port	Purpose	Target Program/System Resource	Initial Status
4609	Appliance Discovery	C:\Program Files(x86)\Common Files\eEye Digital Security\Scheduler\eeyeschedulersvc.exe	Enabled

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ICMPv4 Protocol

Port	Purpose	Target Program/System Resource	Protocol	Initial Status
Any	ICMP Type 3, Code 4- Destination Unreachable Fragmentation Needed	Any	ICMPv4	Enabled
Any	ICMP Type 8- Echo	Any	ICMPv4	Enabled

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Access Features from the U-Series Appliance LCD Panel

You can access the following features from the U-Series Appliance LCD panel.

Access Settings Menu

To access the settings:

The LCD panel displays *Please wait*. Once the U-Series Appliance completes the powering procedures, the U-Series Appliance displays the following actions.

LCD Panel Functionality

LCD Panel	Description
	Press the check to enter or accept the setting.
	Press the up or down arrow to navigate through the menus.
	Press the right or left arrow to access settings in the menu.
	Press the X to cancel the setting.

Enable RDP

From the LCD panel, start where *U-Series 20 Ready* is displayed.

1. Press the check to enter **Settings / Show IP**.
2. Press check . The IP address of the U-Series Appliance is displayed.
3. Hold both the up and down buttons for four seconds. Do not do anything else between the previous step and this one.

Reset Administrator Password

1. Check the **Allow LCD Panel to Reset Administrator Password** box.
2. If needed, go to the U-Series Appliance to reset the administrator password.
3. Select **Show IP** to view the IP address.
4. Hold the up and down buttons simultaneously on the U-Series Appliance LCD panel. A random password is generated.
5. Press the check to accept the changed password.

On a U-Series Appliance with Windows Server 2016, you cannot reset an administrator account from the LCD panel. A locked administrator account is unlocked after 20 minutes. Try logging on again after the 20-minute timeout period. If the account remains locked, contact BeyondTrust Technical Support.

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U-Series Appliance Version

1. On the LCD panel, select **Versions** with the check .
2. Scroll through with the left or right arrows to see the version for the U-Series Appliance, BeyondInsight, Discovery Scanner, and audits.

Power Off

You can power off the U-Series Appliance using the LCD panel. To power off, on the LCD panel, select **Power Off**. The U-Series Appliance powers off.

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Set Up the U-Series Appliance

The U-Series Appliance is designed to be configured and used with a web browser.

IMPORTANT!

If you purchased Professional Services, schedule your engagement with your Professional Services representative before starting the Configuration Wizard.

Power on the U-Series Appliance

1. Plug the power cables for the U-Series Appliance into a safe power source. The U-Series Appliance's power supplies automatically switch between 120V and 240V, as needed.
2. Plug a network cable into the network interface port.
3. Press and release the power button on the front of the U-Series Appliance. The power LED immediately to the right of the reset button illuminates, and the HDD activity LED (immediately to the right of the power LED) begins to flash. Initialization of the U-Series Appliance completes in about 60 seconds.

Note: *The NIC1 and NIC2 LEDs may illuminate and show activity even when the U-Series Appliance is not powered on; therefore, it is important to check the power and HDD LEDs to confirm that the U-Series Appliance is on.*

Perform Initial Network Configuration

The U-Series Appliance is configured to use DHCP and receives an assigned IP address. To access your U-Series Appliance the first time, open a browser on a device on the same network subnet as the U-Series Appliance. Enter the U-Series Appliance's factory IP address as displayed on the LCD screen, preceded by **https://**, for example, **https://10.10.123.456**. You can find this IP address using the LCD display of the U-Series Appliance. You will need the IP address later in the process when you configure the U-Series Appliance.

Display IP Address

To display the IP address, select **Show IP** on the LCD panel. The IP address automatically displays.

Automatically Enter IP Address

On the LCD panel, select **Config IP**, then select **Auto DHCP**. The U-Series Appliance automatically updates the IP address to the DHCP protocol.

Manually Enter IP Address

On the LCD panel, select **Config IP**, then select **Manual**. Enter the **IP Address**, **Subnet Mask**, **Gateway**, **DNS 1** and **DNS 2**.

