### Secure Remote Access Virtual Appliance Setup

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### **SRA Virtual Appliance Installation**

This guide is designed to walk you through the initial setup and configuration of your BeyondTrust SRA Virtual Appliance. Should you need any assistance, please log into the <u>Customer Portal</u> at <u>https://beyondtrustcorp.service-now.com/csm</u> to chat with Support.

### **Review License and Sizing Conditions**

Sizing Guidelines	Users	Endpoints	CPU	Memory	Disk 1	Disk 2
Small	1 - 20	1 - 1,000	2 - 4	4 - 8 GB	8 - 128 GB	64+ GB
Medium	20 - 75	1,000 - 10,000	4 - 8	16 - 32 GB	32 - 256 GB	132+ GB
Large	75 - 150	10,000 - 35,000	8 - 16	64 - 128 GB	128 - 1024 GB	1024+ GB
Enterprise	150 - 300	35,000 - 50,000	16 - 32	128 - 512 GB	512 - 4096 GB	1024+ GB
Atlas	300 - 3,000	50,000 - 250,000	Enterprise	Enterprise	Enterprise	Enterprise

#### Note:

For Atlas deployments please work with your solutions engineer for more detailed architecture planning.

- If you are an existing BeyondTrust customer and anticipate increasing to more than 300 concurrent users, please log into the <u>Customer Portal</u> at <u>https://beyondtrustcorp.service-now.com/csm</u> to chat with Support, to ensure that the resources allocated meet your needs. Most situations over 300 concurrent users require transitioning to an Atlas based architecture.
- The range that your deployment falls into is influenced by variables such as API usage, Console usage, size and number of Jump Groups, recording settings, failover replication frequency, and Jump Client upgrade settings.
- BeyondTrust offers a 150 Jump Clients per concurrent license.
- The above numbers assume one session per concurrent user.
- The resource specifications in this document represent recommendations. For troubleshooting purposes, BeyondTrust Technical Support may require your BeyondTrust SRA Virtual Appliance to be given reserved resources matching those listed here.

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### Deploy the BeyondTrust SRA Virtual Appliance into a VMware Environment

#### **Review Prerequisites for VMware**

You must have a VMware account and environment already configured.

Before beginning the BeyondTrust SRA Virtual Appliance setup, please review the following prerequisites:

- VMware vCenter 6.5+ and virtual hardware versions 13+.
- · At least 4GB of memory available.
- At least 140GB of storage available.
- One 32GB partition for the BeyondTrust OS, and at least 100GB available for logs and recordings.
- External IP SANs require a 1Gbit or 10Gbit reserved network with a 10K RPM disk or better.

For more information about sizes, please see <u>"Review License and Sizing Conditions" on page 4</u>.

- A static IP for your SRA Virtual Appliance.
- A private DNS A-record resolving to the static IP of your SRA Virtual Appliance. A public A-record and a public IP are also required if public clients access the B Series Appliance. The DNS A-record is the fully qualified domain name (FQDN) of your site (access.example.com, for example).

**Note:** "Public clients" include any client software (browsers, BeyondTrustaccess consoles, endpoint clients, etc.) which connect from external networks and VPN(s) local to the B Series Appliance's network.

- A valid NTP server that is reachable by the B Series Appliance.
- Ensure that the system time between the host ESXi server and the guest BeyondTrust OS are in sync. Variations by only a few seconds can potentially result in performance or connectivity issues.

### **Deploy the SRA Virtual Appliance**

To deploy the BeyondTrustSRA Virtual Appliance into a VMWare environment, follow the steps below:

1. Open the email you received from BeyondTrust Technical Support and click the link to download the BeyondTrust SRA Virtual Appliance OVA file.

BeyondTrust Download Available
BeyondTrust Build System <mysupport@beyondtrust.com></mysupport@beyondtrust.com>
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.
Greetings,
Thank you for choosing BeyondTrust for your Secure Remote Access needs!
Your BeyondTrust Virtual Appliance is registered in our systems for deploy.beyondtrust.com and is ready for download.
To install and configure this Virtual Appliance, follow all of the instructions below:
The BeyondTrust Virtual Appliance
Download your Beyond Trust Virtual Appliance
Click here for your BeyondTrust Virtual Applance (Whware)     Click here for your BeyondTrust Virtual Applance (Hyper-V and Azure)     Click here for your BeyondTrust Virtual Applance (Nidank AHV)
Deploy your BeyondTrust Virtual Appliance in AWS
Link your AWS account(s) by clicking here.
BeyondTrust Virtual Appliance Setup
Follow the appropriate installation guide for your product:
Contacting BeyondTrust
If you need additional assistance, please contact BeyondTrust Support.
We look forward to serving you. If you have any questions, don't hesitate to contact us at mysupport@beyondtrust.com.
Best Regards,

- BevondTrust Support Team
- 2. Log in to your virtual infrastructure client. You must use an account with permissions to deploy a virtual machine as an OVF template.

#### ACTIONS 🗸

Actions - Daniel Irby
🚹 New Virtual Machine
🕥 Deploy OVF Template
🎦 New Folder
🗀 Rename
Move To
Add Permission
Tags & Custom Attributes
Alarms
Remove from Inventory
Update Manager

6

3. On the Select an OVF Template screen, select the BeyondTrust.ova file.

#### Deploy OVF Template

1 Select an OVF template	Select an OVF template
2 Select a name and folder	Select an OVF template from remote URL or local file system
3 Select a compute resource	
4 Review details	Enter a URL to download and install the OVF package from the Internet, or browse to a
5 Select storage	location accessible from your computer, such as a local hard drive, a network share, or a
6 Ready to complete	CD/DVD drive.

Local file

Choose Files Bomgar.ova

#### CANCEL BACK

4. Review the OVF template details.

5. Read and accept the end user license agreement.

#### Deploy OVF Template

10 Ready to complete

1 Select an OVF template 2 Select a name and folder	Review details Verify the temple	ate details.
3 Select a compute resource 4 Review details		
5 License agreements	Publisher	Symantec Class 3 SHA256 Code Signing CA (Trusted certificate)
6 Configuration	Product	BeyondTrust Secure Remote Access Appliance
7 Select storage 8 Select networks 9 Customize template 10 Ready to complete	Version	2.0
	Vendor	BeyondTrust
	Description	BeyondTrust Secure Remote Access Appliance
	Download size	653.6 MB
	Size on disk	Unknown (thin provisioned)
		1.7 TB (thick provisioned)



I accept all license agreements.

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- BeyondTrust
  - 6. Specify a name for this OVF template, and select a location in the inventory to which you have rights.

Deploy	OVF	Template

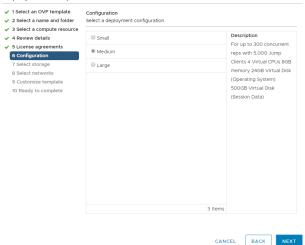
2 Select a name and folds:       Specify a unique name and target location         5 Select a conjunct resource       Virtual machine name:	1 Select an OVF template	Select a name and folder Specify a unique name and target location		
4 Review details     Virtual machine name:				
S License agreements 6 Configuration 7 Select allocation for the virtual machine. 7 Select strategy 8 Select networks 9 Customize template 10 Ready to complete 9 C C C C C C C C C C C C C C C C C C C		Virtual machine name:		
6 configuration         Select a location for the virtual machine.           7 select a location for the virtual machine.         Select a location for the virtual machine.           9 customize tamplate         > 1           9 Customize tamplate         > 1           10 Ready to complete         > 1           > 0         - 1           > 0				
Comparison         Select storage         Select sto	-	Select a location for the virtual machine		
Select networks       >         9 Customize template       >         9 Customize template       >         10 Ready to complete       >         >       >			-	
Outsomize template       >         10 Ready to complete       >         0       >				
O Ready to complete <ul> <li>I</li> </ul> <ul> <li>I</li> <li>I</li></ul>				
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 Select a configuration of Small, Medium, or Large. This selection defines your default resource allocations. Choose a configuration based on your usage needs and available resources.

*For more information about sizes, please see <u>"Review License</u> and Sizing Conditions" on page 4.* 





BACK NEXT

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8. Select a resource pool to which you have rights.

