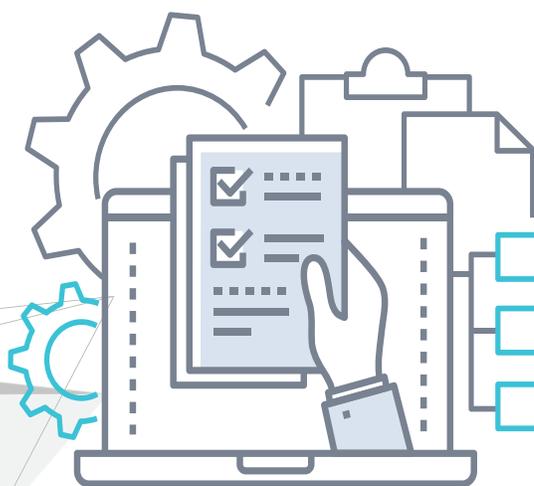


Deployment Guide for Unitrends Backup on VMware

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Chapter 1: Introduction

Thank you for choosing the Unitrends Backup virtual appliance. You are minutes away from protecting your environment.

With Unitrends Backup deployments, the appliance's initial disk stores no unique data or backups. Storing this data on different disks or external storage arrays enables you to reattach the storage to a different Unitrends Backup appliance, so you can retain your original appliance's settings and backup data if you need to deploy a new Unitrends Backup appliance.

This guide includes instructions for deploying using new storage and for deploying using storage that contains backup data from another virtual appliance. The process is similar for both deployment types, and the applicable sections cover any variations.

Note: Attaching backup storage that contains backups from another Unitrends Backup appliance is supported only if the original appliance is running the same operating system as the newly deployed appliance. Appliances deployed with version 10.3.6 or higher run CentOS 7. Appliances deployed with older versions run CentOS 6.

Deployment consists of creating the Unitrends Backup virtual machine (VM), attaching backup storage, and configuring appliance settings. Terms used in this guide are defined in the following table:

Term	Definition
Added disk	VMDK virtual disk storage created by deploying the Unitrends Backup OVA file or by using the ESXi host. A VMDK can be created from direct attached storage (DAS) that is internal to the ESXi host, or from external SAN or NAS storage that is connected to the ESXi host over the iSCSI, NFS, or CIFS protocol. Also called <i>attached disk storage</i> .
Appliance	The Unitrends Backup system that backs up and recovers data. Consists of the Unitrends Backup VM, Unitrends software, attached storage, and additional configuration settings.
External storage	SAN or NAS storage that is connected directly to the Unitrends Backup VM over the iSCSI, CIFS, or NFS protocol.
Host	ESXi server that houses the Unitrends Backup VM. Also called a <i>hypervisor</i> .
Initial backup storage	Storage you attach to the Unitrends Backup VM that is used to store appliance configuration settings and backups. You attach this storage after deploying the Unitrends Backup VM, but before you configure the appliance using the Quick Setup Wizard. The initial backup storage must be 200GB - 64TB in size.
Initial disk	100GB disk used to create the Unitrends Backup VM. While installing the OVA, you select a datastore on the ESXi host that the installer uses to create this disk.
OVA file	Unitrends OVA file used to deploy the Unitrends Backup VM on your ESXi host.

Term	Definition
Quick Setup Wizard	The Quick Setup Wizard automatically launches the first time you access the appliance UI from a web browser. Work your way through this wizard to configure additional appliance settings, such as date and time, hostname, and email.
Unitrends Backup VM	Virtual machine created by deploying the Unitrends Backup OVA file.

Chapter 2: Requirements and Considerations

Before deploying your Unitrends Backup appliance, verify that the following requirements have been met:

- ["Hypervisor requirements and considerations"](#)
- ["Network requirements"](#)
- ["Port requirements" on page 8](#)
- ["Web access" on page 10](#)
- ["Virtual machine resource requirements" on page 10](#)

Hypervisor requirements and considerations

Unitrends recommends running your appliance and the VMs it protects on different hosts to avoid losing your VMs and their backups if one of the hosts fails.

You can deploy Unitrends Backup to the following ESXi versions: 5.5, 6.0, 6.5, 6.7, 7.0, or 8.0.

Network requirements

There are several addresses you should permit for all deployments. All of these ports are outgoing connections from the Unitrends appliance. We do not require incoming NAT of ports or exposing the unit to a public IP, only outgoing communication from a local source Unitrends appliance is needed.

IMPORTANT! Never expose the appliance Web UI or SSH connections to open external ports. Doing so may void your support agreement until the appliance can be secured properly. Never deploy the Unitrends appliance on a public IP. All incoming ports to a Unitrends appliance must be firewall protected. Privately operated hot backup copy targets should be deployed in such a way as to secure the VPN connection to only trusted source external IPs.

Network requirements vary by whether DHCP is available in your environment.

DHCP is available

If DHCP is available in your environment, review these requirements and considerations before you deploy the appliance VM:

- If your environment goes offline for an extended period of time, your appliance may be assigned a new IP address from the DHCP server. This may cause a temporary loss of backup and recovery functionality. If this occurs, see [How to resolve recovery issues related to appliance IP address changes](#) for instructions on how to proceed.
- The eno1 adapter is, by default, configured for DHCP.
- DHCP cannot be configured for more than one network adapter at any given time.
- A network adapter configured for DHCP cannot be managed via the appliance user interface (UI) unless you intend to assign it a static IP address.

- Unitrends appliances intended for use as backup copy targets must be assigned static IP addresses.

DHCP is not available

If DHCP is not available in your environment, or if you intend to use this appliance as a backup copy target, you must configure a static IP address for the appliance. Initially, the Unitrends Backup VM is created with the IP address 10.10.10.1 and the subnet mask 255.255.255.0. If this IP is currently being used in your environment, disable it until you bring the Unitrends Backup VM online and assign it a new IP address. During deployment, you must configure the following settings:

- An IP address and subnet. The IP address and the subnet enable communication between the appliance and other machines on your network.
- A gateway. A gateway enables communication between the appliance and machines on different subnets.
- Appliance DNS settings, required for the following:
 - To connect the appliance to the Internet.
 - To add assets using only their hostnames (rather than by fully qualified domain names).
 - To update your appliance from the user interface (UI).
 - To access the Unitrends Community forums from the UI.

Note: You can obtain the above information from your network administrator.

Port requirements

Additional ports must be open for connectivity to the Internet and for connectivity to any hot backup copy target. See the following for details:

Note: Unitrends does not officially support backup through firewalls. For details, see this KB article: [Backup fails through Router, DMZ, or Firewall.](#)

- "Connectivity between the appliance and the Internet"
- "Connectivity between the appliance and a hot backup copy target"

Connectivity between the appliance and the Internet

Task	Port, Protocol, and Rule	Destination	Notes
Backup and backup copy operations	443/HTTPS Outbound from the Unitrends appliance	kaseyagroup-appliance-registry.jfrog.io	A secure docker container registry required to update backup and backup copy components.

Task	Port, Protocol, and Rule	Destination	Notes
Product Updates	443/HTTPS Outbound from the Unitrends appliance 22/SFTP Outbound from the Unitrends appliance	repo.unitrends.com sftp.unitrends.com	repo.unitrends.com is used by the Unitrends appliance to perform software updates. sftp.unitrends.com is used to collect files related to active support tickets.
Remote Support	443/HTTPS Outbound from the Unitrends appliance	support-itivity.unitrends.com	Used for opening a remote tunnel to the Unitrends support team.
Proactive Monitoring	161/UDP Outbound from the Unitrends appliance 161/TCP Outbound from the Unitrends appliance 162/UDP Outbound from the Unitrends appliance 162/TCP Outbound from the Unitrends appliance	notifications.unitrends.com	Used for SNMP trap collection for all proactive monitoring.

Connectivity between the appliance and a hot backup copy target

Task	Port, Protocol, and Rule	Destination	Notes
Backup copy to the Unitrends Cloud or your Unitrends target appliance.	The OpenVPN port provided by Unitrends Or The port number you have configured for the secure tunnel connection to the backup copy target appliance must be open Outbound for the TCP and UDP protocols. Port 443 must also be open Outbound for the UCP protocol.	For Unitrends Cloud, the public-facing IP address provided by Unitrends. Target appliance hostname and	Used for copying data to the Unitrends Cloud or your Unitrends target appliance.

Task	Port, Protocol, and Rule	Destination	Notes
		IP	

Web access

Once you have configured network settings, you can access the appliance UI by entering its IP address in a Firefox or Chrome browser. (Internet Explorer is not supported.)

Virtual machine resource requirements

Before deploying, verify that your host has sufficient resources to create the Unitrends Backup VM. If minimum required resources are not available, deployment may fail.

The following resources are required to deploy the Unitrends Backup VM:

Note: These are the minimum resources required to deploy and begin using the Unitrends Backup appliance. As you add jobs and storage, be sure to monitor the system and add resources as needed over the lifetime of the appliance.

- A minimum of two virtual processors (CPUs).
- A minimum of 8GB of RAM.
- 100GB of space for the VM's initial disk.
- At least 200GB of backup storage.

Chapter 3: Determining your Storage Strategy

Before deploying your Unitrends Backup appliance, you must determine the strategy to use for all backup storage. It is important to plan your approach carefully because you cannot change this initial configuration. The following backup storage options are available:

- Added disk: VMDK disks created by using the ESXi host. These disks can use direct attached storage (DAS, internal to the hypervisor) or external SAN or NAS storage that is connected to the hypervisor. Unitrends recommends using added disk storage.
- External storage:
 - A SAN LUN connected directly to the Unitrends Backup VM over the iSCSI protocol.
 - A NAS share connected directly to the Unitrends Backup VM over the CIFS or NFS protocol.

Although you cannot change the initial configuration, you can add more storage to your appliance as your storage needs change. If you choose to use added disk storage, Unitrends recommends adding virtual disks to the Unitrends Backup VM by using the hypervisor and expanding the initial backup storage to include them. If you choose to use a SAN or NAS directly attached to the Unitrends Backup VM, expanding the initial backup storage is not supported. Instead, you can add LUNs or shares as separate storage areas.

How Unitrends Backup appliance storage works

An initial disk of approximately 100GB is used to deploy the Unitrends Backup VM. You must also add a minimum of 200GB as the initial backup storage. You cannot complete deployment without adding the initial backup storage because this storage contains the appliance's unique data and is used to store backups.

Storing the appliance's unique data separately from the initial disk enables you to reattach the backup storage to a new Unitrends Backup VM to recover the original appliance's settings and backups.

Storage recommendations

Consider the following recommendations when determining your storage approach.

WARNING! Unitrends strongly recommends that all Unitrends Backup storage is either direct attached storage (DAS, internal to the hypervisor) or resides on one external storage array. If you configure storage across multiple storage arrays and one becomes unavailable, all backup data ends up corrupted, resulting in total data loss.

Unitrends Backup Storage Component	Recommendations
All	<p>These recommendations apply to all Unitrends Backup storage (initial disk, initial backup storage, and additional backup storage):</p> <ul style="list-style-type: none"> • Unitrends strongly recommends using hypervisor-certified storage arrays on VMware's hardware certified list for deploying Unitrends Backup appliances. • Once you have selected a type of backup storage, Unitrends recommends using the same type of storage to add more backup storage in the future. • Do not use Storage vMotion. Storage must remain in a fixed location. • Unitrends recommends using DAS, internal to the hypervisor, or to leverage SAN or NAS storage that you expose to the hypervisor. <ul style="list-style-type: none"> – You can create VMDKs on storage internal to the hypervisor (DAS). – You can expose a SAN or NAS to the hypervisor and use the hypervisor to create a datastore from this storage. You can then select this datastore to create VMDKs. • To use external SAN or NAS storage that is directly attached to the Unitrends Backup VM, follow these recommendations: <div data-bbox="402 1018 1458 1207" style="border: 1px solid #00a0e3; padding: 5px; margin: 5px 0;"> <p>Note: Unitrends does not recommend attaching external storage directly to the Unitrends Backup VM. If you do choose to connect external storage to the Unitrends Backup VM directly over network protocols (CIFS, NFS, or iSCSI), make sure to use a supported vendor from the list in Supported external storage vendors for use with Unitrends Backup appliances.</p> </div> <ul style="list-style-type: none"> – The shares or LUNs used by the Unitrends Backup VM should be dedicated to that Unitrends Backup VM and not shared by other virtual machines, applications, etc. – You can deploy the Unitrends Backup VM on a hypervisor in a cluster configuration and use shared storage. However, in this configuration, the Unitrends Backup VM should use a dedicated NAS share or SAN LUN. – For best performance with SAN storage, use a thick-provisioned LUN and a thick-provisioned eager zeroed VMDK.