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Hardware Notes

The integrated Dell Remote Access Controller (iDRAC) is configured to use the primary interface (LAN1). The iDRAC shares the interface with Windows. By default, iDRAC is not configured.

The U-Series Appliance has more than one adapter. If all adapters are used, the adapter chosen during scan time is determined by the route associated with it.

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Configure U-Series Appliance Virtual Images

The U-Series v20 can be shipped to you as a virtual image in VMware or Hyper-V. Virtual U-Series Appliances are based on Windows Server 2022.

For virtual machine requirements, please see "Virtual U-Series Appliance Specifications" on page 5.

Download Virtual Images

Supported U-Series Hyper-V and VMware images can be downloaded from the BeyondTrust Customer Support Portal.

***Note:** Image download speed and time may vary due to the large file sizes of these images and your internet connectivity.*

Import the Virtual Machine

IMPORTANT!

We recommend that you do NOT join the Virtual U-Series Appliance to a domain. If this is a requirement, please contact BeyondTrust Services for assistance.

Before you can configure the Virtual U-Series Appliance, you must go through the following steps to prepare the virtual image.

VMware

1. In vSphere Client, select **File > Deploy OVF Template**.
2. Browse to the **VMWare folder > .ova package**.
3. Go through the wizard.

Hyper-V

The following procedure is a guide only. For more detailed information about Hyper-V features, refer to Hyper-V product documentation.

1. In **Hyper-V Manager**, select the host machine, then select **Action > Import Virtual Machine**. If the **Before You Begin** page appears, click **Next**. Otherwise, go to step 4.
2. On the **Locate Folder** page, browse to the folder containing the image, and select the name.
3. Click the **Select Folder** button at the bottom.

***Note:** The folder you want to select contains three other folders (Virtual Machine, Virtual Hard Drive, Snapshots). Do not import the VHD directly.*

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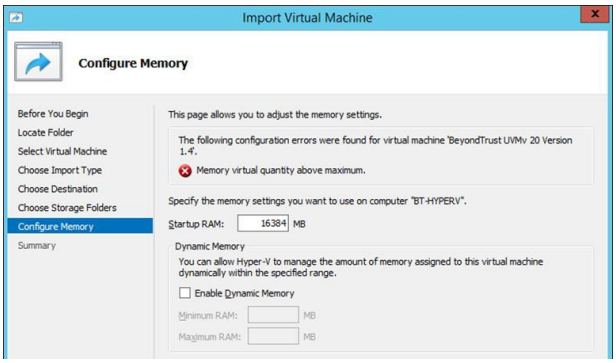
4. On the **Select Virtual Machine** page, verify that the machine appears in the list and click **Next**.
5. On the **Choose Import Type** page, make sure you retain the existing unique ID.
6. On the **Choose Import Type** page, select **Copy the virtual machine** and click **Next**.
7. On the **Choose Destination** page, select where you want to store your virtual machine files.
8. The default behavior is to import the files to the default Hyper-V folders set by your server configuration. If you want to override this, check the **Store the Virtual Machine** in a different location box and browse to your locations.
9. Select where you want to store the imported VHD and click **Next**. If there are any issues with the import, additional steps will appear.

   For example, a Virtual U-Series Appliance is configured to use a minimum of 32GB of RAM. If your server does not support this much RAM or have enough RAM available, the message *Memory virtual quantity above maximum* appears.



10. Review the import settings.
11. Click **Finish** to import the U-Series Appliance.

Configure the IP Address

You can use the following account to set your IP address.

Account Name: btadmin

Password: ch@ngeM3now#!#!

> ***Note:*** *If you completed the Configuration Wizard, you have already changed the password.*

1. Log on to the VM using the **btadmin** account.
2. Double-click the **Local Area Connection** on the desktop.
3. Click the **Properties** button.
4. From the list, select **Internet Protocol Version 4**.
5. Click the **Properties** button.
6. Enter the IP address and DNS server fields, as needed.