<ul> <li>1 Select an OVF template</li> <li>2 Select a name and folder</li> </ul>	Select a compute resource Select the destination compute	resource for th	is operation		
<ul> <li>2 Select a name and folder</li> <li>3 Select a compute resource</li> <li>4 Review details</li> <li>5 License agreements</li> <li>6 Configuration</li> <li>7 Select networks</li> <li>9 Customize template</li> <li>10 Ready to complete</li> </ul>					
	Compatibility				
	✓ Compatibility checks succe	eeded.			
			CANCEL	ВАСК	NI
eploy OVF Templat	e				
<ul> <li>1 Select an OVF template</li> <li>2 Select a name and folder</li> </ul>	Select storage Select the storage for the config	guration and di	sk files		
<ul> <li>3 Select a compute resource</li> <li>4 Review details</li> </ul>	Select virtual disk format:	Thic	Provision Lazy Zero	ed v	
5 License agreements	VM Storage Policy:		~ 🛆		
6 Configuration	Disable Storage DRS for this	virtual machine			
7 Select storage 8 Select networks	Name	Capacity	Provisioned	Free	Ту
9 Customize template	Bronze_DatastoreCluster	15 TB	11.88 TB	3.12 TB	
10 Ready to complete	PureStorage_Cluster     Silver_DatastoreCluster	72.99 TB 18 TB	62.8 TB 13.47 TB	10.19 TB 4.53 TB	
	Bronze_Datastore_3	4 TB	4.43 TB	4.55 TB 630.99 GB	V
	Bronze_Datastore_Cont	4 TB	2.56 TB	1.77 TB	V
	Bronze_Filetransfer	4 TB	2.01 TB	1.99 TB	V
	Bronze_Replication	4 TB	1.62 GB	4 TB	V
	Bronze_Zerto_Replication	4 TB	3.01 TB	1.28 TB	VI
				937.3 GB	V
	Bronze_Zerto_Replicati	4 TB	4.72 TB		
	Bronze_Zerto_Replicati Bronze_Zerto_Replicati	4 TB	1.05 TB	3.92 TB	
	Bronze_Zerto_Replicati				V
	Bronze_Zerto_Replicati Bronze_Zerto_Replicati Compile_Cluster_03	4 TB	1.05 TB	3.92 TB	V
	Bronze_Zerto_ReplicatI Bronze_Zerto_ReplicatI Compile_Cluster_03	4 TB 2 TB	1.05 TB	3.92 TB	V
	Bronze_Zerto_Replicati Bronze_Zerto_Replicati Compile_Cluster_03 Compatibility	4 TB 2 TB	1.05 TB	3.92 TB	V
eploy OVF Templat	Gronze_Zerto_Replicat     Gronze_Zerto_Replicat     Gronze_Zerto_Replicat     Complet_Cluster_03     Complet_Dility     Compatibility	4 TB 2 TB	105 TB 2.25 TB	3.92 TB 713.13 GB	V!
1 Select an OVF template 2 Select a name and folder	Bronze_Zeno_Replicat     Bronze_Zeno_Replicat     Gronze_Zeno_Replicat     Complet_Cluster_03     Complet_Dility     Compatibility	4 TB 2 TB seeded.	105 TB 225 TB CANCEL	3.92 TB 713.13 GB	V!
1 Select an OVF template 2 Select a name and folder 3 Select a compute resource	Bronze_Zerto_Replicat     Bronze_Zerto_Replicat     Gronze_Zerto_Replicat     Complet_Cluster_03     Complet_Dility     Compatibility     Compatibility checks succe e Select networks	4 TB 2 TB Heeded.	105 TB 225 TB CANCEL	3.92 TB 713.13 GB	V!
1 Select an OVF template 2 Select a name and folder 3 Select a compute resource 4 Review details	Bronze_Zerto_Replicat     Bronze_Zerto_Replicat     Gronze_Zerto_Replicat     Complet_Cluster_03     Complet_Dility     Completibility     Compatibility checks succe      Belect networks     Select networks	4 TB 2 TB Heeded.	105 TB 2.25 TB CANCEL etwork.	3.92 TB 713.13 GB	
1 Select an OVF template 2 Select a name and folder 3 Select a compute resource 4 Review details 5 License agreements 6 Configuration	Bronze_Zerto_Replicat.     Bronze_Zerto_Replicat.     Gronze_Zerto_Replicat.     Compile_Cluster_03     Compatibility     Compatibility checks succe      Select networks     select a destination network for     Source Network	4 TB 2 TB Heeded.	105 TB 2.25 TB CANCEL etwork. Destination Network	3.92 TB 713.13 GB	NE
1 Select an OVF template 2 Select a name and folder 3 Select a compute resource 4 Review details 5 License agreements 6 Configuration 7 Select storage	Bronze_Zerto_Replicat.     Bronze_Zerto_Replicat.     Gronze_Zerto_Replicat.     Compile_Cluster_03     Compatibility     Compatibility checks succe      Select networks     select a destination network for     Source Network	4 TB 2 TB Heeded.	105 TB 2.25 TB CANCEL etwork. Destination Network	3.92 TB 713.13 GB	
1 Select an OVF template 2 Select a name and folder 3 Select a compute resource 4 Review details 5 License agreements 6 Configuration 7 Select storage 8 Select networks	Bronze_Zerto_Replicat.     Bronze_Zerto_Replicat.     Gronze_Zerto_Replicat.     Compile_Cluster_03     Compatibility     Compatibility checks succe      Select networks     select a destination network for     Source Network	4 TB 2 TB Heeded.	105 TB 2.25 TB CANCEL etwork. Destination Network	3.92 TB 713.13 GB	
1 Select an OVF template 2 Select a name and folder 3 Select a compute resource 4 Review details 5 License agreements 6 Configuration 7 Select storage	Bronze_Zerto_Repicat     Bronze_Zerto_Repicat     Bronze_Zerto_Repicat     Compile_Cluster_03     Compatibility     Compatibility checks succe      Select networks     Select network for     Source Network     DMZ Network  IP Allocation Settings	4 TB 2 TB eeded	105 TB 2.25 TB CANCEL etwork.	3.92 TB 713.13 GB	
9 Customize template	Bronze_Zerto_Repitcat     Bronze_Zerto_Repitcat     Gronze_Zerto_Repitcat     Compile_Cluster_03     Compatibility     Compatibility     Compatibility checks succe     Select networks     Select network for     Source Network     DMZ Network	4 TB 2 TB eeded	105 TB 2.25 TB CANCEL etwork. Destination Network	3.92 TB 713.13 GB	VI NE

 Select the datastore on which you want the SRA Virtual Appliance to run. This is where the operating system and session data is stored.

10. Select the appropriate network mapping for your environment. Your SRA Virtual Appliance can function anywhere in your network with internet access. If you plan to access systems outside of your network, security practices recommend that you place the SRA Virtual Appliance in a DMZ or outside of your internal firewall. Network location considerations are outlined in the table below.

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Network Location Considerations for B Series Appliances			
Network Location	Advantages/Disadvantages		
Outside your firewall	Does not require that ports 80 and 443 be open inbound for TCP traffic on your firewall. Simplifies the setup process significantly because both the representative and customer clients are built to resolve to a specific DNS; if your registered DNS resolves to a public IP address directly assigned to your B Series Appliance, no additional setup is required by you to initiate a session.		
DMZ	Might require additional setup depending on your router or routers.		
Inside your firewall	Requires port forwarding on your firewall and possibly additional setup of your NAT routing and internal DNS.		

11. Return to the email you received from BeyondTrust Technical Support, and copy the Appliance License Key. In the Deployment Wizard, paste the key into the field.

Note: If for some reason you are unable to provide the Appliance

License Key at this time, you can manually enter it later, from the

Deploy OVF Template



CANCEL BACK NEX

12. Review your settings and click Finish.

virtual machine console.

13. The SRA Virtual Appliance deploys in the location and with the resources you have specified.

#### Deploy OVF Template

<ul> <li>1 Select an OVF template</li> <li>2 Select a name and folder</li> </ul>	Ready to complete Click Finish to start creation.		Í
<ul> <li>3 Select a compute resource</li> <li>4 Review details</li> </ul>			1
✓ 5 License agreements	Provisioning type	Deploy from template	
✓ 6 Configuration	Name	Bomgar	
<ul> <li>7 Select storage</li> <li>8 Select networks</li> </ul>	Template name	Bomgar	1
✓ 9 Customize template	Download size	594.6 MB	1
10 Ready to complete	Size on disk	1.7 TB	1
	Folder		1
	Resource		1
	Storage mapping	1	1
	All disks	Datastore: PureStorage_Cluster; Format: Thick provision lazy zeroed	l
	Network mapping	1	1
	DMZ Network		1
	IP allocation settings		l
	IP protocol	IPV4	1
	IP allocation	Static - Manual	l.
		CANCEL BACK FINI	ы

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For detailed information about network locations, please see <u>The BeyondTrust Appliance B Series in the Network</u> at www.beyondtrust.com/docs/privileged-remote-access/getting-started/deployment/dmz.

### Deploy the BeyondTrust SRA Virtual Appliance into a Hyper-V Environment

#### **Review Prerequisites for Hyper-V**

You must have a Hyper-V account and environment already configured.

Before beginning the BeyondTrust SRA Virtual Appliance setup, please review the following prerequisites:

- Hyper-V 2012 R2 (standalone or as a role) and Generation 2 hardware only.
- At least 4GB of memory available.
- At least 140GB of storage available.
- One 32GB partition for the BeyondTrust OS, and at least 100GB available for logs and recordings.
- External IP SANs require a 1Gbit or 10Gbit reserved network with a 10K RPM disk or better.

For more information about sizes, please see <u>"Review License and Sizing Conditions" on page 4</u>.

- A static IP for your SRA Virtual Appliance.
- A private DNS A-record resolving to the static IP of your SRA Virtual Appliance. A public A-record and a public IP are also required if public clients access the B Series Appliance. The DNS A-record is the fully qualified domain name (FQDN) of your site (access.example.com, for example).

**Note:** "Public clients" include any client software (browsers, BeyondTrust access consoles, endpoint clients, etc.) which connect from external networks and VPN(s) local to the B Series Appliance's network.