Unitrends Backup Storage Component	Recommendations
Initial disk	<p>You create the Unitrends Backup VM by deploying the OVA file. During deployment (described in "Step 2: Deploy the Unitrends Backup VM" on page 18), you make various selections within your hypervisor, including the datastore and disk format used to create the initial disk for the Unitrends Backup VM.</p> <p>The initial disk can reside on DAS, internal to the hypervisor, or on external storage attached to the hypervisor.</p> <hr/> <p>Note: If you intend to use external storage attached directly to the Unitrends Backup VM as the initial backup storage, be sure to use the same external storage array for both the initial disk and the initial backup storage.</p> <hr/>
Initial backup storage	<p>You must add a minimum of 200GB of initial backup storage. The following requirements and recommendations apply:</p> <ul style="list-style-type: none"> • For disaster recovery, it is important to know which VMDK, LUN, or share was used as the initial backup storage, so make sure to keep a record of your selection. • If you opt to use a LUN attached to the hypervisor for the Unitrends Backup VM's initial disk, do not attach that LUN directly to the Unitrends Backup VM to use as backup storage. Allocate a separate LUN (on the same array) to use as backup storage instead. • Additional configuration is required if you are using external CIFS or NFS storage attached to the Unitrends Backup VM as the initial backup storage. For details, see Special Configuration for NFS or CIFS with UB Initial Deployment Storage. <p>How you set up the initial backup storage varies by storage type:</p> <ul style="list-style-type: none"> • If you are using added disk storage, you must add a VMDK to the Unitrends Backup VM by using the ESXi host (see "Step 3: Attach backup storage" on page 29). The appliance automatically uses the first VMDK disk that was added to the Unitrends Backup VM as the initial backup storage. • If you are using external SAN or NAS storage attached directly to the Unitrends Backup VM, you must expose the storage to the Unitrends Backup VM and add it as initial backup storage in the Unitrends Backup UI after completing the Quick Setup Wizard (see "Step 5: Add the initial backup storage device if using external storage directly attached to the Unitrends Backup VM" on page 42).

Unitrends Backup Storage Component	Recommendations
Additional backup storage	<p>It is a best practice to add storage in the same way you created the initial backup storage. Unitrends recommends expanding storage for best performance, but you can add a separate storage area of roughly the same size if necessary.</p> <p>When you add attached disk or external NAS or SAN storage, the VMDKs, LUNs, or shares display in the Unitrends Backup UI as <code>/dev/sdx/</code>. The x indicates alphabetically the order in which the storage was added.</p> <p>For example, the initial disk is always <code>/dev/sda/</code>, the initial backup storage is <code>/dev/sdb/</code>, the next would be <code>/dev/sdc/</code>, and so forth.</p> <p>The following requirements apply to additional backup storage:</p> <ul style="list-style-type: none"> • Your backup storage devices must be at least 200GB to enable deduplication or to use the device as a backup copy target. • As you add more storage, be sure to add resources to the Unitrends Backup VM, such as CPU and memory. • You can expand backup storage only across new disks. To expand the existing backup storage, you must add a new virtual disk. Expanding an existing VMDK or growing a SAN volume is not supported.
Examples of expanding storage	<p>To add backup storage, Unitrends recommends expanding your initial backup storage to include the newly allocated space. Once storage is expanded in the Unitrends Backup UI, the appliance treats the original disk and added disks as one larger data volume.</p> <div data-bbox="354 1199 1458 1289" style="border: 1px solid #00a0e3; padding: 5px;"> <p>Note: Expanding storage is only supported for added disk storage (DAS or external storage attached to the hypervisor).</p> </div> <p>See the following examples:</p> <ul style="list-style-type: none"> • To expand DAS storage, use the hypervisor to add a new VMDK that uses the same datastore you selected for the initial backup storage. Then use the Unitrends Backup UI to expand existing storage to include the new disk. • To expand SAN or NAS storage that is exposed to the hypervisor, add a new share or LUN to the hypervisor, then use the hypervisor to add the share or LUN to the datastore that was used for the initial backup storage and create a VMDK using this datastore. Once the VMDK is created, use the Unitrends Backup UI to expand existing storage to include the new disk. • For details on expanding storage, see Procedures for adding attached disk backup storage in the Administrator Guide for Recovery Series, Recovery MAX, ION/ION+, and Unitrends Backup.

Unitrends Backup Storage Component	Recommendations
Examples of adding storage	<p>If expanding storage is not an option, or you need to create a distinct storage area, you can add a separate storage device to your appliance. The storage you add is treated as a separate storage area. This approach allows you to set up backups to write to a specified device.</p> <p>See the following examples:</p> <ul style="list-style-type: none">• DAS or external storage attached to the hypervisor - Use the hypervisor to create a datastore and VMDK from the storage you added. Then go to the Add Backup Storage dialog in the UI, click Create a separate storage area for an alternate backup device and select the type Added Disk. Select the disk to add.• External storage attached to the Unitrends Backup VM - Note: If you used an external NAS or SAN storage array attached directly to the Unitrends Backup VM for the initial backup storage, use the same storage array for all additional backup storage.<ul style="list-style-type: none">- Allocate additional space on the NAS and expose it to the Unitrends Backup VM. Then go to the Add Backup Storage dialog in the UI, click Create a separate storage area for an alternate backup device and select the type CIFS or NFS. Enter the IP address of the NAS and other required information.- Allocate additional space on the SAN and expose it to the Unitrends Backup VM. Then go to the Add Backup Storage dialog in the UI, click Create a separate storage area for an alternate backup device and select the type iSCSI. Enter the IP address of the SAN and other required information.• For details on adding storage, see Procedures for adding attached disk backup storage and Procedures for adding external storage in the Administrator Guide for Recovery Series, Recovery MAX, ION/ION+, and Unitrends Backup.

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Chapter 4: Deploying a Unitrends Backup Appliance

Deployment consists of creating the Unitrends Backup VM, attaching backup storage, and configuring appliance settings.

To create the Unitrends Backup VM, you will deploy an OVA file. During deployment, you define network and storage settings for the appliance.

The following steps summarize the procedures used to deploy your Unitrends Backup appliance. Detailed instructions for each procedure follow:

Note: Required steps vary depending on the type of storage you are using. [Step 3:](#) and [Step 5:](#) may not be required.

- ["Step 1: Set up storage on the hypervisor"](#)
- ["Step 2: Deploy the Unitrends Backup VM" on page 18](#)
- ["Step 3: Attach backup storage" on page 29](#)
- ["Step 4: Set up the appliance using the Quick Setup Wizard" on page 38](#)
- ["Step 5: Add the initial backup storage device if using external storage directly attached to the Unitrends Backup VM" on page 42](#)
- ["Step 6: \(Optional\) Modify deduplication settings" on page 45](#)
- ["Step 7: Register and license the Unitrends Backup appliance" on page 46](#)
- ["Step 8: Start protecting your environment" on page 50](#)

Step 1: Set up storage on the hypervisor

Verify that the hypervisor has enough storage available:

- 100GB for the Unitrends Backup VM's initial disk.
- At least 200GB for the initial backup storage.

If necessary, add storage. Storage options are described in the following table. For more on storage, see ["Determining your Storage Strategy" on page 11](#).

Storage option	Requirements
Use added disk (DAS or external) storage for both the initial disk and initial backup storage (recommended)	<p>Verify that the hypervisor has enough storage to create the initial disk and the initial backup storage.</p> <p>To use external storage (rather than DAS), use the hypervisor to add the SAN or NAS and to create the associated datastores.</p>
Use added disk external storage for the VM's initial disk, and use external storage directly attached to the Unitrends Backup VM for the initial backup storage (not recommended)	<p>To use external storage that is directly attached to the Unitrends Backup VM for the initial backup storage, Unitrends recommends that you use external storage on the same array for the VM's initial disk.</p> <p>Use the hypervisor to add the SAN or NAS and to create the associated datastore to use for the Unitrends Backup VM's initial disk. You will select this datastore while deploying the Unitrends Backup VM to create the initial VMDK disk (in "Step 2: Deploy the Unitrends Backup VM").</p>
Deploy using storage containing backups from another Unitrends Backup appliance	<p>Verify that the hypervisor has enough storage available to create the initial disk. You will add the storage that contains backups after you deploy the Unitrends Backup VM (as described in "Step 3: Attach backup storage").</p>

Step 2: Deploy the Unitrends Backup VM

Deployment instructions remain the same whether you are setting up Unitrends Backup with new storage or with storage that contains backups from another Unitrends Backup appliance.

To deploy the Unitrends Backup VM

- 1 Download the OVA file from the Unitrends Downloads page:
 - Go to <https://helpdesk.kaseya.com/hc/en-gb/articles/4407526882193-Unitrends-Downloads>.
 - Scroll down to Unitrends Backup Virtual Appliance Deployments.
 - Click the **.OVA** link in the VMware vSphere row.

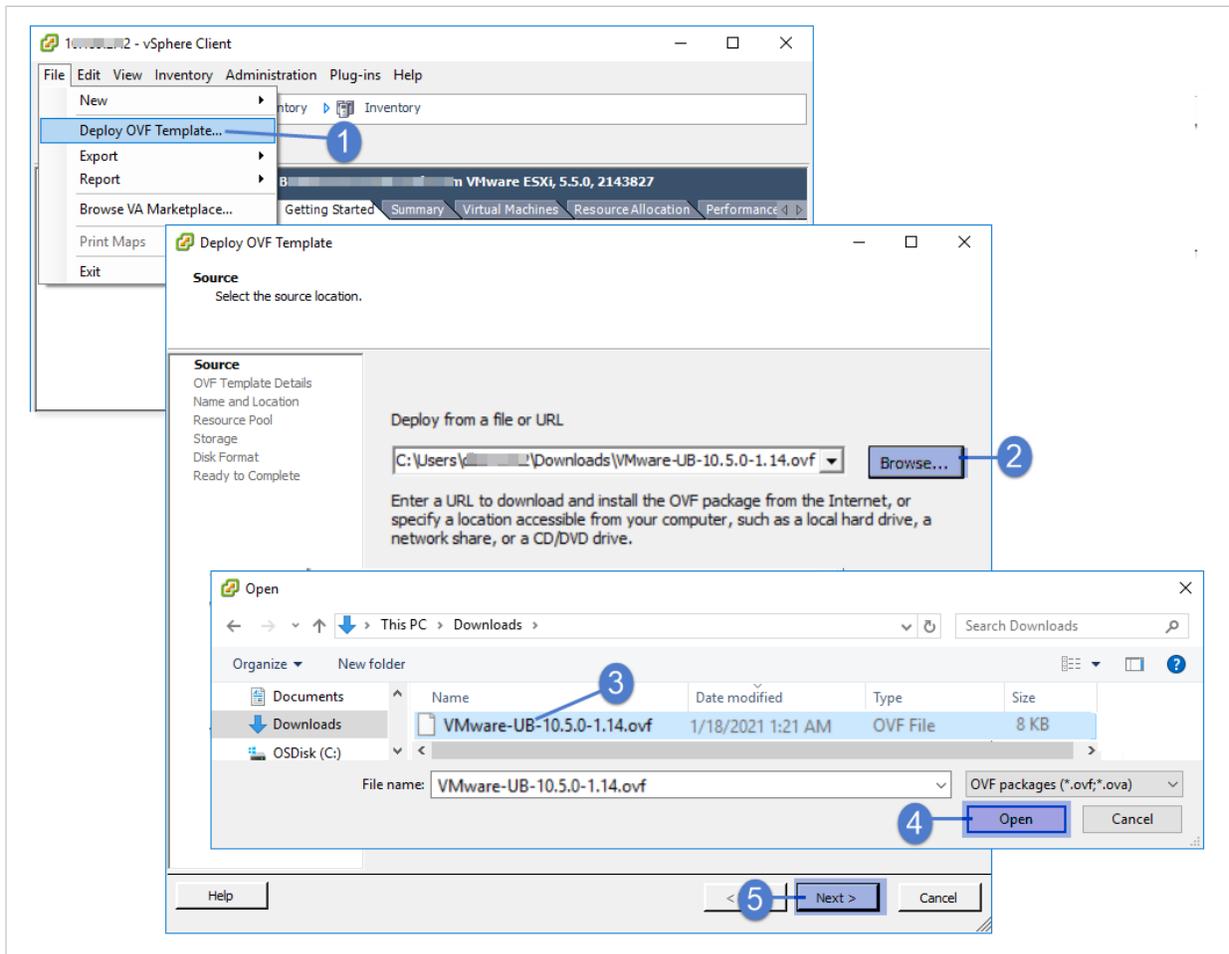
The screenshot shows a web browser window with the URL <https://helpdesk.kaseya.com/hc/en-gb/articles/4407526882193-Unitrends-Downloads>. The article title is "Unitrends Backup Virtual Appliance Deployments". Below the title, it states: "For existing customers looking to redeploy an instance of Unitrends Backup, the following installer downloads are available (right-click and 'Save As...'):". A table lists the available download formats for various environments. A blue callout box with the text "Click here" points to the ".OVA" format in the first row of the table.