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Configure the BeyondTrust U-Series Appliance

There are two parts to configuring your U-Series Appliance:

- **Deployment wizard**: Intended for infrastructure teams. Includes setting up networking details, such as time zone, IP address settings, Internet connections, and so on.
- **Configuration wizard**: Intended for security administrators. Includes BeyondTrust licensing, selecting roles selection, setting up how to receive updates from BeyondTrust, and selecting a solution.

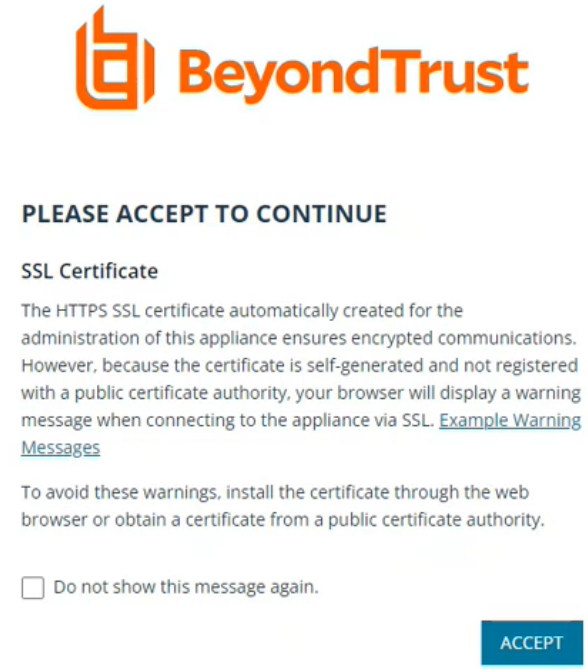
License the Microsoft Windows Operating System

As part of setting up your new appliance, you must activate the Windows operating system. New physical images ship without the Windows license configured. There are two ways to apply the Windows license:

- When you initially access the appliance to start the configuration
- On the **Software and Licensing** page after the appliance is configured

Apply the Windows License Before Configuring the Appliance

1. When accessing the appliance to start configuration, click **Accept** on the **SSL Certificate** page.



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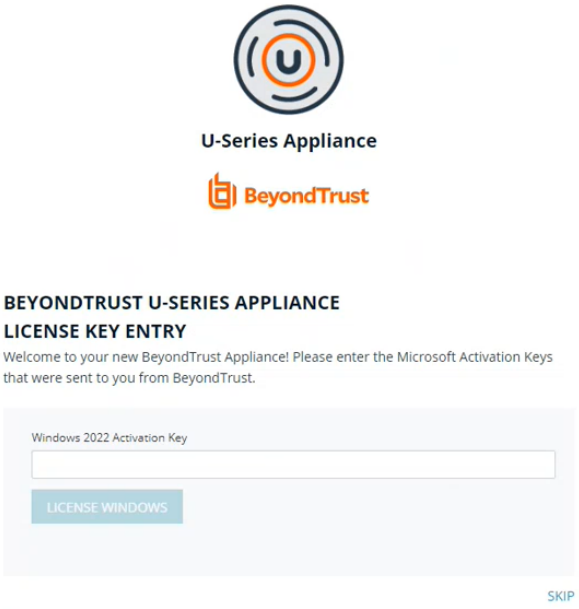
2. Enter the license key, and then click **License Windows**.



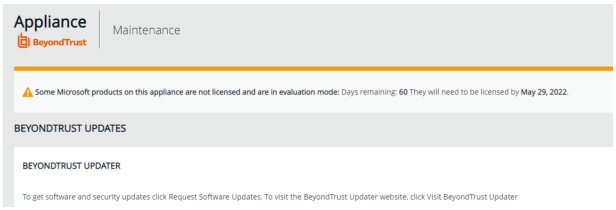
After you enter the key, the U-Series Appliance deployment and configuration wizard starts. Instructions are detailed in the next sections.

Apply the Windows License on the U-Series Appliance Website

1. If you decide to license Windows later, from the sidebar menu, click **Software and Licensing**, and then select **Product Licensing**.
2. Click the **Microsoft** tab.
3. Enter a **Microsoft Product Key**, and then click **Activate Windows**.

Evaluation Mode Banner

If you do not activate Windows, messaging on the **U-Series Appliance** website indicates you are using the software in evaluation mode. The number of days remaining for the evaluation period is shown.