- A valid NTP server that is reachable by the B Series Appliance.
- Ensure that the system time between the host ESXi server and the guest BeyondTrust OS are in sync. Variations by only a few seconds can potentially result in performance or connectivity issues.

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### **Configure via Hyper-V Manager**

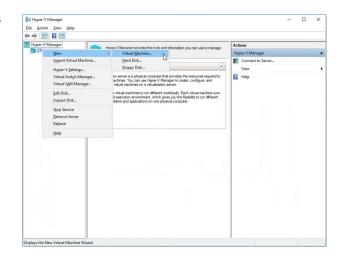
- Open the email you received from BeyondTrust Technical Support and click the link to download the BeyondTrust SRA Virtual Appliance (Hyper-V and Azure) file.
- 2. Save the file to an appropriate location to import to your Hyper-V host, and then double-click the ZIP file to extract your SRA Virtual Appliance.

BevondTrust Download Available BeyondTrust Build System <mysupport@beyondtrust.com es. To help protect your privacy, Outlook prevented automatic download of some pictures in this message Greetings Thank you for choosing BeyondTrust for your Secure Remote Access needs! Your BeyondTrust Virtual Appliance is registered in our systems for deploy.beyondtrust.com and is ready for download. To install and configure this Virtual Appliance, follow all of the instructions below The BevondTrust Virtual Appliance Download your Beyond Trust Virtual Appliance Click here for your BeyondTrust Virtual Appliance (VMware) Click here for your BeyondTrust Virtual Appliance (Hyper-V and Azure) Click here for your BeyondTrust Virtual Appliance (Nutanix AHV) Deploy your Beyond Trust Virtual Appliance in AWS Link your AWS account(s) by clicking here. BeyondTrust Virtual Appliance Setup 1. Follow the appropriate installation guide for your product: Prove the appropriate installation guide for your product.
 e Beyord Trisst RS Virtual Appliance Installation guide
 Privileged Remote Access Virtual Appliance Installation guide
 When prompted for the Appliance License Key (ALK), enter
 Install any available BeyondTrust updates using 'Check for Updates' Contacting BeyondTrust If you need additional assistance, please contact BeyondTrust Support. We look forward to serving you. If you have any questions, don't hesitate to contact us at mysupport@beyondtrust.com

Best Regards,

BeyondTrust Support Team

- 3. Start Hyper-V Manager.
- Ensure the server you wish to install the SRA Virtual Appliance on is present. Right-click the desired server and select New > Virtual Machine to start the New Virtual Machine Wizard.



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6. Select Generation 2 and click Next.

- 5. Enter a display name to easily identify the virtual machine, and choose a location for the BeyondTrust SRA Virtual Appliance. Then click **Next**.
- 🖳 New Virtual Machine Wizard × Specify Name and Location Before You Begin Choose a name and location for this virtual machine. The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload. Specify Generation Assign Memory Name: New Virtual Machine Configure Networking You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server. Connect Virtual Hard Disk Store the virtual machine in a different location Installation Options Summary Location: C:\ProgramData\Microsoft\Windows\Hyper-V\ Browse... ▲ If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space. < Previous Next > Finish Cancel 🐖 New Virtual Machine Wizard × ۲ Specify Generation Before You Begin Choose the generation of this virtual machine. Specify Name and Location Specify Generation O Generation 1 This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V. Assign Memory Generation 2 Configure Networking This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system. Connect Virtual Hard Disk Installation Options ▲ Once a virtual machine has been created, you cannot change its generation. Summary More about virtual machine generation sup < Previous Next > Finish Cancel New Virtual Machine Wizard X . Assign Memory Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912/MB. To improve performance, specify more than the minimum amount recommended for the operating system. Before You Begin Specify Name and Location Specify Generation Startup memory: 1024 MB Assign Memory Use Dynamic Memory for this virtual machine. Configure Networking When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run. Connect Virtual Hard Disk Installation Options Summary
- Enter 4096 MB for a small deployment, or 8192 MB for any other size. Do not use dynamic memory. Click Next.

< Previous Next > Finish Cancel

8. From the **Connection** dropdown, select the network interface option that best suits your needs, and then click **Next**.

efore You Begin	Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.
pecify Name and Location pecify Generation ssign Memory onfigure Networking ionnect Virtual Hard Disk Installation Options ummary	Connection: Intel® 82.57.41 Gigabit Network Connection - Virtual Switch V

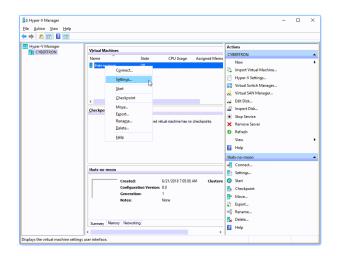
 Select Use an existing virtual hard disk and select the BeyondTrust-br.v.2.vhdx file that was extracted earlier from the download archive. BeyondTrust recommends putting the VHD file in the same location where the VM resides. Click Next.

Name and Location Generation Memory	storage now or configure it later by modifying the virtual machine's properties. O Create a virtual hard disk Use this option to create a VHDX dynamically expanding virtual hard disk.
re Networking	Name: BeyondTrust-br.v.2.vhdx
t Virtual Hard Disk	Location: C:\Hyper-V\BeyondTrust-br.v.2\Virtual Hard Disks\ Browse
ry	Size: 127 GB (Maximum: 64 TB)
	Location: C:'hyper-v'BeyondTrust-br.v.2.vhdx Browse
	Attach a virtual hard disk later Use this option to skip this step now and attach an existing virtual hard disk later.

•

ect Virtual Hard Disk

- 10. Review the VM details on the **Summary** page and click **Finish**.
- 11. Once the VM has been created, right-click it and select Settings.



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12. Click **Security**, and uncheck **Enable Secure Boot**. This helps to prevent unauthorized code from running when the machine is started.