Environment	Applies To	Format
VMware vSphere	VMware 5.x - 8.0	.OVA
Microsoft Hyper-V	Windows Server 2012-2022 (Wizard Deployment)	.EXE
	Windows Server 2008 R2-2022	.VHD
Citrix XenServer	XenServer 6.5-7.x	.XVA
Nutanix AHV	Nutanix AHV 5.1-6.5	.VMDK
Amazon AWS	Deployments are available within the Amazon cloud	
Microsoft Azure	Microsoft Azure	.VHD

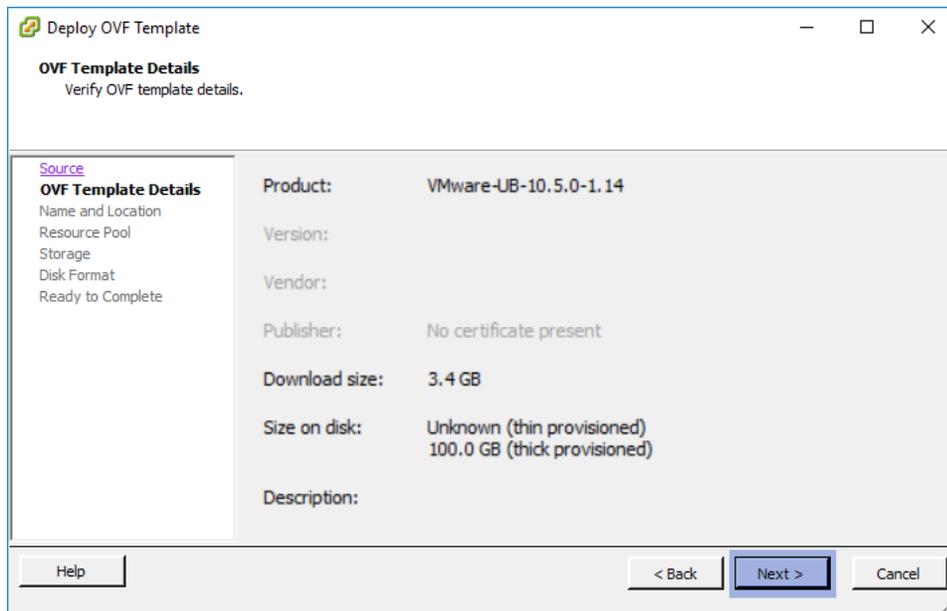
Ready to register and activate your Unitrends Backup? Follow the knowledge article [Registering a Unitrends Backup - Activating your Product - Licensing \(Internet or Air Gap\)](#) to apply for your permanent license.

Note: Be sure to activate your Unitrends Backup before the 30-day trial expires to ensure there is no gap in your protection.

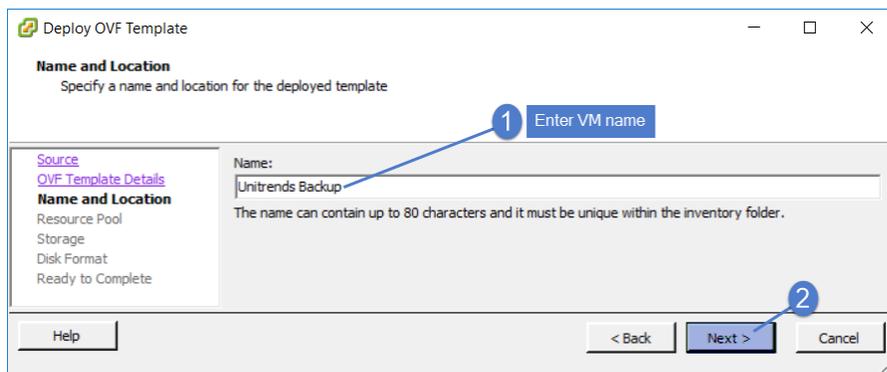
- 2 From the machine on which you saved the Unitrends Backup OVA file, access your ESXi server using vSphere Client.
- 3 Select **File > Deploy OVF template**.
- 4 Browse to the extraction location, select **VMware-UB-version.ova**, click **Open**, then click **Next**.



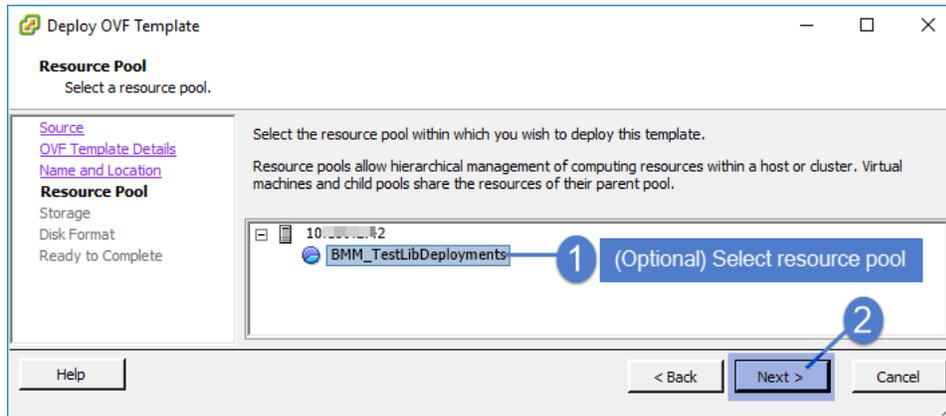
- 5 Verify OVA details and click **Next**.



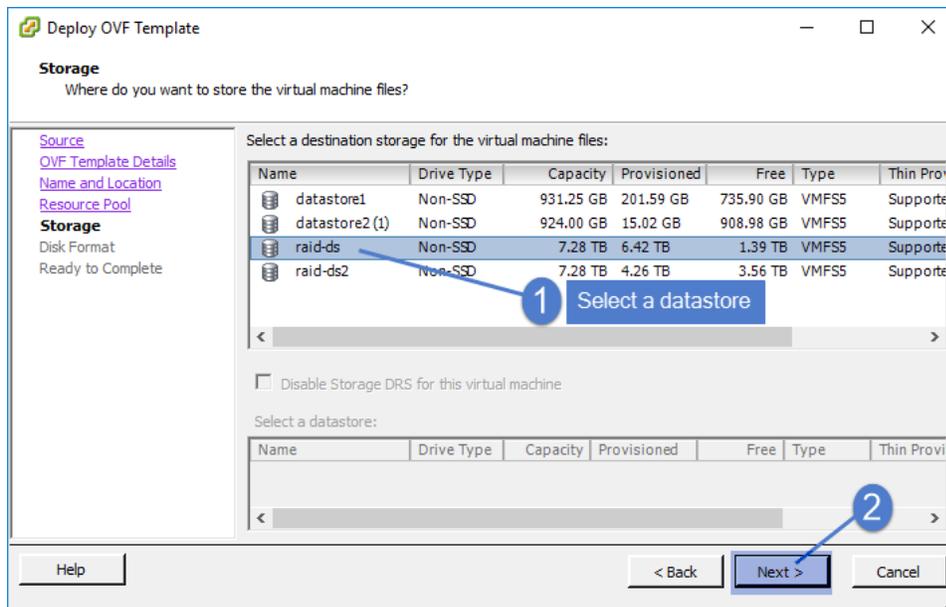
- 6 Enter a display name for the Unitrends Backup VM. The name can contain only alphanumeric characters, dashes, and underscores. This is the name that will display for the VM in your hypervisor. Click **Next**.



- 7 (Optional) If your environment has resource pools, you can opt to choose one for the Unitrends Backup VM. If your environment does not have resource pools, you do not see this step. Click **Next** to continue.

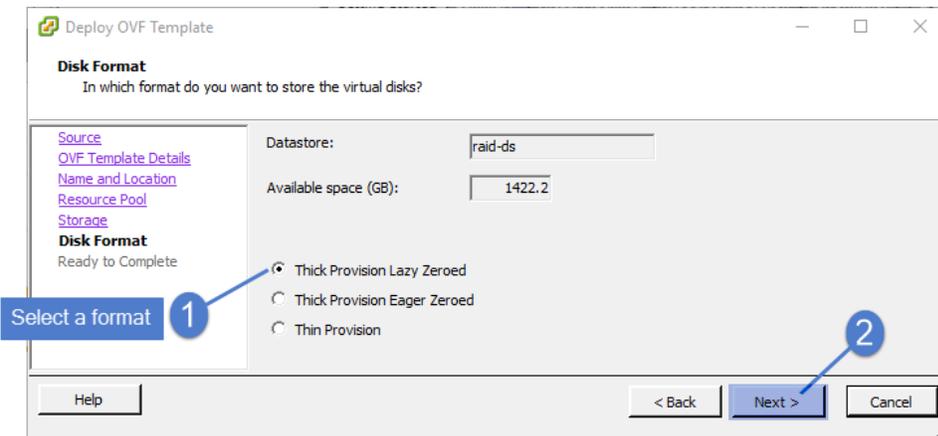


- 8 Select the datastore that will be used to create the Unitrends Backup VM. Click **Next**.

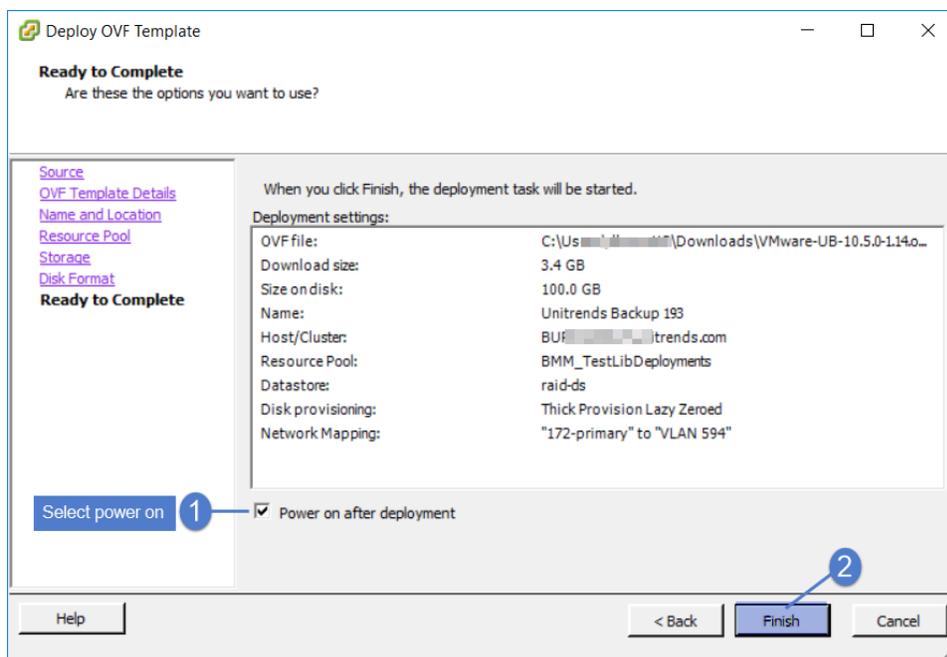


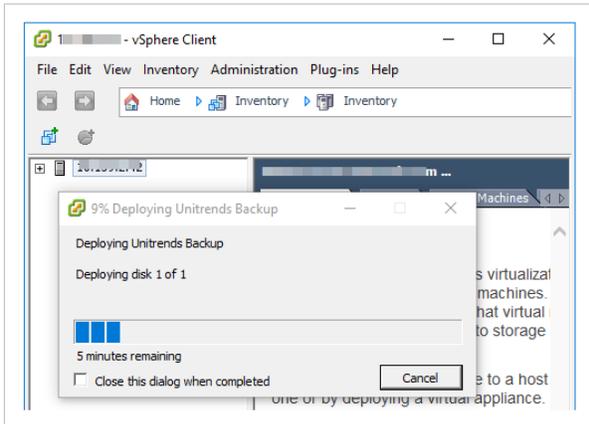
- 9 Select the disk format. Click **Next**.

For best performance, use a thick provisioned format.

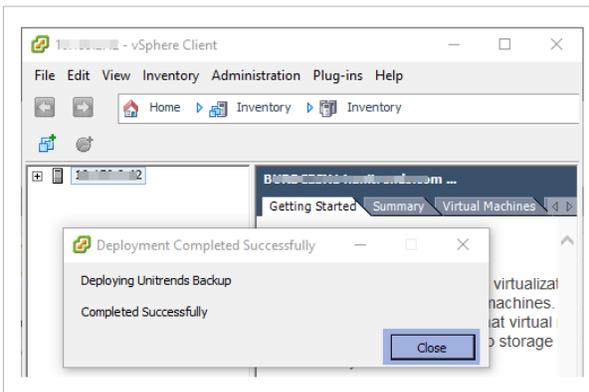


- 10 If the server has multiple virtual networks, select one from the list and click **Next**. If the server has only one virtual network, you are not prompted for a selection.
- 11 On the Ready to Complete screen, select **Power on after deployment**.
- 12 Click **Finish** to deploy.





13 When deployment is complete, close the confirmation message.



14 Do one of the following:

- If the VM's virtual network has DHCP available, proceed to ["Attach backup storage" on page 29](#).
- If DHCP is not available or if you prefer to assign a static IP address, proceed to ["To set up the appliance with a static IP address"](#).

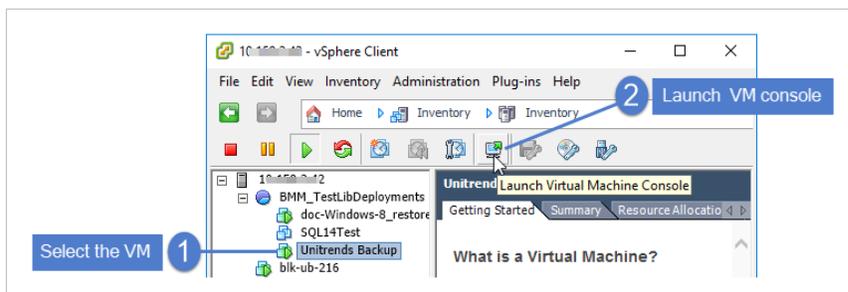
Note: If you will be using the appliance as a hot backup copy target, you must assign a static IP address. Use the procedure ["To set up the appliance with a static IP address"](#).