Run the Deployment Wizard

SQL Server can be included as part of your U-Series Appliance, or you can use your own SQL Server deployment. If SQL Server is part of your U-Series Appliance package, a SQL Server COA is included along with the Windows Operating System key and the BeyondInsight key.

If you are using a U-Series Appliance virtual image, you must configure the virtual image before proceeding with the U-Series Appliance configuration.

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1. Open a browser and enter the IP address for the U-Series Appliance, **https://[U-Series Appliance IP address]**.
2. The SSL certificate warning window displays. The SSL certificate automatically created for the U-Series Appliance ensures encrypted communications.

   We recommend that you replace the automatically generated certificate with a valid certificate issued by a certificate authority. Check the box to not display the information page again. Browser warnings are displayed until the SSL certificate is installed or a valid certificate is obtained.

3. Select **Continue to this Website**.
4. The **U-Series License Keys** window appears (for Windows and possibly SQL Server keys, if you have SQL Server as part of your package). If you want to skip this step for now, click **Skip**. Otherwise, enter your activation key(s).

IMPORTANT!

*If you skip entering license keys here, warning messages will appear in the U-Series Appliance interface to remind you to enter your license keys for activation. Enter the license keys under the **Software and Licensing > Product Licensing > Microsoft tab** section.*

5. Click **License Windows**.
6. Read through the deployment and configuration details, and then click **Start Deployment**.
7. Create an administrator account name, including the password and email address. Click **Create Admin**.
8. License details are displayed on the **Licensing Agreements** page for **BeyondTrust**, **Microsoft**, and **SQL Server**. Accept the licensing agreements that apply to you. If you purchased all three, select **Accept All 3 Licensing Agreements**.
9. Enter the name for the U-Series Appliance.

IMPORTANT!

Once you have named your U-Series Appliance, it cannot be renamed. If at any point you need to rename the appliance, you must either re-image (if it is a physical appliance) or re-deploy (if it is a virtual appliance) the image.

10. The IP address can be manually configured or automatically assigned. Enter the network details to manually configure the IP address. Otherwise, select **Obtain IP address automatically (DHCP)**.
11. On the **Internet Connection** page, select one of the following ways to enter the license keys and to receive updates:
    - **Connect to the internet for licensing and updates. (No proxy required):** Select if there is an Internet connection and no proxy server.
    - **Connect to the internet for licensing and updates through a proxy server:** Select if you use a proxy server.
    - **No Internet connection. (Perform manual updates):** Select if the U-Series Appliance does not have an Internet connection.
12. On the **Timezone and Time Settings** page, select a time zone and synchronization settings. Date and synchronization settings include:
    - **Use NTP server for time**
    - **Manually Configure Date and Time**
    - **Enable VMware Tools periodic time synchronization**

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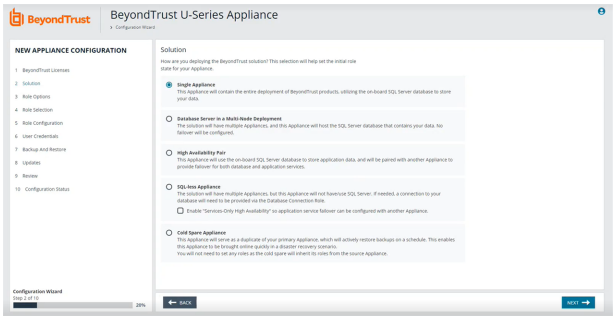
13. On the **SMTP Settings** page:
    - Enter the SMTP server IP address and port. The default port number is 25.
    - Optionally, select **SSL** to enforce SSL encryption when accessing the server.
    - Check the **SMTP Server requires authentication** box to use credentials to access the server.
14. Review the deployment settings, and then click **Finish**.