13. Click SCSI Controller and select Hard Drive. Then click Add.

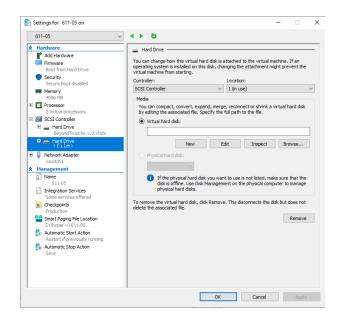
★ Hardware	Security
Add Hardware	•
Firmware	Secure Boot
Boot from Hard Drive	Use Secure Boot to help prevent unauthorized code from running at boot time (recommended).
Security	Enable Secure Boot
Secure Boot disabled	
4096 MB	Template:
Processor	Microsoft Windows $\checkmark$
2 Virtual processors	Encryption Support
E SCSI Controller	
🗉 👝 Hard Drive	Enable Trusted Platform Module
BeyondTrust-br.v.2.vhdx	A Trusted Platform Module (TPM) is a special purpose microprocessor which
Hard Drive 611-05-datadisk1.vhdx	provides cryptographic services to a compute platform.
Il Network Adapter	Encrypt state and virtual machine migration traffic
vswitch1	Encryption support requires a key protector (KP) configuration for the virtual
★ Management	machine. If not already present, selecting one of these options will generate a
I Name	KP that allows running the virtual machine on this host.
611-05	Security Policy
Integration Services	Specify additional protection options for the virtual machine.
Some services offered	Enable Shielding
Checkpoints Production	
Smart Paging File Location	This affects additional settings.
D:\hyper-v\ 611-05	Learn more about virtual machine security.
Automatic Start Action	
Restart if previously running	
Automatic Stop Action	
Save	
Settings for 611-05 on	- 🗆 X
Settings for 611-05 on 611-05 ~	× □ -
611-05 ~	<b>6 1 4 €</b>
611-05 ~	- A
611-05 V Add Hardware	Image: State
611-05	
611-05 V Add Hardware	Image: State
611-05 Add Hardware Framware Boot fram Hard Drive Secure Boot deabled	
611-05	Vou can add hard drives and CD_DVD drives to your SCSI controller or remove the SCSI controller or remove the SCSI controller or remove the SCSI controller and then dick Add.      Select the type of drive you want to attach to the controller and then dick Add.      Hord Drive      DVD Drive
611-05 A Hardware Feddiad Hardware Boot from Hard Drive Secure Boot disabled Memory 4006 MB	
61-05 A Hardware Add Hardware Firmware Boot from Hard Drive Security Secure Boot disabled Memory G995 MB C Processor	Vou can add hard drives and CD_DVD drives to your SCSI controller or remove the SCSI controller or remove the SCSI controller or remove the SCSI controller and then dick Add.      Select the type of drive you want to attach to the controller and then dick Add.      Hord Drive      DVD Drive
611-05     A Hardware     Fad Hardware     Fourther     Security     Secure Boot from Hard Drive     Security     Secure Boot disabled     Memory     4096 MB     Orcossors     2 Vitual processors	Vou can add hard drives and CD_DVD drives to your SCSI controller or remove the SCSI controller or remove the SCSI controller or remove the SCSI controller and then dick Add.      Select the type of drive you want to attach to the controller and then dick Add.      Hord Drive      DVD Drive
611-05     A Hardware     A datardware     Firmare     Boot from Hard Drive     Security     Secure Boot deabled     Memory     4096 MB     Processor     2 Virtual processors     2 Virtual processors     2 Virtual processors	Vou can add hard drives and CD_DVD drives to your SCSI controller or remove the SCSI controller or remove the SCSI controller or remove the SCSI controller and then dick Add.      Select the type of drive you want to attach to the controller and then dick Add.      Hord Drive      DVD Drive
611-05     A Hardware     Add Hardware     Forumere     Boot from Hard Drive     Secure Boot disabled     Memory     redits Hol     Concessors     2. Vitual processors     2. Vitual processors     2. Vitual processors     With an One     With and Drive	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI     controller from the vitual machine.     Select the type of drive you want to attach to the controller and then click Add.     Mod forwe     DVD Drive     Shared Drive     Add
611-05     A Hardware     A datardware     Firmare     Boot from Hard Drive     Security     Secure Boot deabled     Memory     4096 MB     Processor     2 Virtual processors     2 Virtual processors     2 Virtual processors	Controller     C
Stand Hardware     A Hardware     Add Hardware     Firmware     Boot from Hard Drive     Security     Secure Boot disabled     Memory     4096 MB     Processor     2 Virtual processors     Security     Securi	Controller     You can add hard drives and CD_DIVD drives to your SCSI controller or remove the SCSI     controller from the virtual machine.     Select the type of drive you want to attach to the controller and then click Add.     DIVD Drive     Shared Drive     Add     You can configure a hard drive to use a virtual hard disk or a physical hard disk after     you statch the drive to the controller.
611-05     ✓       A Hardware     Frances       Frances     Fourther       Secure Boot disabled     Memory       4096 MB     Memory       2 Virtual processors     2 Virtual processors       2 Secure Boot disabled     BeyondTract-br.v.2.vhdx       B → Hard Drive BeyondTract-br.v.2.vhdx     B       W = Network Adapter vanish11     Virtual processors	Controller     C
Stand Hardware     A Hardware     Add Hardware     Firmware     Boot from Hard Drive     Security     Secure Boot deabled     Memory     4996 MB     Processor     2 Vitual processors     Sol Cost Controler     Bendiminate tr.v.2.vindx     Bendiminate tr.v.2.vindx     Secure Solution     Network Adapter     vanich1     X Hanagement	Controller     You can add hard drives and CD_DIVD drives to your SCSI controller or remove the SCSI     controller from the virtual machine.     Select the type of drive you want to attach to the controller and then click Add.     DIVD Drive     Shared Drive     Add     You can configure a hard drive to use a virtual hard disk or a physical hard disk after     you statch the drive to the controller.
611-05     ✓       A Hardware     Frances       Frances     Fourther       Secure Boot disabled     Memory       4096 MB     Memory       2 Virtual processors     2 Virtual processors       2 Secure Boot disabled     BeyondTract-br.v.2.vhdx       B → Hard Drive BeyondTract-br.v.2.vhdx     B       W = Network Adapter vanish11     Virtual processors	Controller     C
Stand Hardware     A Hardware     Add Hardware     Firmmare     Boot from Hard Drive     Security     Secure Boot disabled     Memory     4096 MB     Procesor     20 Virtual procesors     Societation     Memory     Security     Retroit Adapter     vasitch1     A Hanagement     File Societation     Security     Security	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
St1-05     Security     Finance	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
St1-05     Source Boot deabled     Hardware     Finnace     Finnace     Finnace     Security     Secure Boot deabled     Memory     2 Writial processors     2 Writial processors     2 Writial processors     2 Writial processors     We Head Drive     BeyondTract Processor     We Head Drive     Security     Network Adapter     vasitic1     Name     Sill 05     Some services offered     Some services offered     Secures     Secures	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
Il-05     A Hardware     A datardware     A datardware     A datardware     Boot from hard Drive     Secure Boot dashed     Memory     dops M8     Processor     2 Vitual processors     Of OCC concessors     Of OCC concessors     Of OCC concessors     A Hard Drive     Beynonfinate fru: 0.2 vitual     Remont     A Hangement     Anne     611-05     Some services     S	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
Still State     Secure Boot deabled     Memory     Secure Boot deabled     Secure Boot deabled	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
St1-05     A Hardware     A datardware     A datardware     Firmare     Boot from Hard Drive     Security     Secure Boot disabled     Memory     dogs MB     Orcessor     2 Virtual processors     Societaria     Memory     Hard Drive     Beyond Trusthr.v.2.vhdx     Societaria     Network Adapter     vanich1     A Hangement     Societaria     Soc	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
Il-05     I	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
II-05     A Hardware     Idad Hardware     Idad Hardware     Boot from Hard Drive     Secure Boot deabled     Memory     dops Ma     Processor     2 Virtual processors     2 Virtual processors     Of OCC Concole     Memory     Hard Drive     Beynorfinate hr.v.2.vhdx     Imagement     Integration Services     Some services     Som	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
Il-05     I	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.
A Hardware     Add Hardware     Final Add Hardware     Secure Boot disabled     Memory     Hemory     Hemory     Post disabled     Final Add Hardware     Final Hardware     Final Hardware     Final Hardware     Final Hardwa	Controller     You can add hard drives and CD/DVD drives to your SCSI controller or remove the SCSI controller from the vitual machine.     Select the type of drive you want to attach to the controller and then dick Add.     DVD Drive     Shared Drive     Add     You can configure a hard drive to use a vitual hard dick or a physical hard disk after     you attach the drive to use a vitual machine, dick Remove. All vitual hard     disk attached to this controller.

OK Cancel

🛐 Settings for 611-05 on

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14. Click the **New** button to create a new virtual hard disk. The **New Virtual Hard Disk Wizard** launches.



15. On the Choose Disk Format page, select VHDX and click Next.

Before You Begin Choose Daki Format Choose Daki Type Speaffy Name and Locabon Configure Dak Summary	What format do you want to use for the virtual hard dak?         > VHD         Supports virtual hard daks up to 2,040 GB in size.         @ VHDX         This format supports virtual daks up to 64 TB and is resilient to consistency issues that might occur from comparison faures. This format is not supported in operating systems earlier than Windows Server 2012.
--	--

16. Choose your desired disk type on the **Choose Disk Type** page, and click **Next**.

17. On the Specify Name and Location page, provide a name and

location for the virtual hard disk file. Click Next.

New Virtual Hard Disk With Mithematical Hard Disk With Withematical Hard Disk With Withematical Hard Disk Wit	
Before You Regin Choose Disk Format Choose Disk Format Specify Name and Location Configure Disk Summary	What type of virtual hard disk do you want to create? Nits type of disk provides better performance and is recommended for servers running applications with high levels of disk city. The virtual hard disk file that is created initially uses the size of the with all hard disk and does not change when data is deleted or added. Or Dramatically expanding This type of disk provides better use of physical storage space and is recommended for servers running applications that are on click intravive. The virtual hard disk file that is created is small initially and changes as data is added. Or Efferencing This type of disk is associated in a parent-child relationship with another disk that you want to leave intact. You can make changes to the data or operating system without affecting the parent disk, obst thay ou can rever the changes easily. All children must have the same virtual hard disk format as the parent (WED or VEDI).
New Virtual Hard Disk Wit     Specify Nam	<previous next=""> Finish Cancel card X ne and Location</previous>
Before You Begin Choose Disk Format Choose Disk Type Speedfy Name and Location Configure Disk Summary	Speafy the name and location of the virtual hard disk file.           Name: <a href="https://www.intername.org">https://www.intername.org</a> Location: C:\Users'Public'Documents'Hyper-V/Wrtual Hard Disks\         Browse
	< Previous Next > Finish Cancel

18. Select Create a new blank virtual hard disk and specify a size of 100 GB. Click Next.

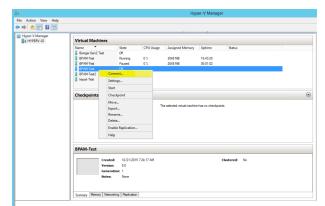
📥 Configure I	bisk			
lefore You Begin Choose Disk Format Choose Disk Type Specify Name and Location	You can create a blank virtual hard disk or copy th © Create a new blank virtual hard disk Size: 100 GB (Maximum: 64 TB) C copy the contents of the specified physical di		isting physical disl	ς.
Configure Disk Summary	Physical Hard Disk (\PHYSICALDRIVE0 (\PHYSICALDRIVE1		Size 59 GB 1535 GB	
	Copy the contents of the specified virtual han Path:	d disk		Browse
	< Previous	Next >	Finish	Cancel

18

- 19. Review the hard disk option on the **Summary** page and then click **Finish**.
- 20. If your sizing requirements are for a medium or larger virtual machine, follow the above steps to create an additional disk, and specify a size of **500 GB**.

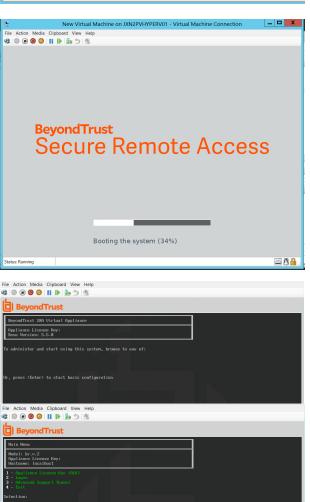
For more information about sizes, please see "Review License and Sizing Conditions" on page 4.