To set up the appliance with a static IP address

Note: If you are deploying using storage from another Unitrends Backup appliance that contains backup data, you can enter the same network settings as the original appliance or use different network settings.

1 From vSphere Client, access the Unitrends Backup VM's console interface by clicking the **Launch Virtual Machine Console** icon.

Note: The Unitrends Backup VM must be turned on. If necessary, right-click the VM and select **Start**.

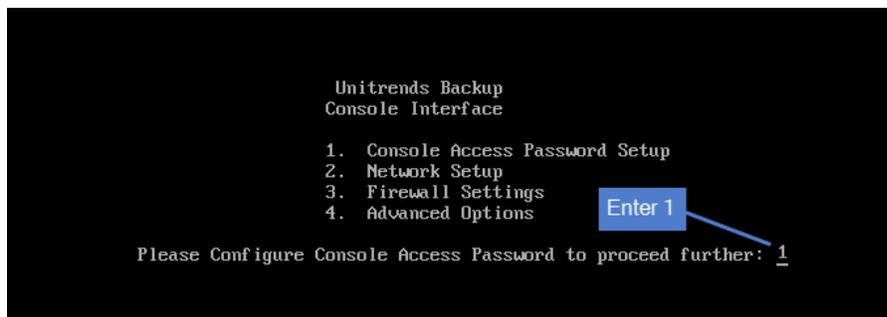


The remaining steps are run from the Unitrends Backup Console Interface. On these screens, you select a menu option by entering a number in the **Please enter choice** field.

Notes:

- As you complete each step in the Unitrends Backup Console Interface, you are presented with the next configuration screen.
- You can press **Enter** to accept the default or current setting.

2 On the Console Interface screen, enter **1** in the **Please Configure Console Access Password...** field.



3 To change the direct console password, enter a new password, then enter the password again to confirm.

Notes:

- This is the root operating system password that accesses the console. This password does not access the UI. (You will change the UI password in "[Step 4: Set up the appliance using the Quick Setup Wizard](#)" on page 38.)
- All appliances are deployed with these default operating systems credentials: user *root*, password *unitrends1*. For appliance security, you must change this password.

```

Password should be at least 8 characters
Password should not contain the forbidden word Unitrend (case insensitive)

1 Enter new password
Changing password for user root.
New password:
Retype new password: 2 Enter new password again to confirm
passwd: all authentication tokens updated successfully.

```

- 4 On the Console Interface screen, enter 2.

```

Unitrends Backup
Console Interface

1. Console Access Password Setup
2. Network Setup
3. Firewall Settings
4. Advanced Options

Please enter choice: 2 Enter 2

Manage System using the web-based interface at one of the following:
eth0 - http://10.10.10.1

```

- 5 On the Initial System Setup Menu screen, enter 1 in the Please enter choice field.

```

Unitrends Backup
Initial System Setup Menu

1. Configure IP, Netmask and Gateway
2. Configure DNS
3. Configure IPMI LAN
4. Configure DHCP
5. Network Test
6. Back

Please enter choice: 1 Enter 1

```

- 6 Enter a number in the Select a network adapter field. For example, enter 0 to select eth0.

```

0. eth0
Select a network adapter: 0
Enter a number to select an adapter. If your appliance has multiple adapters, each are listed. In this example, the appliance has one adapter (eth0).

```

- 7 Enter Y in the Edit network configuration field. Then enter an IP address, Netmask, and Gateway. Review the settings and enter Y to save.

```
Network Adapter: eth0
Current IP address: 10.10.10.1
Current Netmask: "255.255.255.0"
Current Gateway: n/a

Edit network configuration? [n/Y]: Y
```

Enter Y

```
Current IP address: 10.10.10.1
Enter new System IP Address: 192.168.171.20
```

Enter an IP address for the Unitrends appliance

```
Current Netmask: "255.255.255.0"
Enter new System Netmask:
```

Enter new netmask or press Enter to accept the default

```
Current Gateway: n/a
Enter new Network Gateway: 192.168.171.1
```

Enter gateway IP address

```
Adapter: eth0
Current IP address: 10.10.10.1
Current Netmask: "255.255.255.0"
Current Gateway: n/a

New IP address: 192.168.171.20
New Netmask: "255.255.255.0"
New Gateway: 192.168.171.1

Commit network configuration changes? [n/Y]: Y
```

Enter Y to save settings (or N to modify settings)

- 8 To configure DNS settings, enter 2, then enter Y to edit. Enter the **Primary DNS IP address**, a **Secondary DNS IP** (optional), and a **DNS Domain**. Review the settings and enter Y to save.

```
Unitrends Backup
Initial System Setup Menu

1. Configure IP, Netmask and Gateway
2. Configure DNS
3. Configure IPMI LAN
4. Configure DHCP
5. Network Test
6. Back

Please enter choice: 2
```

Enter 2

```
Current Primary DNS: n/a
Current Secondary DNS: n/a
Current DNS Domain: vmware-ub
Edit DNS configuration? [n/Y]: Y — Enter Y
```

```
Current Primary DNS: n/a
Enter new Primary DNS: 192.168.1.108 — Enter IP of primary DNS server
```

```
Current Secondary DNS: n/a
Enter new Secondary DNS: 192.168.1.108 (Optional) Enter IP of
(Leave blank if no secondary DNS desired) secondary DNS server
```

```
Current DNS Domain: vmware-ub
Enter new DNS Search Domain: unitrends.com — Enter domain
```

```
Current Primary DNS: n/a
Current Secondary DNS: n/a
Current DNS Domain: vmware-ub

New Primary DNS: 192.168.1.108
New Secondary DNS: 192.168.1.108
New DNS Domain: unitrends.com

Commit DNS configuration changes? [n/Y]: Y — Enter Y to save settings
(or N to modify settings)
```

- 9 To exit network setup, enter 6.

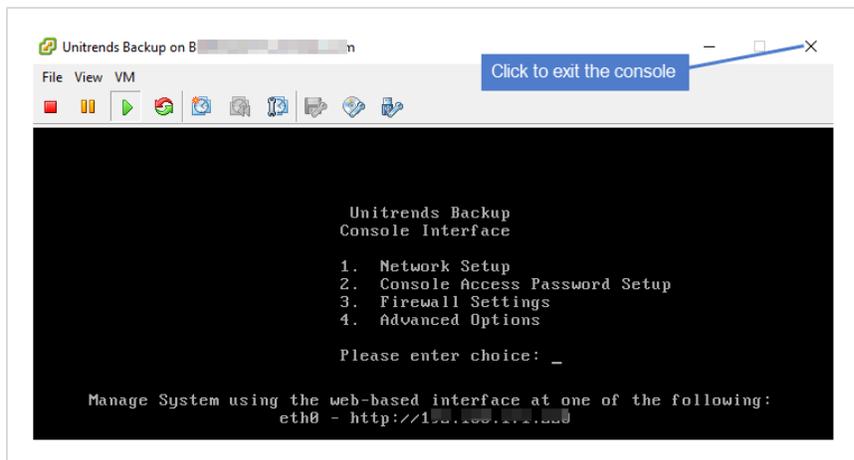
```

Unitrends Backup
Initial System Setup Menu

1. Configure IP, Netmask and Gateway
2. Configure DNS
3. Configure IPMI LAN
4. Configure DHCP
5. Network Test
6. Back

Please enter choice: 6 — Enter 6
```

- 10 Exit the VM console.



11 Proceed to "Step 3: Attach backup storage".

Step 3: Attach backup storage

In this step you will attach the initial backup storage. Note that once you finish deploying and setting up your Unitrends Backup appliance, you can add disks, LUNs, or shares at any time to increase backup storage capacity.

Instructions for attaching storage vary depending on whether you are setting up the Unitrends Backup with new storage or with storage that contains backups from another Unitrends Backup appliance. See one of the following topics:

- "Attaching new backup storage"
- "Attaching storage that contains backups from another appliance " on page 30

Attaching new backup storage

For new backup storage, you can use added disk storage (DAS or external storage attached to the host) or external storage that is attached directly to the Unitrends Backup VM.

See the following topics for details:

- "Added disk storage attached to the hypervisor"
- "External storage attached to the Unitrends Backup VM"

Added disk storage attached to the hypervisor

Add a VMDK to the Unitrends Backup VM by using the ESXi host. The appliance automatically uses the first VMDK disk added to the Unitrends Backup VM as the initial backup storage. Once you have added the VMDK, proceed to "[Step 4: Set up the appliance using the Quick Setup Wizard](#)" on page 38.

For instructions on creating and adding a disk, see one of the following VMware documents:

- [vSphere 5.5: Create a Virtual Disk in vSphere Client 5.5](#)

- [vSphere 6: Create a Virtual Disk in vSphere Client 6](#)
- [vSphere 6.5: Add an Existing Hard Disk to a Virtual Machine](#)
- [vSphere 6.7, 7.0, or 8.0: Customize the Virtual Machine Settings in the VMware Host Client](#)

External storage attached to the Unitrends Backup VM

To use external NAS or SAN storage attached directly to the Unitrends Backup VM, add the share or LUN and expose it to the Unitrends Backup VM. You will select the share or LUN to use as the initial backup storage after you complete the steps in the Quick Setup Wizard. Once you have added storage and exposed it to the Unitrends Backup VM, proceed to "[Step 4: Set up the appliance using the Quick Setup Wizard](#)" on page 38.

Attaching storage that contains backups from another appliance

Use one of the procedures in this section to attach storage that contains backups from another Unitrends Backup appliance.

IMPORTANT!

- You must configure all storage that contains backup data from another Unitrends Backup appliance before you do "[Step 4: Set up the appliance using the Quick Setup Wizard](#)" on page 38. If you add storage after you set up the appliance, any data on the storage is deleted.
- Attaching backup storage that contains backups from another Unitrends Backup appliance is supported only if the original appliance is running the same operating system as the newly deployed appliance. Appliances deployed with version 10.3.6 or higher run CentOS 7. Appliances deployed with older versions run CentOS 6. To check the appliance Recovery OS version, click on ? > **About**:

Instructions for attaching storage that contains Unitrends backups vary by whether the storage was attached directly to the original VM or attached through the hypervisor.

See the following topics for details:

- "Backup data on disks that were attached to the original Unitrends Backup VM through the hypervisor "
- "Backup data on external storage that was connected directly to the Unitrends Backup VM" on page 38

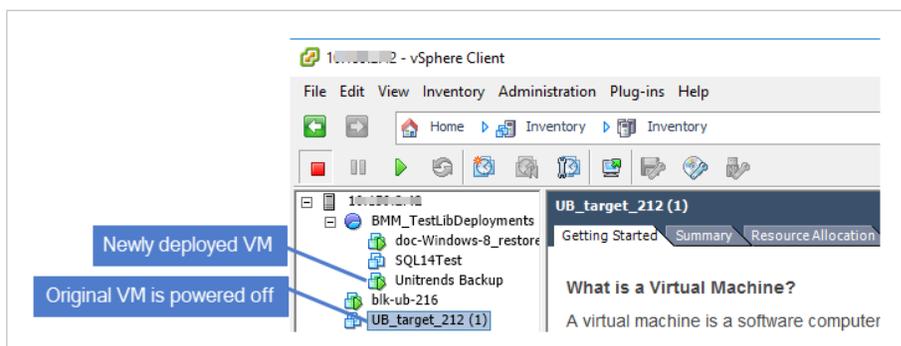
Backup data on disks that were attached to the original Unitrends Backup VM through the hypervisor

If your backup data resides on VMDKs, you must attach the VMDKs to the Unitrends Backup VM by using the ESXi host before setting up the appliance.

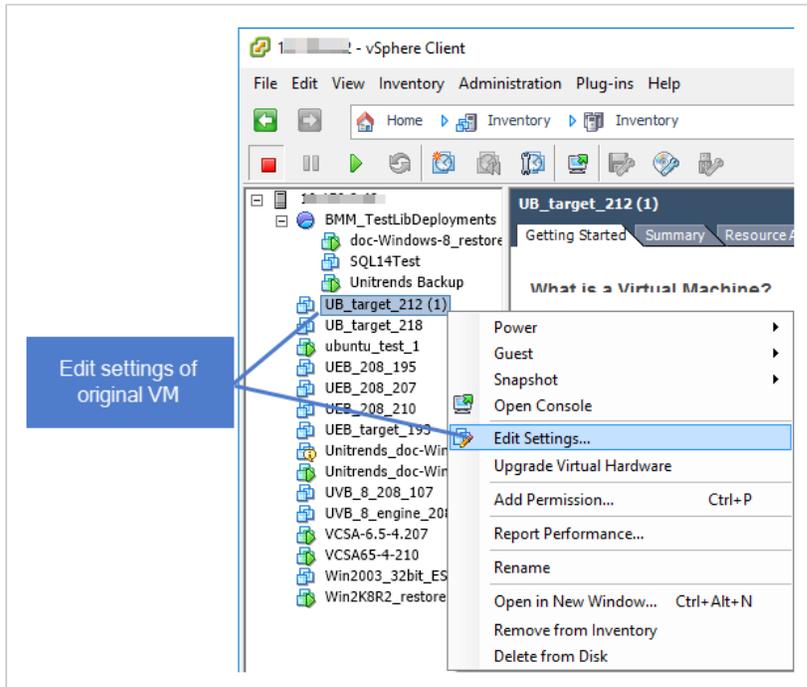
IMPORTANT! Be sure to attach the VMDK that was used as the initial backup storage first (before adding any other VMDKs). Adding the wrong VMDK first yields undesirable results. The appliance automatically uses the first VMDK you attach as the initial backup storage. The appliance then recognizes all subsequent attached disks and can access all existing backup data.