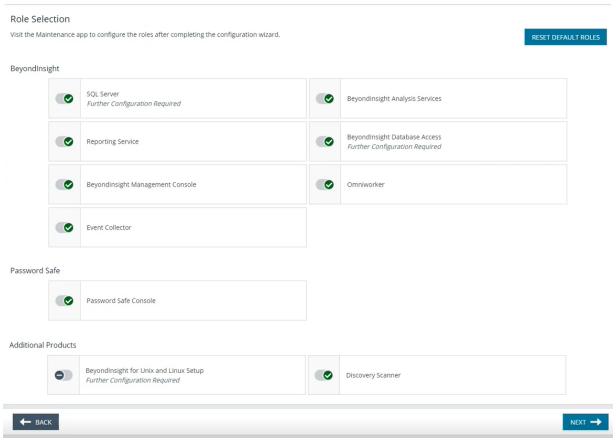
It can take a few minutes for the deployment settings to apply. If any errors occur, you can click **Back** to change settings, if needed. If the deployment is successful, select **Proceed to Configuration Wizard**.

Run the Configuration Wizard

1. On the **BeyondTrust Licenses** page, enter the U-Series Appliance serial number and select **Get License Key**. The **BeyondInsight License Key** box is populated with the key. Select **License Appliance** to apply the key. If you are working offline, go to https://licensing.beyondtrust.com to get the BeyondInsight license key. Click **Next**.
2. On the **Solution** page, select an item from the list that represents your implementation for the U-Series Appliance.
    - Single U-Series Appliance
    - Database Server in a Multi-Node Deployment
    - High Availability Pair
    - SQL-less U-Series Appliance
    - Cold Spare U-Series Appliance



3. On the **Roles Options** page, select the default roles or select to go through the **Role Questionnaire**.
4. On the **Role Questionnaire** page, go through the list of questions and check the boxes for the questions that apply to your solution. Recommended roles are listed on the **Role Selection** page based on your questionnaire results. Click **Next** to see the roles.
5. On the **Role Selection** page, select the roles you want to use. The screen capture indicates there are roles that require further configuration. Click **Next**.



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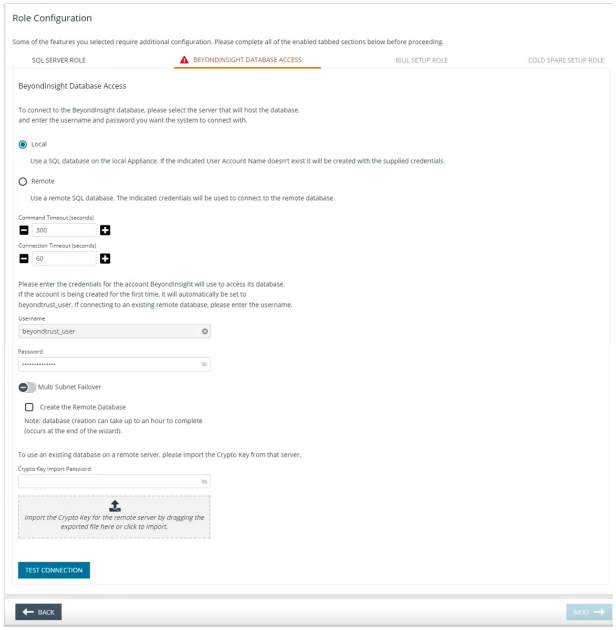
6. On the **Role Configuration** page, select the tab for the respective role to set up that feature.



   - **SQL Server Role**: Select **Allow incoming remote database connections**, and then enter the database password.
   - **BeyondInsight Database Access**: Select the database server and enter the database logon details. When you select SQL Server, **Username** is populated with the same user name in the Configuration wizard during your initial U-Series Appliance setup. The account is created with least privilege. Optionally, enter command timeout and connection timeout values. In a database cluster scenario, you can turn on **multi subnet failover** here.
   - **BIUL Setup Role**: If you select **Remote**, provide the database details to access the remote database, including server name, database name, port number (default is 1433), and database logon details. To use an existing remote database, you must import a password protected cryto key from the appliance running the BeyondInsight Management console that created the database. Click **Test Connection** to ensure the database can be accessed from your U-Series Appliance.
   - **Cold Spare Setup Role**: Set up the **Restore Location** where backups are stored from the production server this cold spare would replace, if that need ever arises (disaster recovery, failure, network issue, etc.). The cold spare machine consumes those backups and performs a restore on them at the scheduled interval. A temporary name is used to ensure that there are no DNS name resolution conflicts, if your network is not segregated. This temporary name is used until the appliance is taken out of *Cold Spare* mode, which happens when you disable the Cold Spare role.