21. Finally, right click on the virtual machine and select Connect.



22. Click the **Start** button to start the Hyper-V virtual machine.

23. From the initial console configuration screen, press **Enter**, and then press **1** to enter the Appliance License Key.



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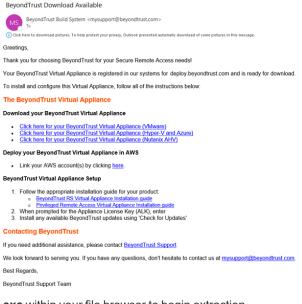
24. Go back to the email you received from BeyondTrust Technical Support, get the Appliance License Key, enter it here, and then press **Enter**.

**Note:** If you are unable to provide the Appliance License Key at this time, you can manually enter it later from the virtual machine console.

2	New Virtual Machine on JXN2PVHYPERV01 - Virtual Machine Connection	_ 🗆 🗙
	Clipboard View Help	
🕸 💿 🖲 🥘 😂		
BeyondT	hust	
Nain Menu		
Nodel: br.v.2 Appliance License Hostname: localho	· Kny: st	
1 - Appliance Lice	inse Key (ALK)	
2 - Login 3 - Advanced Suppo 4 - Exit		
Selection: 1		
The ALK will be pro	wided by BeyondTrust when you purchase your license. CDE-12345-FGH1J-67090	
Little new vorue. In		
Status: Running		i 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

### **Configure via PowerShell**

- Open the email you received from BeyondTrust Technical Support and click the link to download the BeyondTrust SRA Virtual Appliance (Hyper-V and Azure) file.
- 2. Save the file to an appropriate location to import to your Hyper-V host, and then double-click the ZIP file to extract your SRA Virtual Appliance.



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- 3. Double click BeyondTrust Privileged Remote Access-hyperv-azure.exe within your file browser to begin extraction.
- 4. Choose the destination directory for the extraction and click Extract.

Note: Extract to a directory where you want to run the virtual machine from.

- 5. When extraction is complete, the following files appear in the designated location:
  - Deploy-AzBeyondTrustVM.ps1: PowerShell script to assist deployment of your appliance to Hyper-V.
  - Deploy-HyperVBeyondTrustVM.ps1: PowerShell script to assist Azure deployment. Not used.

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- BeyondTrust-br.v.2.vhdx.
- 6. Deploy- HyperVBeyondTrustVM.ps1 uses the Hyper-V PowerShell module. Right-click on the script and click Edit.
- 7. Once the PowerShell script opens, locate the following variables and edit for your environment:
  - **\$vmName:** The name for the virtual machine.
  - \$vmLocation: The directory that the virtual machine resides in.
  - \$vmSwitch: The virtual switch this virtual machine uses.
  - \$beyondtrustVHD: The name of the VHDX. Leave as is.

```
Deploy-HyperVBeyondTrustVM.ps1* X
```

```
1
    ## BeyondTrust Hyper-V Deployment script
 2
 3
    ##
       This script will create a vm using
    ##
4
       the BeyondTrust VHD.
 5
    ##
       Refer to BeyondTrust support documentation for custom
 6
    ##
 7
    ##
       deployment options.
 8
    ##
    ## Required variables:
 9
    ## vmName: What to call this vm in Hyper-V
10
    ## vmLocation: the folder to create this vm in
11
    ## vmSwitch: the switch to attach this vm to
12
13
    ## BeyondTrustVHD:
          The name of the vhd provided by BeyondTrust.
14
    ##
          THIS VHD SHOULD ALREADY BE IN $vmLocation
    ##
15
    16
17
    $vmName = ""
18
    $vmLocation =
19
    $vmSwitch = ""
20
    $beyondtrustVHD = "BeyondTrust-br.v.2.vhd"
21.
- 1
```

- 8. Set the value of the **\$size** variable to the desired deployment size for your virtual machine. The options are:
  - small
  - medium
  - large

22	
23	***********
24	## Select a size based on the number of
25	<pre>## licenses or endpoints. Only uncomment one.</pre>
26	<pre>## (Refer to BeyondTrust support for details)</pre>
27	##
28	<pre>## Small (1-20 licenses or 1-3000 endpoints) (Default)</pre>
29	<pre>\$size = "small"</pre>
30	
31	<pre>## Medium (20-100 licenses or 3001-15000 endpoints)</pre>
32	#\$size = "medium"
33	
34	## Large (100+ licenses or 15000+ endpoints)
35	#\$size = "large"

For more information about sizes, please see "Review License and Sizing Conditions" on page 4.

9. Save and run the script in Windows Powershell.

10. Once complete, you can view the newly created virtual machine in Hyper-V Manager or via PowerShell Hyper-V commands.

Network Location Considerations for B Series Appliances		
Network Location Advantages/Disadvantages		
Outside your firewall	Does not require that ports 80 and 443 be open inbound for TCP traffic on your firewall. Simplifies the setup process significantly because both the representative and customer clients are built to resolve to a specific DNS; if your registered DNS resolves to a public IP address directly assigned to your B Series Appliance, no additional setup is required by you to initiate a session.	
DMZ	Might require additional setup depending on your router or routers.	
Inside your firewall	Requires port forwarding on your firewall and possibly additional setup of your NAT routing and internal DNS.	

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### Deploy the BeyondTrust SRA Virtual Appliance into a Microsoft Azure Environment

#### **Review Prerequisites for Microsoft Azure**

You must have a Microsoft Azure account and environment, including Microsoft Azure Resource Manager (ARM), already configured.

For deployment via Microsoft Azure, make sure the following is in place prior to deployment:

- A resource group.
- A storage account with a VHDX container.
- A VNET and subnet has been configured.

For deployment via Powershell, make sure the following is in place prior to deployment:

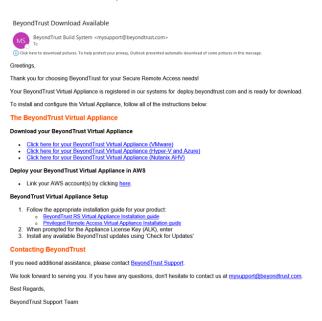
- Powershell AZ module installed.
- · Powershell Hyper-V module installed.

For more information about installing and configuring the Azure PowerShell Module, please see Install and configure Azure PowerShell at https://docs.microsoft.com/en-us/powershell/azure/install-Az-ps?view=azps-4.1.0.

### **Deploy the SRA Virtual Appliance**

To deploy the BeyondTrust SRA Virtual Appliance into a Microsoft Azure environment, follow the steps below:

- Open the email you received from BeyondTrust Technical Support and click the Click Here for your BeyondTrust Virtual Appliance (Hyper-V and Azure) link to download the file.
- 2. Click **BeyondTrust Privileged Remote Access-hyperv**azure.exe within your file browser to begin installation.
- 3. If you receive a Security Warning prompt, click Run.
- 4. Choose where you wish the files to be extracted. Click Extract.
- 5. When extraction is complete, Deploy-AzBeyondTrustVM.ps1, Deploy- HyperVBeyondTrustVM.ps1, and BeyondTrustbr.v.2.vhdx files appear in the location you designated during the extraction process. A PowerShell script is provided to assist in the deployment of your B Series Appliance to Azure: Deploy-AzBeyondTrustVM.ps1. A second script, Deploy-HyperVBeyondTrustVM.ps1, is provided to assist with Hyper-V deployments, and should not be used to deploy to Azure. Deploy-AzBeyondTrustVM.ps1 uses the Az module. Right-click Deploy-AzBeyondTrustVM.ps1 and click Edit.



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- Once the PowerShell script opens, locate STEP 1 and modify the following variables based on the specifics of your Microsoft Azure environment:
  - resourceGroupName
  - storageAccountName
  - location (westus, for example)
  - vnetName
  - subnetName

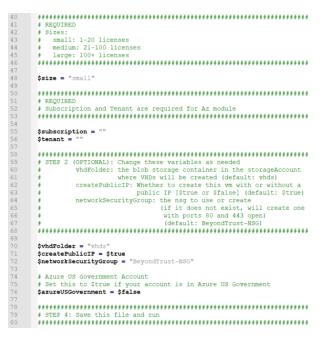
12	
13	# Instructions
14	*
15	# This script deploys a BeyondTrust Appliance to the Microsoft Azure
16	* · · · · · · · · · · · · · · · · · · ·
17	# STEP 1 (REQUIRED): Fill out these variables
18	<pre># resourceGroupName:</pre>
19	# The name of the Resource Group to create the VM in
20	# storageAccountName: The name of the Storage Account to
21	# upload and create VHDs in
22	NOTES: This must already exist with a container
23	<pre># named the same as `\$vhdFolder` (default: vhds)</pre>
24	# vnetName: The name of the virtual network to add the NIC to
25	# subnetName: The name of the subnet to add the NIC to
26	# location: the Location that the vm should be created in
27	<pre># (must match the location of previous settings)</pre>
28	# vmName: what name to set the vm to in Azure
29	# (Name must only contain alphanumeric (A-z 0-9)
30	# dash (-), underscore (_), or period (.) )
31	**********
32	
33	<pre>\$resourceGroupName = ""</pre>
34	<pre>\$storageAccountName = ""</pre>
35	<pre>\$vnetName = ""</pre>
36	<pre>\$subnetName = ""</pre>
37	<pre>\$location = ""</pre>
38	<pre>\$vmName = "BeyondTrust-br.v.2"</pre>

Note: The vmName does not need to be changed.