To add a VMDK that contains backups from another Unitrends Backup appliance:

- 1 Access your ESXi server using vSphere Client.
- 2 Power off the original Unitrends Backup VM.



- 3 Identify the disk(s) that you want to add to the newly deployed VM by doing these steps:
 - Right-click the original VM and select **Edit Settings**.

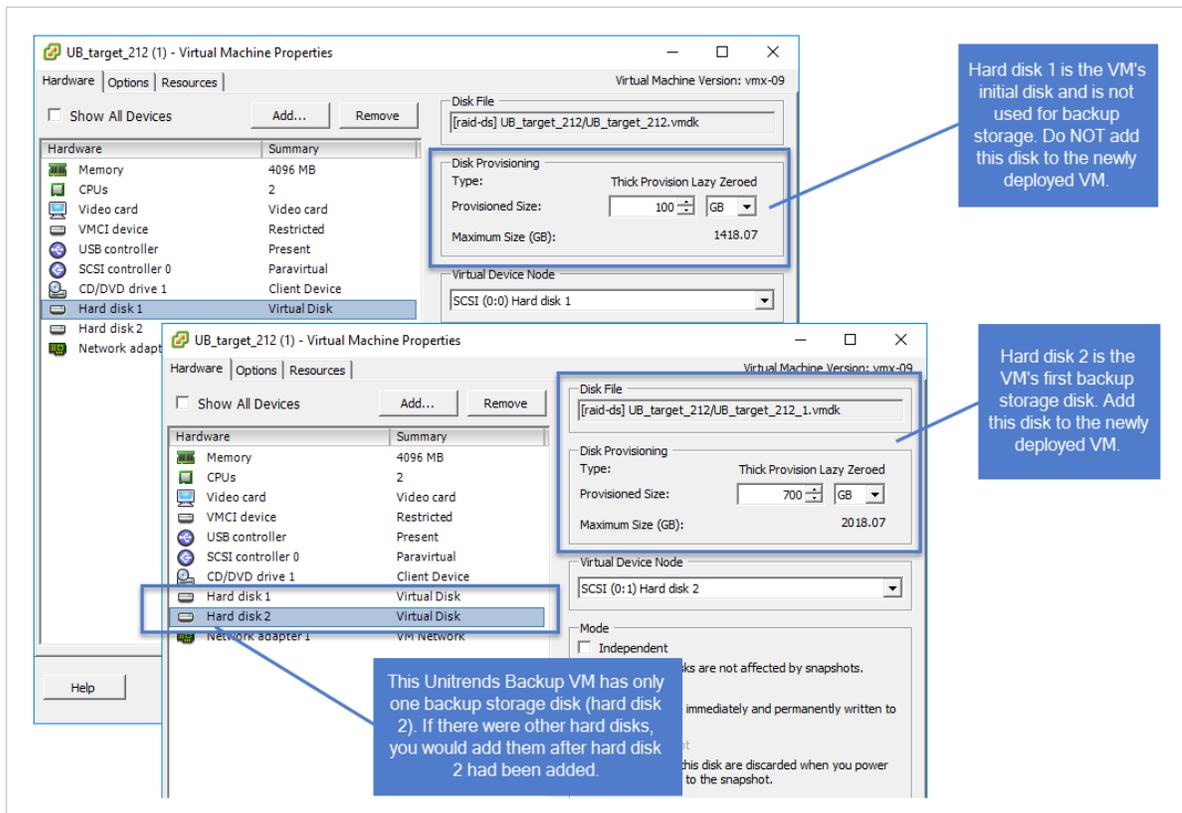


- Select each hard disk to view details. Note the disk file details of the one(s) you will add to the newly deployed VM. (You will need the datastore and disk name to locate the disk in vSphere Client).

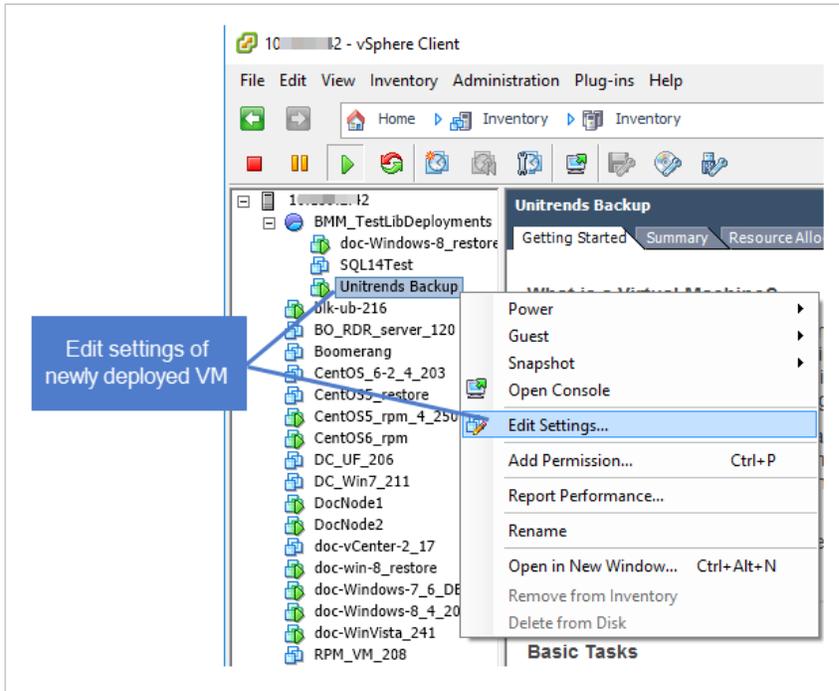
Notes:

- You must add all backup storage disks from the original VM.
- Do not add Hard Disk 1. This 100GB disk was created during VM deployment and is NOT used to store backups.
- You must add the first backup storage disk (typically Hard Disk 2) before you add any other backup storage disks.

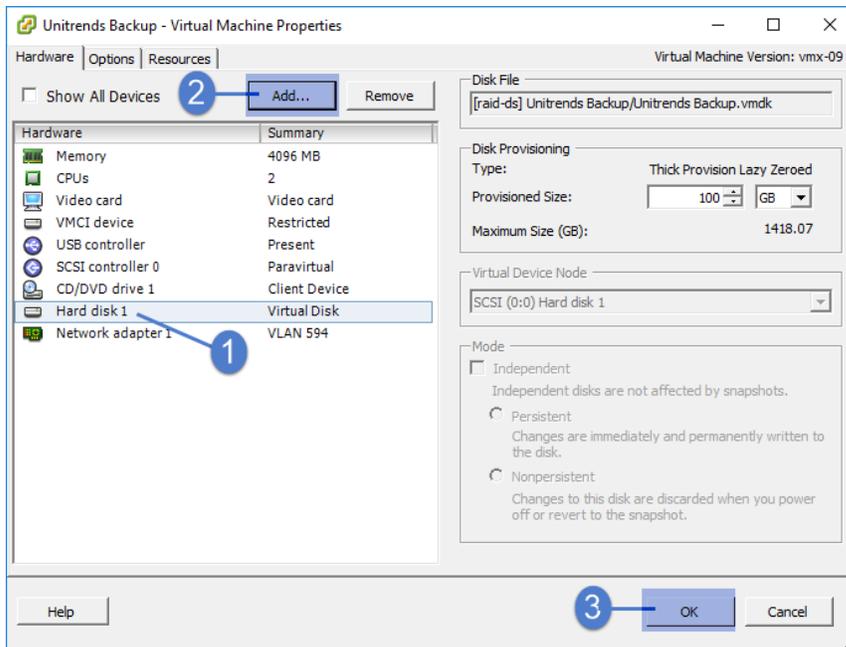
In our example, the VM has only one backup storage disk:



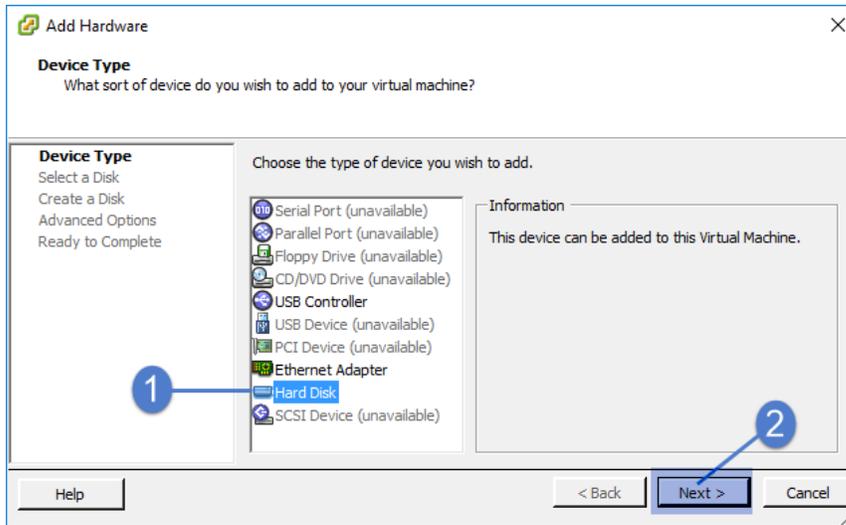
- 4 Add the disk(s) to the newly deployed VM by doing these steps:
 - Right-click the newly deployed VM and select **Edit Settings**.



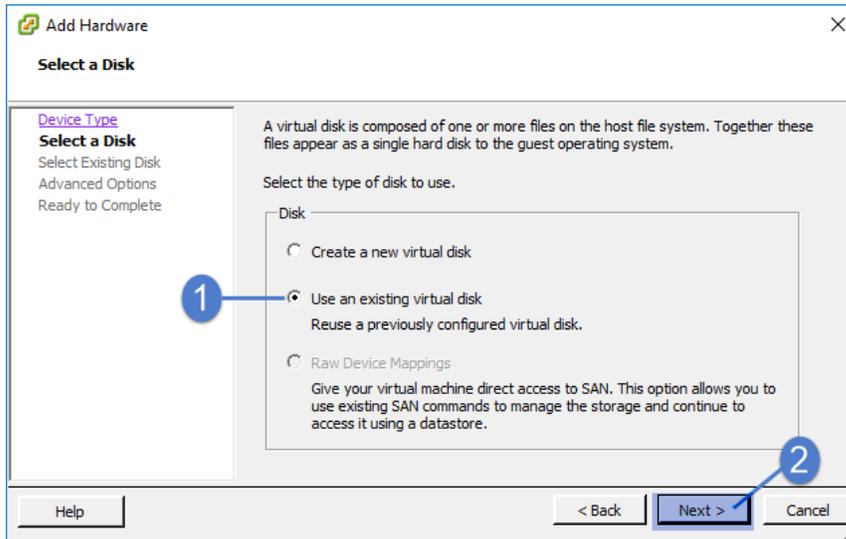
- Select **Hard disk 1**, click **Add**, then **OK**.



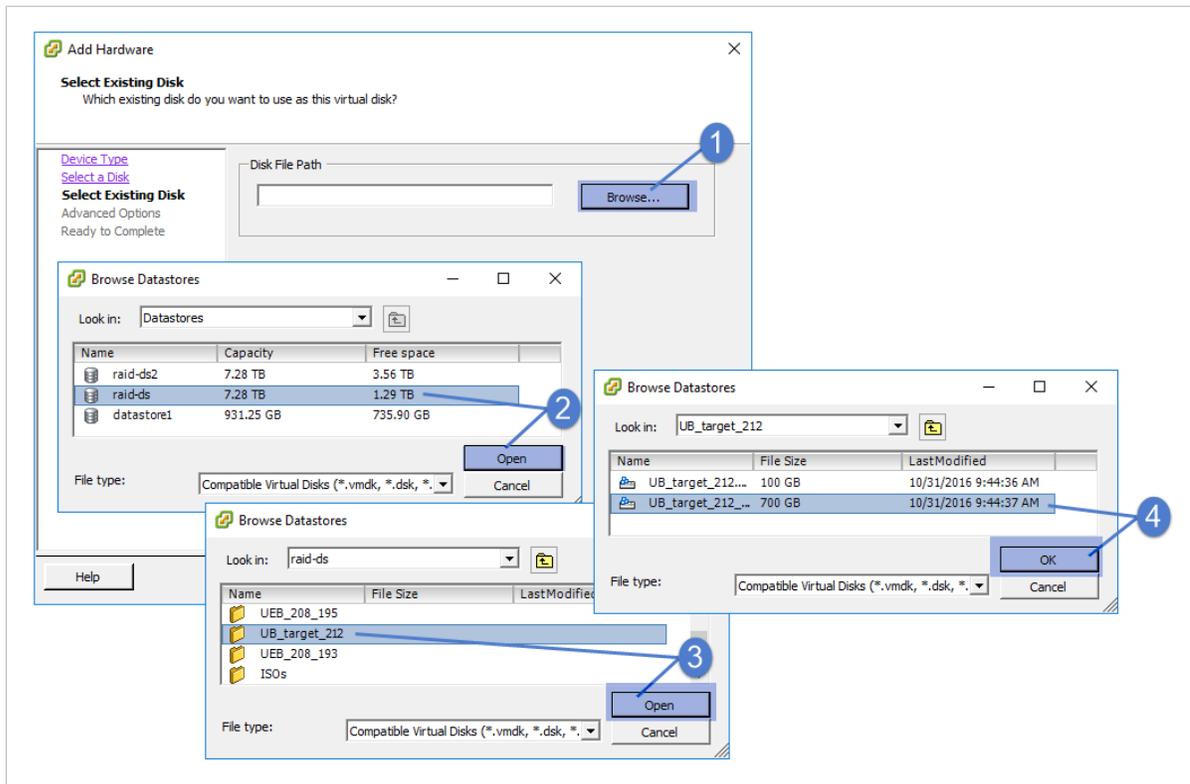
- Select **Hard Disk** and click **Next**.