IMPORTANT!

While it is possible to rename administrator accounts later, we recommended choosing account names carefully during deployment and configuration to avoid renaming them later.

7. On the **User Credentials** page, enter logon credentials for the following user accounts: BeyondInsight, Central Policy, and BeyondTrust Updater.
8. On the **Backup and Restore** page, set up the location and schedule for backup files. The backup can be set up later in Maintenance; select **I will setup my Appliance later through Maintenance**, and then click **Next**.
9. On the **Updates** page, select to automatically download updates using BeyondTrust Updater Server. Optionally, select **Do not check for updates** to opt out of this feature.
10. Click **Finish**.

The BeyondInsight configuration provides the same least privilege SQL Server account during the database configuration.

For more information about the permissions assigned to that account, please see section "Least Privilege Database User Account Setup" in the BeyondInsight Installation Guide at https://www.beyondtrust.com/docs/beyondinsight-password-safe/documents/bi/bi-install.pdf.

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Key Management Service Support

After installation and configuration, if your server does not automatically discover the Key Management Service (KMS) server, you may receive a *Windows activation failed* message. Specify the KMS key and IP address again.

You can replace our key with a known Volume License Key and then call into your KMS server to count against your total (number of licenses).

To activate your volume license key:

1. From the sidebar menu, click **Software and Licensing**, and then select **Product Licensing**.
2. Click the **Microsoft** tab, and select the **KMS** option, which displays two fields to complete.
3. Enter your **Volume License Key**.
4. Enter the **KMS server address** that will validate and track the license. This is only valid on appliances created as volume images.
5. Click **Activate Windows**.

For more information, please see Why did Windows activation fail on my EC2 Windows instance? at https://aws.amazon.com/premiumsupport/knowledge-center/windows-activation-fails/.

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Connect to a Cloud Database

You can create remote database connections to an Azure SQL database or Amazon RDS database.

Connect to Azure SQL Database

Review the information in this section to learn more about using an Azure SQL database for BeyondInsight.

Prerequisites

- If starting a new BeyondInsight installation, ensure you have already created an empty database in Azure SQL.
- If you are connecting to an existing database server in Azure SQL, ensure the connection string details are available.
- BeyondInsight 22.2 (or later).

Resources

An Azure SQL database must already be created.

For more information, please see:

- *Create and manage servers and single databases in Azure SQL Database at https://docs.microsoft.com/en-us/azure/azure-sql/database/single-database-manage*
- *Quickstart: Create an Azure SQL Database single database at https://docs.microsoft.com/en-us/azure/azure-sql/database/single-database-create-quickstart?tabs=azure-portal*

Configure Azure SQL

1. Create an empty database in Azure SQL.
    - Ensure a database server is created.
    - Make a note of the connection string information.
    - Make a note of the Azure SQL Server administrator name and password. This is needed during the U-Series Configuration Wizard when you create the database.
2. Ensure firewall rules are set up appropriately to allow your U-Series Appliance to connect to your Azure SQL machine.

***Note:** Every Azure SQL machine has firewall rules that need to be configured in addition to general Azure firewall rules.*