Note: The storage account used for storing the Azure Virtual Appliance must be General purpose v2.

- In the Deploy-AzBeyondTrustVM.ps1 script, set the value of \$size to the desired deployment size of your SRA Virtual Appliance. The options are:
  - small
  - medium
  - large

For more information about sizes, please see <u>"Review License</u> and Sizing Conditions" on page 4.

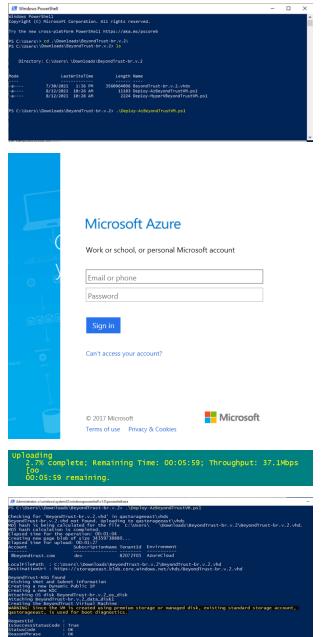


- 8. The Az module requires a subscription and tenant ID from Azure to deploy. Enter this information.
- 9. Change optional variables as required for your Microsoft Azure environment.
- 10. For US government accounts, set the value of **\$azureUSGovernment** to **\$true**.

11. Save, then run the script in Windows PowerShell.

- 12. When prompted, enter your credentials and sign into your **Microsoft Azure** account.
- 13. Next, the system configures an MD5 hash, uploads the SRA Virtual Appliance into your Azure environment, and configures a public IP address for your BeyondTrust SRA Virtual Appliance.

14. You are prompted to go to the IP address configured for your SRA Virtual Appliance. The message reads *For Appliance administration, go to https://xx.xx.xx.xx/appliance.* 



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- 15. On the /appliance page, enter your **Appliance License Key** provided in the email from BeyondTrust Technical Support. Click **Save**.
- 16. To setup a persistent URL for your SRA Virtual Appliance, you can perform one of two options:
  - In the Azure console, set the SRA Virtual Appliance's external IP to static. Then assign your DNS entry to that external IP.
  - Apply a DNS name within Azure. Set a CNAME record pointed to that address.

BeyondTrust Secure Remote Access	Virtual Appliance LOGIN
Appliance License Key (ALK)	
Appliance License Key (ALK) The ALK will be provided by BeyondTrust when you purchase your license. Appliance License Key: Save	
Copyright © 2002-2019 BeyondTrust Corporation. Redistribution Proh	ibited. All Rights Reserved.

For information about using BeyondTrust Vault with an Microsoft Azure Active Directory Domain Services Account, please see the Beyond Trust Vault Guide at https://www.beyondtrust.com/docs/privileged-remote-access/how-to/vault/index.htm.

# Deploy the BeyondTrust SRA Virtual Appliance into an Amazon AWS Environment



**Note:** You must have an Amazon AWS account and support plan already configured. You are also responsible for registering the DNS hostname for your site.

Administrators can deploy the BeyondTrust SRA Virtual Appliance into their Amazon Web Services (AWS) environment by following the steps below.

 Open the email you received from BeyondTrust Technical Support and select the Link your AWS account(s) link to be redirected to the BeyondTrust site.

 Enter your Commercial AWS Account ID or Government AWS Account ID in the text box and click Add Account ID. Your SRA Virtual Appliance is shared with your Amazon AWS account as a Private Amazon Machine Image (AMI) within an hour. The AMI is shared to each of your AWS regions.

**Note:** If you are uncertain what your AWS Account ID is, the email contains a link to an Amazon help page that details how to find it.



Registered AWS Account IDs No Accounts exist

- 3. In the AWS EC2 Dashboard, in the AWS services section, click the EC2 link to start the wizard.
- 4. Browse to Images > AMI.
- 5. Select **Private Images** from the dropdown.
- Select the SRA Virtual Appliance (for example, BeyondTrust SRA Appliance 6.x.x) in the AMI list. This is the base software image, which must next be updated and configured.
- 7. Click the Launch button.
- 8. Choose an instance type. BeyondTrust supports all T3 and M5 instance types.

For more information about sizes, please see "Review License and Sizing Conditions" on page 4.

#### 9. Click Next: Configure Instance Details.

- 10. After configuring the instance launch details, click Next: Add Storage.
- 11. On the Add Storage page, configure the sizes and volume types of the drives you wish to include on the AMI. A second EBS volume is set to device /dev/sdb with a size of 10GB. We recommend you increase this second disk to 100GB. If you need a large volume for recordings, and this is a cost-sensitive deployment, then you can provision a third drive and configure it as Magnetic (standard). The third drive must be added as /dev/sdg. You may enable the Encrypted option if desired.
- 12. Click Next: Add Tags.
- 13. Click Next: Configure Security Group.
- 14. The Launch Wizard creates a security group which you must edit, or you can create a new security group after you deploy the image, so that the site is accessible on ports 443 and 80. This can be accomplished from **Network & Security > Security Groups** in the **EC2 Dashboard**.
- 15. Click Review and Launch. Review your instance details and click Launch.
- 16. Skip the option to select or create a key pair, as the instance does not allow SSH access. Instead, select **Proceed without a key pair**, check the acknowledgment box, and click **Launch Instances**.
- 17. After the site launches, browse to **Instances > Instances** in the EC2 Dashboard and locate the assigned **Public IP** address in the **Description** tab. This is the IP address used to configure your B Series Appliance and your DNS A record.

**Note:** If you stop or terminate your Instance, you are not guaranteed to retrieve the same IP address after it reboots. To facilitate managing your DNS, we recommend purchasing an Elastic IP address.

- 18. Navigate in a web browser to https://[Public IP address]/appliance.
- 19. Enter your **Appliance License Key** provided in the email from BeyondTrust Technical Support. Click **Save**.

BeyondTrust Secure Remote Access	Virtual Appliance LOGIN
Appliance License Key (ALK)	
The ALK will be provided by BeyondTrust	when you purchase your license.
Appliance License Key:	

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### Deploy the BeyondTrust SRA Virtual Appliance into a Nutanix AHV Environment

#### **Review Prerequisites for Nutanix**

You must have a Nutanix account and environment already configured.

Before beginning the BeyondTrust SRA Virtual Appliance setup, please review the following prerequisites:

- Nutanix AHV 20190916.410+.
- At least 4GB of memory available.
- At least 140GB of storage available.
- One 32GB partition for the BeyondTrust OS, and at least 100GB available for logs and recordings.
- External IP SANs require a 1Gbit or 10Gbit reserved network with a 10K RPM disk or better.

For more information about sizes, please see <u>"Review License and Sizing Conditions" on page 4</u>.

- A static IP for your SRA Virtual Appliance.
- A private DNS A-record resolving to the static IP of your SRA Virtual Appliance. A public A-record and a public IP are also required if public clients access the B Series Appliance. The DNS A-record is the fully qualified domain name (FQDN) of your site (access.example.com, for example).

**Note:** "Public clients" include any client software (browsers, BeyondTrust access consoles, endpoint clients, etc.) which connect from external networks and VPN(s) local to the B Series Appliance's network.

- A valid NTP server that is reachable by the B Series Appliance.
- Ensure that the system time between the host ESXi server and the guest BeyondTrust OS are in sync. Variations by only a few seconds can potentially result in performance or connectivity issues.

### **Deploy the SRA Virtual Appliance**

Administrators can deploy and configure the BeyondTrust SRA Virtual Appliance into their Nutanix AHV environment by following the steps below.

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- Open the email you received from BeyondTrust Technical Support, and click the Click Here for your BeyondTrust Virtual Appliance (Nutanix AHV) link to download the file. Save the file to an appropriate location to be uploaded to your Nutanix environment.
- 2. Log in to Nutanix AHV.

 Go to Menu > Virtual Infrastructure > Images and click Add Image to upload the BeyondTrust.qcow2 file to the image repository.