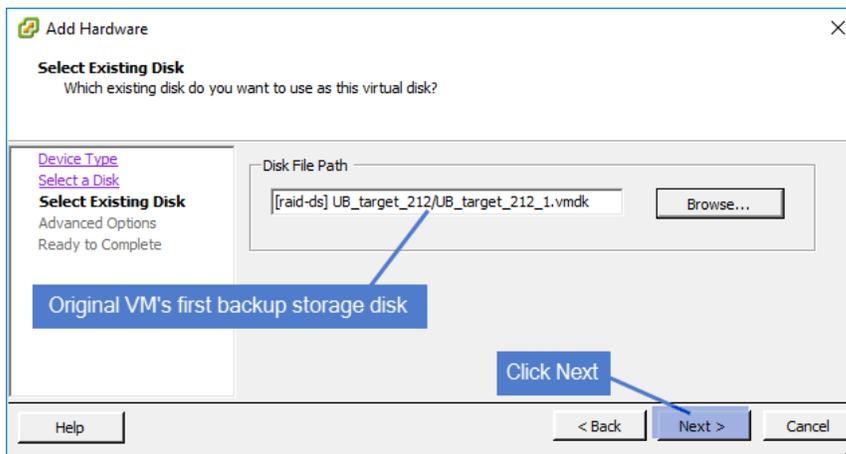
- Select **Use an existing virtual disk** and click **Next**.



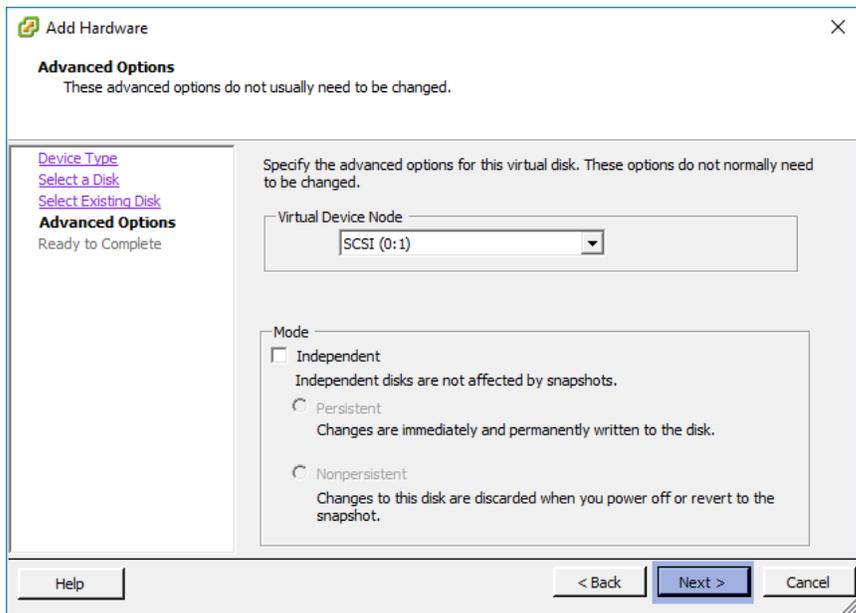
- Click **Browse**. Browse to the original VM's first backup storage disk and click **OK**.



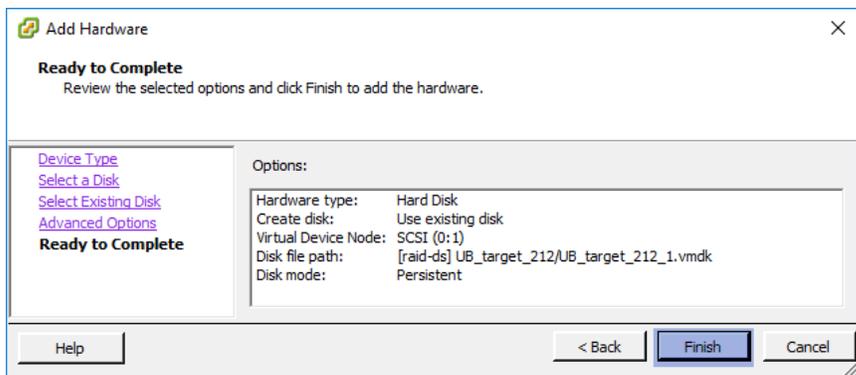
- Click **Next** to continue.



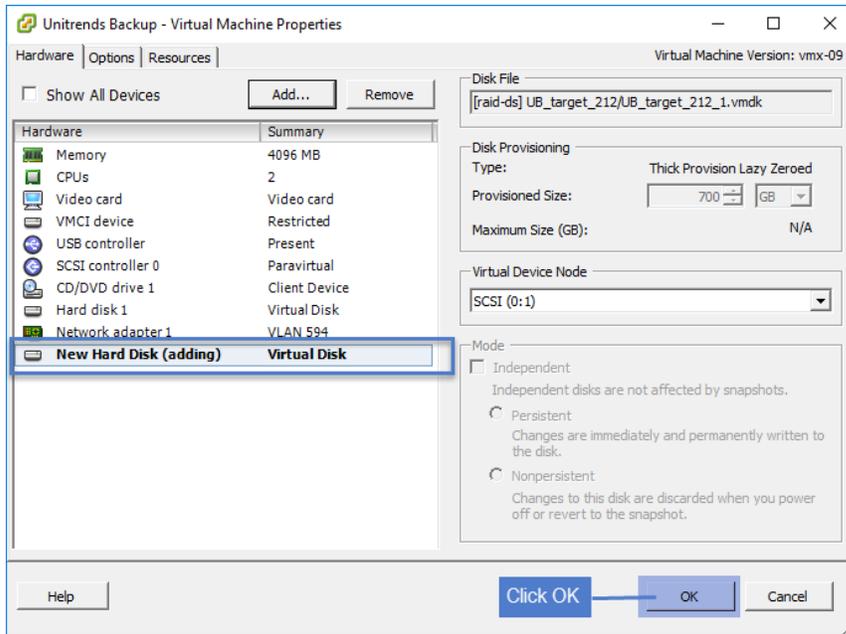
- Click **Next** to accept the default Advanced Options.



- Click **Finish**.



- Click **OK**.



- 5 (If needed) If the original VM has multiple backup storage disks, repeat [step 4](#) to add those disks.
- 6 After attaching all backup storage disks, proceed to "[Step 4: Set up the appliance using the Quick Setup Wizard](#)".

Backup data on external storage that was connected directly to the Unitrends Backup VM

If the backup data resides on NAS or SAN storage that is connected directly to the original Unitrends Backup VM:

- 1 Expose the share or LUN to the new Unitrends Backup VM.
- 2 Proceed to "[Step 4: Set up the appliance using the Quick Setup Wizard](#)".

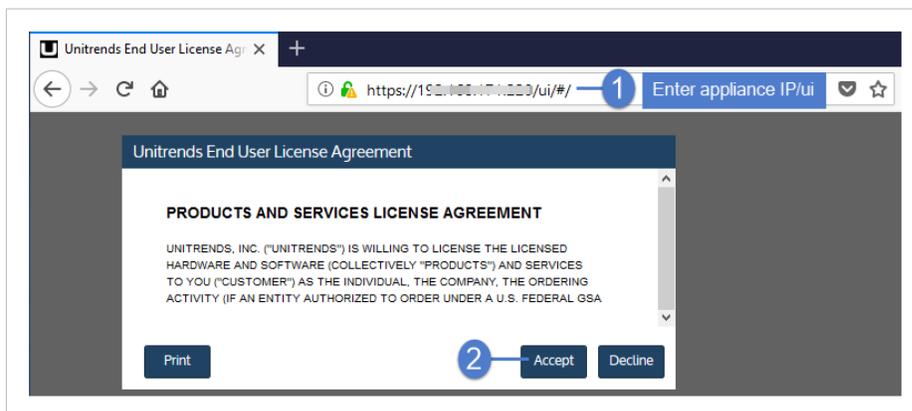
Step 4: Set up the appliance using the Quick Setup Wizard

To start the setup process, log in to the appliance UI from any machine on the same network by opening a browser and entering the appliance's IP address followed by `/ui/`. The Quick Setup Wizard launches when you access the UI for the first time.

To set up the appliance

Use this procedure to set up the appliance:

- 1 Open a browser and connect to your appliance by entering: `https://<applianceIP>/ui`. For example: `https://10.10.10.1/ui`.
- 2 Click **Accept** to accept the license agreement.



3 Set the appliance date and time by doing one of the following, then click **Next**:

- Select a **Timezone**. If needed, modify the appliance **Date** and **Time**.

OR

- Check the **Use an NTP Server** box to sync to an NTP server. (Optional) Enter your preferred NTP server address.

4 Enter a **Host Name**, a **Domain**, and a new **UI Password** for the appliance. If needed, enter a new **OS Password**. Confirm the passwords by entering them again in the fields to the right. Click **Next**.

Notes:

- The hostname can contain only alphanumeric characters, dashes, and underscores.

- The appliance has a UI root user and an OS root user. These are separate accounts. Changing the password of one root user account does NOT change the password of the other root user account. The UI root user is used to log in to the appliance UI. The OS root user is used to log in to the appliance console or for command line access.
- If you have already set the OS password, these fields are disabled in the Quick Setup Wizard.
- Passwords cannot contain the word *Unitrend* (case insensitive).
- The OS password must contain 8 or more characters.
- All appliances are deployed with these default UI and OS credentials: user *root*, password *unitrends1*. For appliance security, you must change these passwords in the Quick Setup Wizard. For increased security, ensure that the OS password you enter is different than the UI user password.
- After you finish the deployment procedures in this guide, you can set up additional UI users for the appliance at any time. For details, see *Users and roles* in the [Administrator Guide for Recovery Series, Recovery MAX, ION/ION+, and Unitrends Backup, Appliance settings](#) topic.

UNITRENDS

Date & Time | Host Name & Password | Email

1 Enter hostname, domain (optional) and appliance UI and OS passwords

Host Name: vmware-ub ?

Domain: unitrends.com ?

UI Password: ?

OS Password: ?