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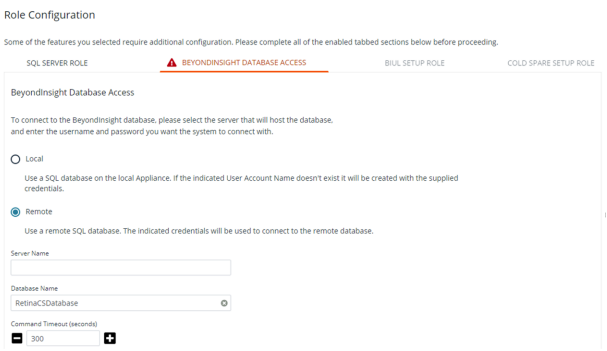
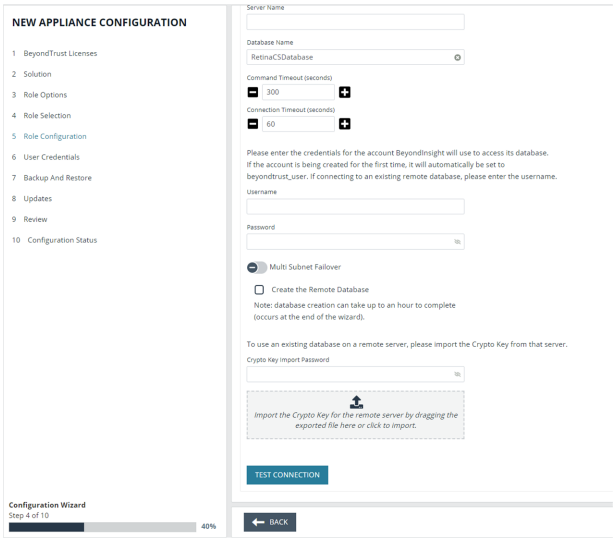
3. When going through the Configuration Wizard, select **Remote** for the BeyondInsight database access.



Although the Azure SQL database is already created, you must select the **Create the Remote Database** option on the first appliance configured to populate the empty Azure SQL database with BeyondInsight SQL Server tables.

For any additional appliances, use the existing database option on the **Role Configuration** page after the first appliance is configured and the crypto key is exported.



Connect to Amazon RDS Instance

Prerequisites

- BeyondInsight 22.3
- U-Series Appliance 4.0

Resources

A database instance must already be created.

> *For more information, please see Getting started with Amazon RDS at https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP_GettingStarted.html.*

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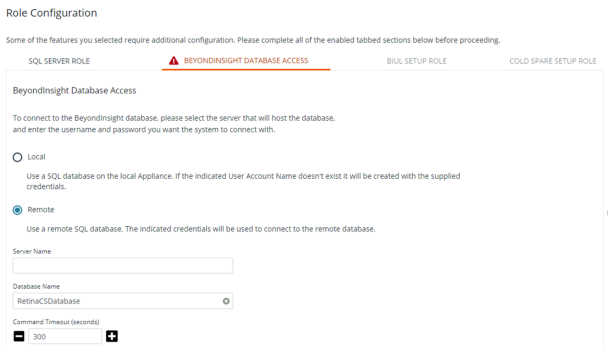
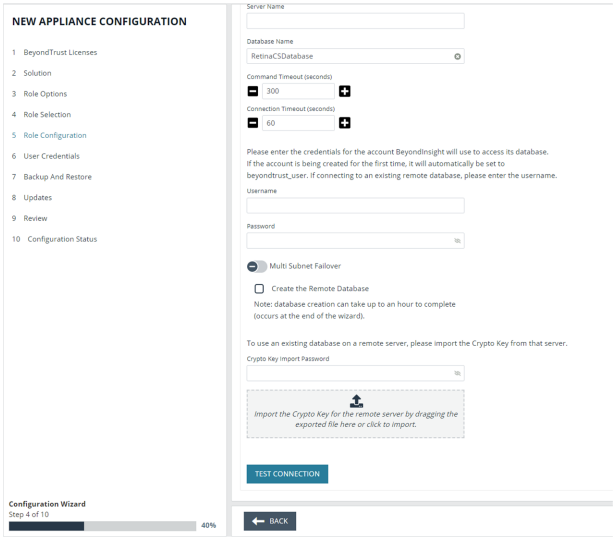
Configure Amazon RDS

1. Create an empty database.
    - Ensure a database server is created.
    - Make a note of the connection string information.
    - Make a note of the Amazon RDS administrator name and password. This is needed during the U-Series Configuration Wizard when you create the connection to the service.
2. Ensure firewall rules are set up appropriately to allow your U-Series Appliance to connect to the Amazon RDS machine.
3. When going through the Configuration Wizard, select **Remote** for the BeyondInsight database access.



You must select the **Create the Remote Database** option on the first appliance configured to populate the empty Amazon RDS database with BeyondInsight SQL Server tables.

For any additional appliances, use the existing database option on the **Role Configuration** page after the first appliance is configured and the crypto key is exported.



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