BeyondT	rust Download Available			
MS Be	eyondTrust Build System <mysupport< th=""><th>@beyondtrust.com&gt;</th><th></th><th></th></mysupport<>	@beyondtrust.com>		
1 Click here	to download pictures. To help protect your priva	acy, Outlook prevented automatic download of	f some pictures in this message.	
Greetings,				
Thank you	for choosing BeyondTrust for your	Secure Remote Access needs!		
Your Beyor	ndTrust Virtual Appliance is register	red in our systems for deploy.beyo	ondtrust.com and is ready for downle	oad.
To install a	nd configure this Virtual Appliance,	follow all of the instructions below	:	
The Beyo	ondTrust Virtual Appliance			
Download	your Beyond Trust Virtual Applia	nce		
<ul> <li>Click</li> </ul>	s here for your BeyondTrust Virtual s here for your BeyondTrust Virtual s here for your BeyondTrust Virtual	Appliance (Hyper-V and Azure)		
Deploy you	ur BeyondTrust Virtual Appliance	e in AWS		
Link	your AWS account(s) by clicking h	ere.		
BeyondTru	ust Virtual Appliance Setup			
° 2. Whe	w the appropriate installation guide BevondTrust RS Virtual Appliance I Privileged Remote Access Virtual A on prompted for the Appliance Licer all any available BeyondTrust updat	nstallation guide ppliance Installation guide ise Key (ALK), enter		
Contactir	ng BeyondTrust			
lf you need	additional assistance, please conta	act BeyondTrust Support.		
We look for	rward to serving you. If you have an	ny questions, don't hesitate to cont	act us at mysupport@beyondtrust.c	<u>com</u> .
Best Regar	rds,			
BeyondTru	st Support Team			
	lmages			rism
Add I	Image → Import Images	Actions ~		
Туре г	name to filter by			
Viewing	g all 229 Images			
Ο	▲ Name		Description	Ту
0	ZCHORA_LAG_METERA		-	Di

4. Click Next.

	<ol> <li>Select Image</li> </ol>	2 Select Loca	tion
Imag	e Source		
<ul> <li>Im</li> </ul>	age File 🛛 URL 🔍 VM Di	isk	
	+ /	Add File	
	Source: [LOCAL]\BeyondTrust.	000W <sup>2</sup>	Remove
	Source. (EGGAC)(Deyonands).	qcowz	Nemove
	Name	Type	
	BeyondTrust Appliance	Disk	*
	Description		
	Checksum		
			SHA-1 ~
			Cancel Next

Add Images

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- 5. Select the location for the image in your Nutanix cluster.
- 6. Click Save.
- 7. Go to Home > VM and select + Create VM.

- 8. In the **Create VM** dialog, select the desired CPU and Memory configuration for this Appliance.
- 9. Click Next.

<ul> <li>Seter targe</li> <li< th=""><th>Placement Method Place image directly on clusters This option is good for smaller environments. The image will be placed on all selected clusters below. Place image using image Placement policies This option is good for larger environments. It requires you to first set up image Placement policies between categories assigned to clusters and</th></li<></ul>	Placement Method Place image directly on clusters This option is good for smaller environments. The image will be placed on all selected clusters below. Place image using image Placement policies This option is good for larger environments. It requires you to first set up image Placement policies between categories assigned to clusters and
Prace image directly on clusters  This option is good for smaller environments. The image will be placed on all selected clusters below. Image image image Pracement policies  The option is good for larger environments. It requires you to first set up image Pracement policies between categories assigned to clusters and categories assigned to images. From there on, you only need to associate a relevant category to an image while uploading it here. Select Clusters  Select Clusters  Select Clusters  Categories assigned to images. From there on, you only need to associate a relevant category to an image while uploading it here.  Select Clusters  Select Clusters  A li clusters  Image:	Place image directly on clusters     This option is good for smaller environments. The image will be placed on all     selected clusters below.     Place image using Image Placement policies     This option is good for larger environments. It requires you to first set up     Image Placement policies between categories assigned to clusters and
The option is good for smaller environments. The image will be placed on all selected clusters below:	This option is good for smaller environments. The image will be placed on all selected clusters below. O Pace image using image Placement policies This option is good for larger environments. It requires you to first set up image Placement policies between categories assigned to clusters and
Transper Placement policies between categories assigned to clusters and categories assigned to images. From there on you only need to associate a relevant category to an image while uploading it here. Select Clusters al clusters al clusters al clusters TracLUSTERO: Create VM Create VM Create VM Configuration @ Resources @ Management @ Review ame BegondTrust Appliance Deployment ascription (Optional) uster TracLUSTERO1 : umber of VMs I M Properties	This option is good for larger environments. It requires you to first set up Image Placement policies between categories assigned to clusters and
Select the set of clusters to use for placement  All clusters  All clusters  Create VM  Create VM  Create VM  Create VM  Create VM  Create VM  Mereive  Create VM  Cr	
Al dusters      Name     NTXCLUSTER0      Create VM      Create VM      Create VM      Configuration ② Resources ③ Management ④ Review  ame  BeyondTrust Appliance Deployment  ascription  (Optional)  uster  I TXCLUSTER01 : Jamber of VMs  I  M Properties	Select Clusters
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ame BeyondTrust Appliance Deployment ascription (Optional) uster NTXCLUSTER01 : MProperties	Create VM
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scription (Optional) uster NTXCLUSTER01 * umber of VMs 1 M Properties	ame
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NTXCLUSTER01 : WTXCLUSTER01 : MProperties	
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umber of VMs 1 M Properties	
1 M Properties	
M Properties	
	1
PLI Cores Per CPLI Memory	M Properties
	PU Cores Per CPU Memory
2 🗘 vCPU 1 Cores 4 GB	

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10. Click Attach Disk.

- 11. Change **Operation** to **Clone from Image Source** and select the previously uploaded BeyondTrust image.
- 12. Click Add.
- 13. Click Attach Disk.

				Create	e VM					
	Dísks						Attac	:h Disk		
0	#	Type	Image		Size	Bus Type	Ad	tions		
	1	Disk	BeyondT Applianc		32 GiB	SCS	si 🍡	ŵ		
	2	Disk	-		100 GiE	scs	ii 🖌	ŵ		
	Network	s					Attach to S	Subnet		
	Subne	t	VLAN ID / VPC	Private	IP	Public IP	Ac	tions		
	it-lab1	06	106	Auto-/	Assign	None	1	ā		
	O Lega ● UEFI □ S	nfiguration .cy BIOS Mo Mode ecure Boot Vindows® D		tial Guar	d P			Next		
				Add	d Disk				?	×
Туре										
DI	SK									•
Oper										_
CI	one fro	m Image	e Service							•
Bus T	Type CSI									
Image	_									_
Be	eyondTi	rust 6.1.1								Ť
	(GiB) ⑦									
32 Pleas		hat chang	ing the size o	of an im	nage is no	ot allowe	d.			
Index	¢									
Ne	ext Ava	ilable								~
							Canc	el	Ad	d



Cancel

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14. Create a disk of at least 100GB.

For more information about sizes, please see <u>"Review License</u> and Sizing Conditions" on page 4.

- 15. Click Add.
- 16. Click the X next to the CD-ROM disk.

Add Disk	?	×
Туре		
DISK		•
Operation		
Allocate on Storage Container		•
Bus Type		
SCSI		•
Storage Container		
SelfServiceContainer (11.31 TiB free)		•
Size (GiB) 🕐		
100		
Index		
Next Available		•

17. Select UEFI under Boot Configuration.

- 18. Click the Attach to Subnet text button.
- 19. Select the desired network in the dropdown.
- 20. Click Add.

sks							Attac	h Disl	
# Typ	e	Image		Size		Bus Type	Ad	ions	
1 Dis	k	BeyondT Appliance		32 GiB		SCSI		ŧ	
2 Dis	k	-		100 Gil	3	SCSI		ŧ	
etworks						Att	ach to S	Subne	
Subnet	VLA	N ID / VPC	Private IP P		Publ	Public IP		Actions	
it-lab106	106		Auto-A	ssign	Nor	ie		亩	
oot Configura Legacy BIO UEFI Mode Secure	S Mode	der Credeni							

Create VM

0

Back

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- 21. Select UEFI Mode and click Confirm on pop-up.
- 22. Click Save.
- 23. Nutanix AHV begins deploying the BeyondTrust Appliance.
- 24. Wait for the appliance to deploy, then select the BeyondTrust Appliance and click **Power On**.

DISK		0001	£* .	<b>w</b>
Change Boot Co	nfiguration			
The disk image format is differ Legacy BIOS. By switching bet			> Sul	
make sure that you are booting image.	g from the co	rrect disk	,	ā
Cancel	Confirm			
BIO3 Mode				
Priority				
lt Boot Order (CD-ROM, Disk, Netw	ork)		÷	

### **SRA Virtual Appliance First Boot**

- In the virtual infrastructure client, browse to the VM folder you configured, and locate the new entry for the SRA Virtual Appliance. Right-click on this entry and then select **Open Console**.
- Click the play button to start booting your BeyondTrust SRA Virtual Appliance.

#### BeyondTrust Secure Remote Access

Initializing the kernel..

3. After your BeyondTrust SRA Virtual Appliance has finished booting, one or more IP addresses display.

**Note:** If you were unable to provide the Appliance License Key during deployment, press **Enter** to start basic configuration. **Selection 1** on the next menu screen allows you to manually enter the Appliance License Key. Then exit back to the main screen.

4. From a computer on the same network, open a web browser and browse to any of the IP addresses listed, followed by /appliance. If none of the IPs listed are accessible, see <u>"SRA Virtual Machine</u> <u>Console Administration" on page 38</u> to assign a usable IP address using the console interface. Otherwise, you are done with the VMware portion of the setup and can close the VMware console. 