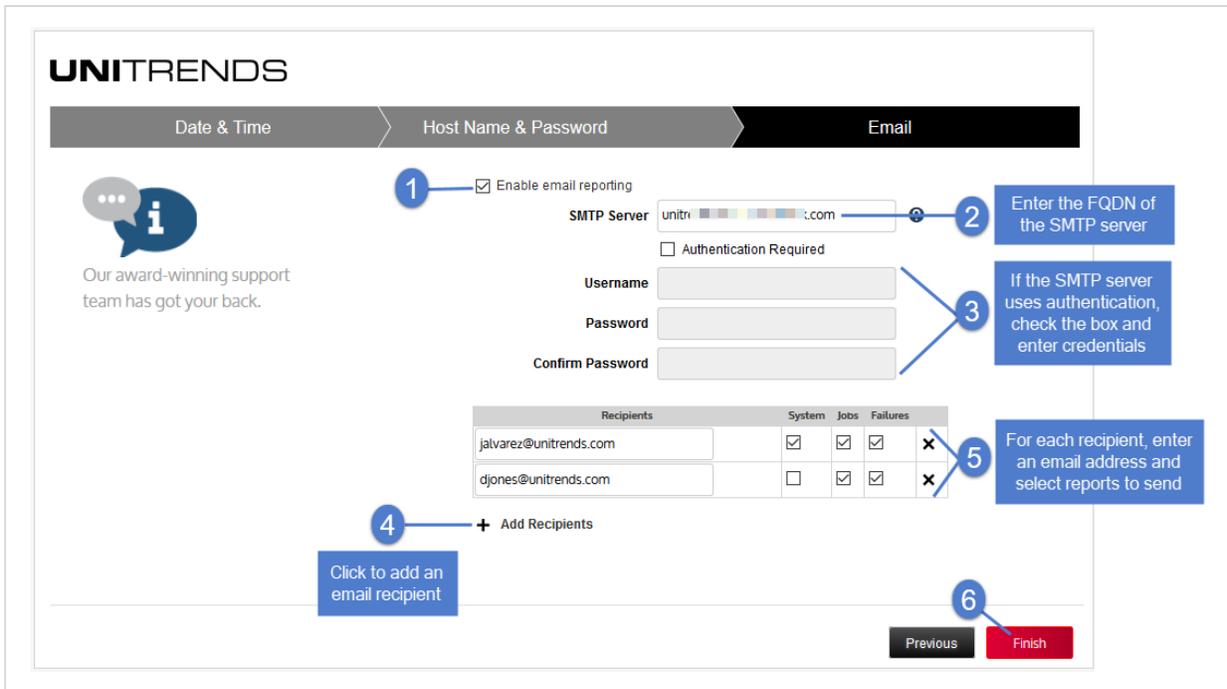
2 Confirm UI password

3 Confirm OS password

4

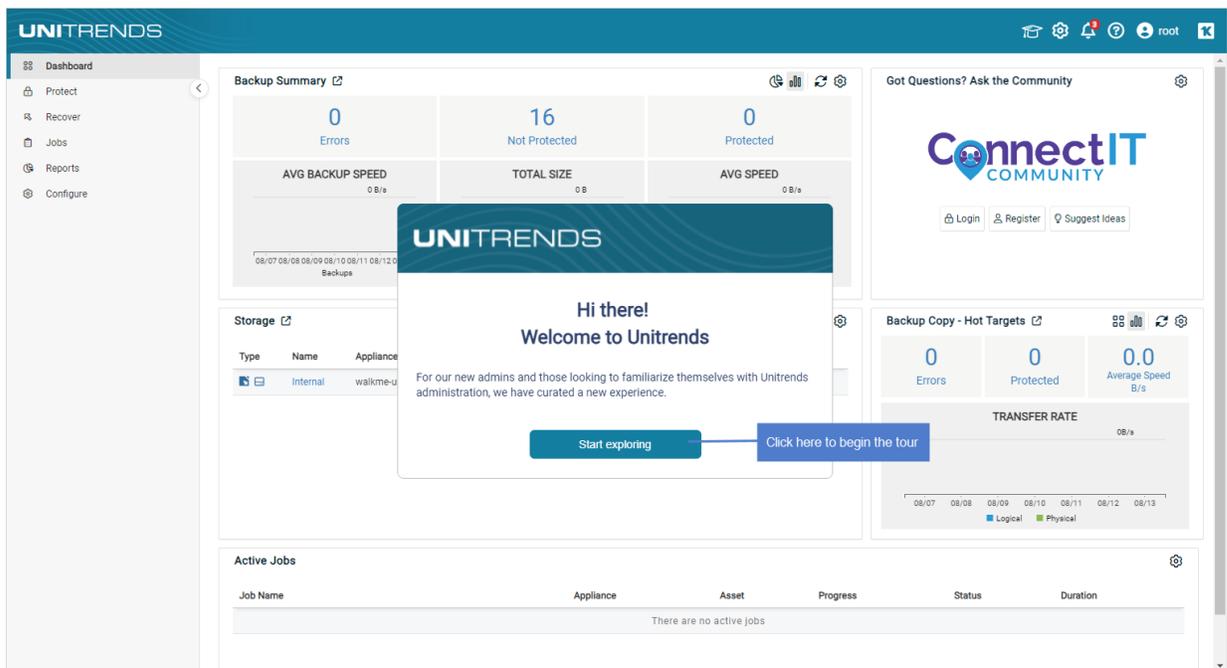
Previous Next

- 5 (Optional) To enable email from the appliance, check **Enable email reporting** and enter the following:
 - The fully qualified domain name of the **SMTP server**.
 - (If needed) If the SMTP server requires authentication, select **Authentication required** and enter a **Username** and **Password**.
 - Click **+ Add Recipients** to add a an email recipient. Enter an email address in the **Recipient** field and select one or more of the **System**, **Jobs**, and **Failures** options to specify which reports the appliance will send to the recipient. Repeat as needed to add more recipients.
- 6 Click **Finish**.



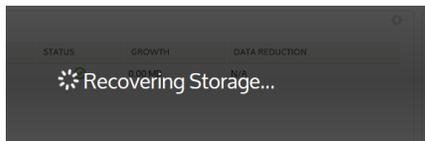
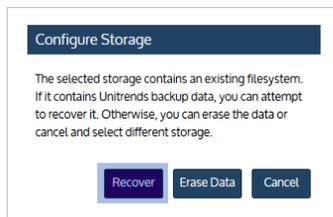
7 Do one of the following:

- If you deployed by using new storage for the initial backup storage, the Welcome to Unitrends dialog displays. Click **Start exploring** to view the interactive product tour. Then proceed to the next step in this procedure.



OR

- If you deployed by using storage that contains backups from another Unitrends Backup appliance, click **Recover** to add the backups to the appliance. Then proceed to the next step in this procedure.



8 Do one of the following:

- If you deployed using added VMDK disk storage, proceed to "[Step 6: \(Optional\) Modify deduplication settings](#)" on page 45.

OR

- If you deployed using external storage, proceed to "[Step 5: Add the initial backup storage device if using external storage directly attached to the Unitrends Backup VM](#)".

Step 5: Add the initial backup storage device if using external storage directly attached to the Unitrends Backup VM

Perform this step only if you are deploying using external SAN or NAS storage connected directly to the Unitrends Backup VM.

IMPORTANT! If you have deployed using added disk storage, do not do this step. The initial backup storage device has already been added to your appliance.

Once you have exposed the share or LUN to the Unitrends Backup VM, you must create the initial backup storage device and configure the appliance to use this storage. Run one of the following procedures from the Unitrends Backup UI to create this initial backup storage:

- "[To add the initial backup storage device if using an external LUN](#)"
- "[To add the initial backup storage device if using an external NFS share](#)" on page 44
- "[To add the initial backup storage device if using an external CIFS share](#)" on page 45

To add the initial backup storage device if using an external LUN

This procedure assumes you have allocated a LUN on the SAN and exposed it to the Unitrends Backup VM.

Notes: If your SAN is configured with CHAP authentication, you must configure CHAP on the appliance before adding the iSCSI storage device. To configure CHAP on the appliance:

- 1 Log in to the appliance UI.
- 2 On the **Configure > Appliances** page, select the appliance and click **Edit**.
- 3 In the Edit Appliance dialog, click **iSCSI CHAP**.
- 4 Verify that the **Use System CHAP Credentials** box is checked.
- 5 Enter credentials in the **Username**, **CHAP Password**, and **Confirm CHAP Password** fields, then click **Save**. One set of credentials is used to access all iSCSI targets that have been configured to use CHAP authentication.
 - By default, **Username** contains the appliance's iSCSI qualified name (IQN). It is required that the username and password on the initiator (backup appliance) match those defined on the targets. Modify the Username entry if necessary.
 - The password must be 12-16 characters in length.

To add the iSCSI device:

- 1 Log in to the appliance UI:
 - Open a browser and connect to your appliance by entering: **https://<applianceIP>/ui**
 - In the Username field, enter **root**.
 - In the Password field, enter the UI password you specified above in "[Step 4: Set up the appliance using the Quick Setup Wizard](#)".
- 2 On the **Configure > Appliances** page, select your appliance.
- 3 Click the **Storage** tab below.
- 4 Select **Add Storage > iSCSI**.
- 5 Enter a unique **Name** for the storage device. This name cannot contain spaces.
- 6 Enter the IP address of the SAN storage array in the **Host** field.
- 7 iSCSI communication uses the default port 3260. If the LUN uses a different port, enter it in the **Port** field.
- 8 Click **Scan for targets** to retrieve a list of targets on the remote storage array. Then choose one from the list.

Notes: If you do not see the LUN in the list, go to your SAN manager and check your LUN configuration by doing the following:

- Verify that you can see the Unitrends Backup appliance in your SAN manager.
- Verify that you have a LUN assigned to the Unitrends Backup appliance with the correct permissions.

- Check with your Storage Administrator for more information.

9 Click **Scan for LUNs** and select one from the list.

Note: If you receive an error indicating that CHAP authentication has failed, CHAP has been configured on the target and either CHAP has not been enabled on the Unitrends Backup appliance, or the Unitrends Backup CHAP credentials do not match those of the target.

10 Click **Save**.

11 Proceed to "[Step 6: \(Optional\) Modify deduplication settings](#)" on page 45.

To add the initial backup storage device if using an external NFS share

This procedure assumes you have allocated a share on the NAS and exposed it to the Unitrends Backup VM.

1 Log in to the appliance UI:

- Open a browser and connect to your appliance by entering: ***https://<applianceIP>/ui***
- In the Username field, enter **root**.
- In the Password field, enter the UI password you specified above in "[Step 4: Set up the appliance using the Quick Setup Wizard](#)".

2 On the **Configure > Appliances** page, select your appliance.

3 Click the **Storage** tab below.

4 Select **Add Storage > NFS**.

5 Enter the required NFS share information and click **Save**. Descriptions of each field are given here:

Field	Description
Name	Name of the storage. Cannot contain spaces.
Host	IP address or hostname of the NAS share.
Port	Contains the default NFS port. To use a custom port, enter that port number.
Share Name	Enter the full directory pathname of the NAS share. Do not use leading or ending slashes.
Username (optional)	If the share is configured for authentication, enter the domain username as user@domain.com.
Password (optional)	If the share is configured for authentication, enter the password.

6 Proceed to "[Step 6: \(Optional\) Modify deduplication settings](#)" on page 45.

To add the initial backup storage device if using an external CIFS share

This procedure assumes you have allocated a share on the NAS and exposed it to the Unitrends Backup VM.

- 1 Log in to the appliance UI:
 - Open a browser and connect to your appliance by entering: **https://<applianceIP>/ui**
 - In the Username field, enter **root**.
 - In the Password field, enter the UI password you specified above in "Step 4: Set up the appliance using the Quick Setup Wizard".
- 2 On the **Configure > Appliances** page, select your appliance.
- 3 Click the **Storage** tab below.
- 4 Select **Add Storage > CIFS**.
- 5 Enter the required CIFS share information and click **Save**. Descriptions of each field are given here:

Field	Description
Name	Name of the storage. Cannot contain spaces.
Host	IP address or hostname of the NAS share.
Port	Contains the default CIFS port. To use a custom port, enter that port number.
Share Name	Enter the full directory pathname of the NAS share. Do not use leading or ending slashes.
Username (optional)	If the share is configured for authentication, enter the domain username as user@domain.com.
Password (optional)	If the share is configured for authentication, enter the password.

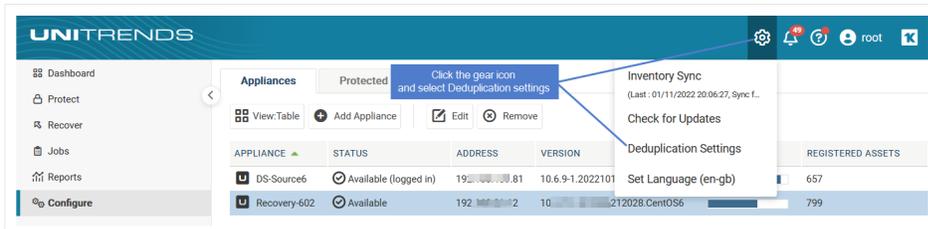
- 6 Proceed to "(Optional) Modify deduplication settings".

Step 6: (Optional) Modify deduplication settings

Deduplication is a data compression technique that eliminates duplicate data blocks. To yield fastest performance, the appliance is configured to use the Level 1 deduplication setting. You can opt to modify this setting to increase on-appliance retention. Keep in mind that increasing the deduplication level decreases job speed.

To modify the deduplication level

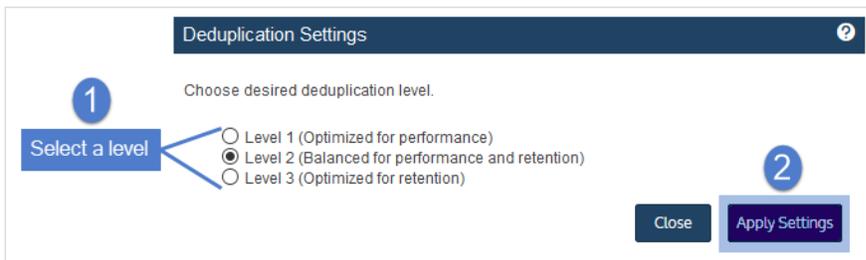
- 1 From the Global options at the top of the UI, select **Options > Deduplication Settings**.



2 Select one of the following deduplication settings:

- Level 1 – Use this setting to optimize performance.
- Level 2 – Use this setting to balance performance and on-appliance retention.
- Level 3 – Use this setting to optimize retention.

3 Click **Apply Settings**.



Step 7: Register and license the Unitrends Backup appliance

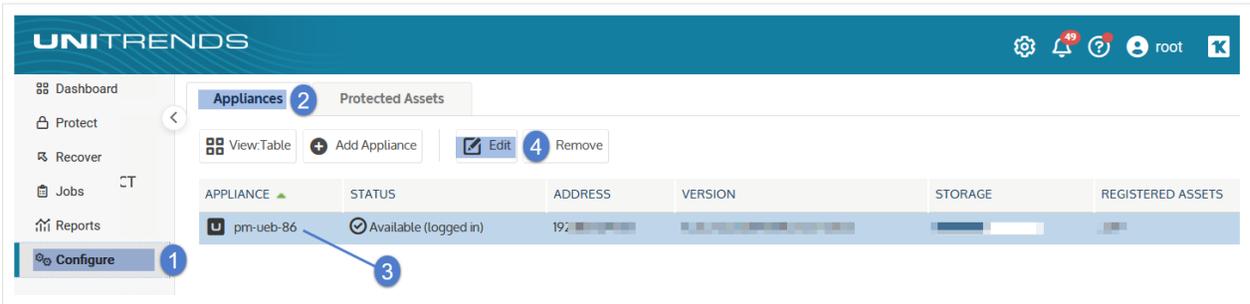
Your appliance is now configured and you can begin using it to protect your environment. For details, see the [Administrator Guide for Recovery Series, Recovery MAX, ION/ION+, and Unitrends Backup](#).

You must register and license the appliance within 30 days of deploying Unitrends Backup.

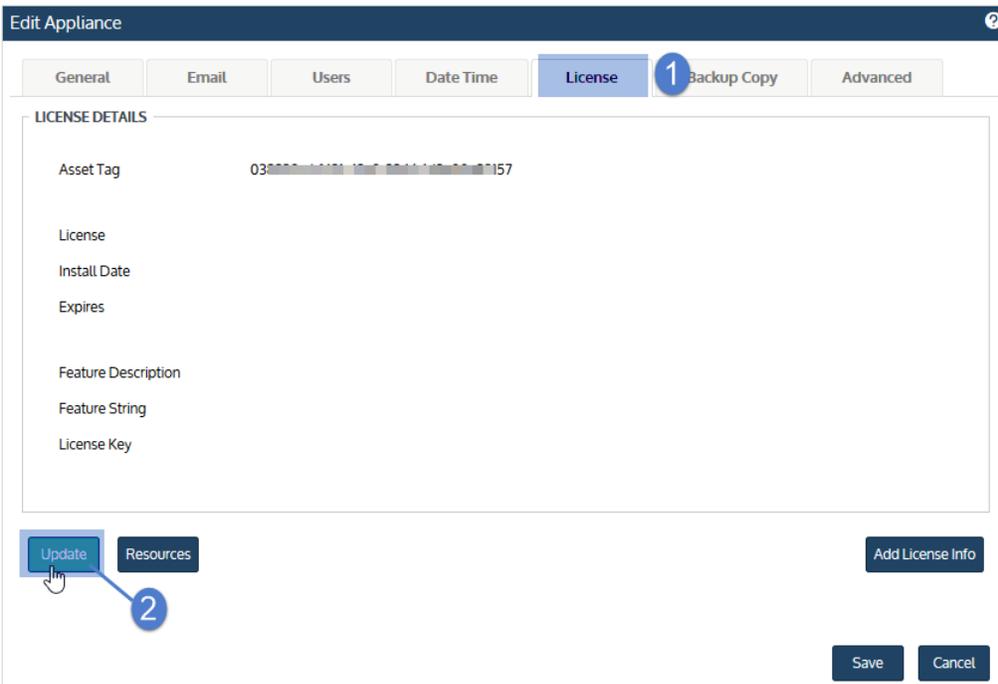
Each appliance requires an activation code and license key. Use the procedures below to register and license the appliance:

To register a Unitrends Backup appliance

- 1 On the **Configure > Appliances** page, select the appliance and click **Edit**.

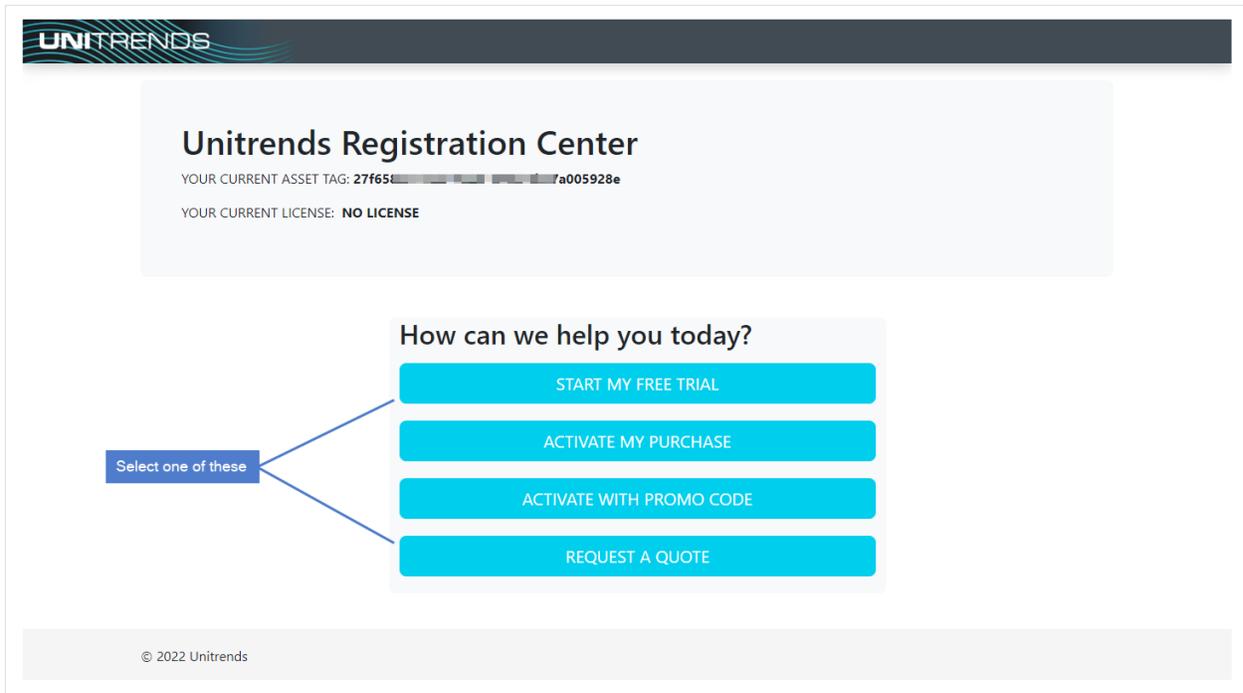


2 Select the **License** tab and click **Update**. The Registration Center displays.



3 Select one of the following:

Selection	Description
Start my free trial	Submit this form to start your free 30-day trial.
Activate my purchase	Enter your email address and activation code. Your license key will be emailed to the address you enter here.
Activate with promo code	Enter your promotional code to register your product and receive your license key.
Request a quote	Request a license quote.



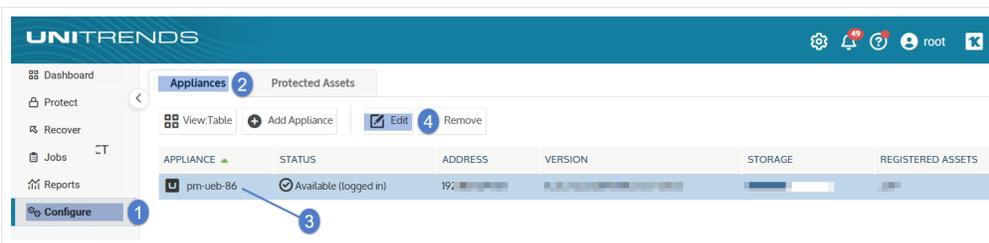
4 Complete and submit the applicable form.

Once you have purchased a license, Unitrends sends an email containing license details. Use the next procedure to apply this license information to the appliance.

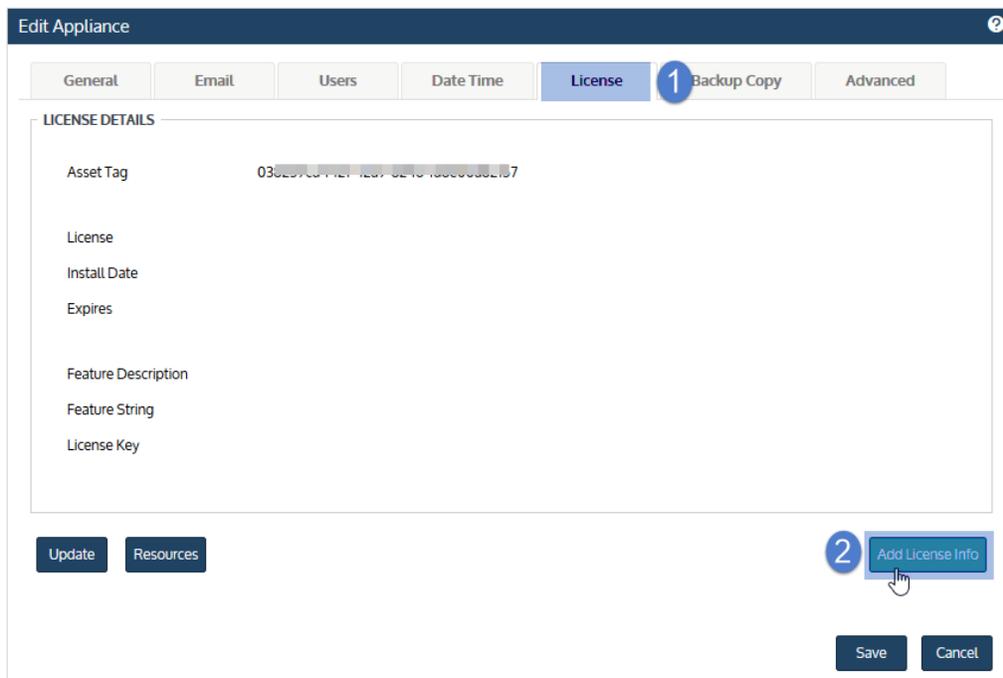
To license a Unitrends Backup appliance

Use these steps to enter license information you have received from Unitrends.

1 On the **Configure > Appliances** page, select the appliance and click **Edit**.

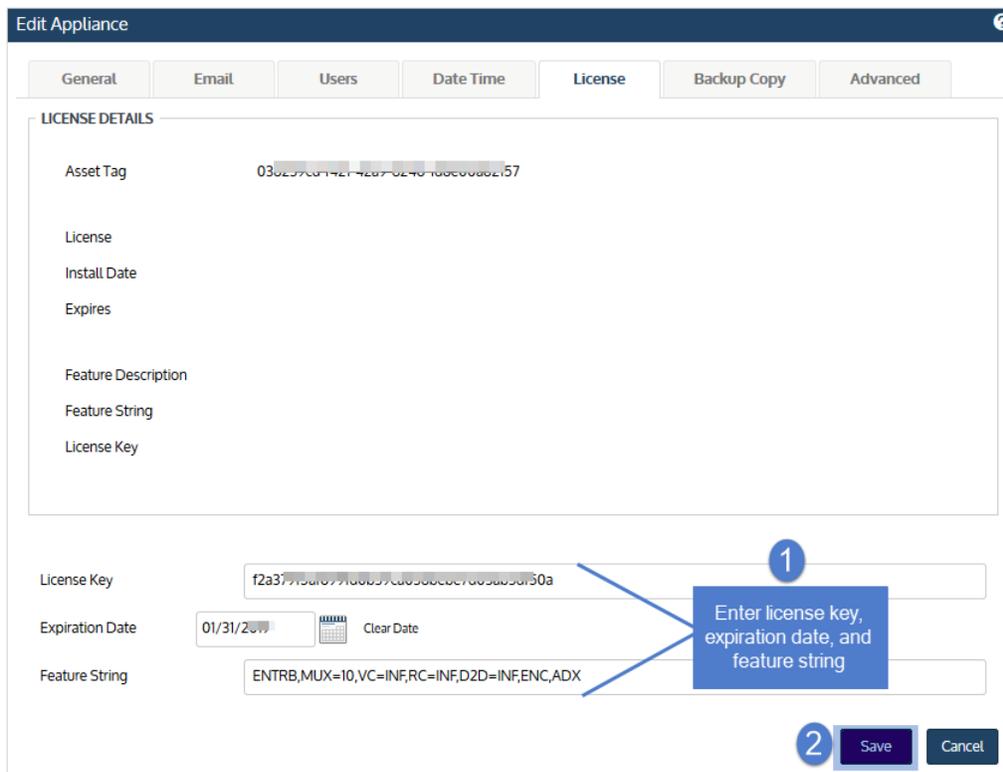


2 Select the **License** tab and click **Add License Info**.



3 Enter the License Key, Expiration Date, and Feature String.

4 Click **Save**. The license is applied.



Edit Appliance

General | Email | Users | Date Time | **License** | Backup Copy | Advanced

LICENSE DETAILS

Asset Tag	038200-00-MC1-1007-00-10-10000002157
License	Enterprise Edition
Install Date	Thu Nov 3 16:27:42 2016
Expires	01/31/2019
Feature Description	Unlimited Replication or Backups, Encryption, Archiving
Feature String	ENTRB,MUX=10,VC=INF,RC=INF,D2D=INF,ENC,ADX
License Key	f2a372f5-1102-40120-0301-17160113df50a

Upgrade | Resources | Add License Info

Save | Cancel

License is applied and details display

Step 8: Start protecting your environment

Deployment is complete and you can get started protecting your environment. For details, see the [Administrator Guide for Recovery Series, Recovery MAX, ION/ION+, and Unitrends Backup](#).