 BrownerTrust 559 Ulrtual Reptiance

 Appinnes Liennes Kny: HCSB-H003B-MCSF22C011UlrSBAbdUSFM27MLMM4FB01

 To administre and start using this system, browne to any of:

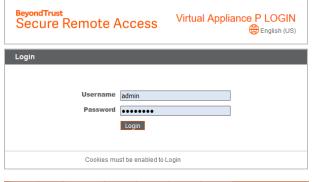
 https://DB.256/1.1/Appinnes/

 httttttttps://DB.256/1.1/Appinnes/

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### **Configure the SRA Virtual Appliance**

1. From the */appliance* interface of your BeyondTrust SRA Virtual Appliance, log in using **admin** as the username and **password** as the default password. You are prompted to change your password the first time you log in.



STATUS USERS NETWORKING STORAGE SECURITY UPDATES SUPPORT

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STATUS USERS NETWORK

- 2. Next, go to Networking > IP Configuration.
- 3. Under the NIC Configuration section, click Add New IP.
- 4. Enter the static IP address and subnet mask for your BeyondTrust Appliance B Series. You can decide if this IP addresses session traffic, web traffic, or both. Then click **Save Changes**.
- 5. Under the **Global Network Configuration** section, set your default gateway. Configuring DNS servers is not required but we highly recommend it. After entering the required information, click **Save Changes**.
  - **Note:** Valid DNS settings are required for failover and automatic updates to function properly. To help determine the appropriate IP and DNS configuration for your network, see <u>The BeyondTrust</u> <u>Appliance B Series in the Network</u> at <u>https://www.beyondtrust.com/docs/privileged-remote-</u> access/getting-started/deployment/dmz/index.htm.
- 6. Wait for the format to complete, and then go to **Status > Health** to verify that the needs of the SRA Virtual Appliance are being met.

*Enabled	V
*Network Port	eth0 v
*IP Version	IPv4 🗸
*IP Address	12.12.150
*Subnet Mask	255.255.255.0
Access Type	Allow Both
<ul> <li>Required</li> </ul>	Save Changes
WARNING: Change	is to the network settings should be made ONLY when the device is not in use by other users!
NOTE: When config the Certificates page	puring a new IP address, the Factory Default certificate configuration will be used. Once added, you may change the certificate configuration used for this IP on
ure certificates pay	16.
Global Network	Configuration
Hostn	amebomgar.com
IPv4 De	fault in the second s
Gate	way 10.1 Oshig Device Edito
IPv6 De Gate	
Custom	DNS 10.

	NOTE: Optional. Enter a list of IP addresses, one per line, to be used for DNS lookups.
Fallback to Public	5
DNS Servers	NOTE: If no DNS servers are configured above, or if they are unreachable, enabling this setting will cause the Secure Remote Access Appliance to use the
	publicly-available DNS servers from OpenDNS. For more information about OpenDNS, please visit www.opendns.com.
Respond to Ping	
NTP Server	dock.bomgar.com
	Last synchronized 755 seconds ago (+7.035ms offset)
	NOTE: This setting is used to keep the system clock in sync with an NTP time server. You may enter a single hostname or IP address. "clock borngar.com"
	is the default.
	Save Changes
	Sore charges

Hardwar	e Health		
	Value	Status	Notes
CPU	Count: 2 Model: Intel(R) Xeon(R) CPU E5-2697 v3 @ 2.60GHz Speed: 2593.993 MHz Reservation: 0 MHz Limit: Unimited	0	Consider allocating a CPU Reservation to this VM of at least 500 MHz to help maintain functionality with the hosts CPUs are under contention.
Memory	Physical: 3947 MiB Used: 3257 MiB Swap Used: 0 MiB Reservation: 0 MiB Limit: Unlimited Host Ballooning: 0 MiB Host Swapping: 0 MiB	0	<ul> <li>Consider allocating a Memory Reservation to this VM for the full amount of physical memory to avoid h swapping, which is detrimental to performance.</li> </ul>

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# BeyondTrust

#### 7. Go to Security.

8. Configure an SSL certificate, using one of the following four options. Follow the link for instructions for each option.

- Request a Let's Encrypt certificate, at https://www.beyondtrust.com/docs/privileged-remote- access/how-to/sslcertificates/create-ca-signed.htm#Lets\_ Encrypt.
- Import a CA signed certificate, key, and chain, at https://www.beyondtrust.com/docs/privileged-remoteaccess/how-to/sslcertificates/create-ca-signed.htm#Import.



- Create a CSR for a CA signed certificate and import the certificate and chain, at
   <a href="https://www.beyondtrust.com/docs/privileged-remote-access/how-to/sslcertificates/create-ca-signed.htm">https://www.beyondtrust.com/docs/privileged-remote-access/how-to/sslcertificates/create-ca-signed.htm</a>#Create\_CSR\_
  Import.
- Create a self-signed certificate, at <a href="https://www.beyondtrust.com/docs/privileged-remote-access/how-to/sslcertificates/create-self-signed.htm">https://www.beyondtrust.com/docs/privileged-remote-access/how-to/sslcertificates/create-self-signed.htm</a>. This option is not recommended, but may be used temporarily for testing.

For more information, please see "View SRA Virtual Appliance Health" on page 39.

### **URL reference**

https://access.example.com/login - User Administration

https://access.example.com/appliance - Appliance Administration

### **SRA Virtual Machine Console Administration**

After you have finished deploying your SRA Virtual Appliance, you can launch the virtual machine console to access some administrative functions.

The first screen of the virtual machine console lists the hostnames and IP addresses for this SRA Virtual Appliance.

Press **Enter** to view the configuration menu. From here, you can log in to make configuration changes, or use the support tunnel to enable BeyondTrust Technical Support to resolve complex issues with your B Series Appliance.



### **Configuration Options**

Logging in provides additional configuration options. You can update your network settings, allow an advanced support tunnel, shut down or reboot the SRA Virtual Appliance, or reset the B Series Appliance password or a site's administrative password.

The **Networking** option allows you to manage the hostname, IP addresses, the default gateway, static routes, and DNS servers.

Select a network interface to manage its speed or duplex communication. From here, you also can add or edit IP addresses.

Model: br.v.2 Appliance License Key: B6C39-D0038-98C77-2FC20 Hostname: localhost	
1 - Login 2 - Advanced Support Tunnel 3 - Exit	
Selection: 1 Isername: admin Password:	
Main Menu	
Model: br.v.2 Appliance License Key: B6C39-D003B-9AC77-2FC20 Hostname: localhost	
1 - Inclusive long 2 - Schwarzen Gauppert, Turmel 3 - Schwart Hole, diversion - Schwart Hole, diversion - Schwart, Grien Schwin 6 - Noret, Grien Schwin - Costi	

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## **View SRA Virtual Appliance Health**

The **Status > Health** page in the /appliance administrative interface offers information to help you ensure efficiency from your BeyondTrust SRA Virtual Appliance installation. The information presented can help you solve problems you may encounter with your SRA Virtual Appliance.

Real-time information displays in three categories: **CPU**, **Memory**, and **Storage**. For each category, the item's **Value**, **Status**, and any associated **Notes** are listed.

**Value** displays the specific CPU, Memory, and Storage parameters associated with your SRA Virtual Appliance installation.

	Hardware Health					
Value	Status	Notes				
Count: 2 Model: Intel(R) Xeon(R) CPU E5-2697 V3 @ 2.60GHz Speed: 2593.993 MHz Reservation: 0 MHz Limit: Unlimited	0	Consider allocating a CPU Reservation to this VM of at least 500 MHz to help maintain functionality whe the hosts CPUs are under contention.				
Physical: 3947 MiB Used: 3257 MiB Swap Used: 0 MiB Reservation: 0 MiB Limit: Unlimited Host Ballooning: 0 MiB Host Swapping: 0 MiB	0	<ul> <li>Consider allocating a Memory Reservation to this VM for the full amount of physical memory to avoid he swapping, which is detrimental to performance.</li> </ul>				

Status displays green check, blue exclamation mark, or red X icons to help you quickly assess your installation's performance.

Notes are displayed when changes are recommended, or installation errors have occurred.

#### **Status Icons**



A green check icon shows you at a glance that a certain category is sufficiently configured for optimal SRA Virtual Appliance performance.

A blue exclamation mark indicates that you may need to make changes to improve performance. Suggested changes are listed in the adjacent **Notes** column.



A red X icon alerts you to a memory error situation that could cause disruptions for your SRA Virtual Appliance. The suggested changes to correct the issue associated with a red X are listed in the adjacent **Notes** column and may require you to contact BeyondTrust Technical Support.

## Migrate Sites and Licenses to a New BeyondTrust SRA Virtual Appliance

Existing sites and licenses can be migrated to a new BeyondTrust SRA Virtual Appliance using the built-in site migration tool. A manual process is also available.

BeyondTrust offers a variety of implementation service packages that provide customized migration planning and upgrade assistance. For more details, please contact your account manager.

Your existing SRA Virtual Appliance must be running a recent software version. Older versions must be upgraded before migrating.

**Note:** If you are migrating to Atlas Cloud, please contact <u>www.beyondtrust.com/support</u> for assistance.

For more information about installation, please see <u>SRA Virtual Appliance Installation</u> at <u>https://www.beyondtrust.com/docs/privileged-remote-access/getting-started/deployment/virtual-sra/index.htm</u>.

For more information about upgrading, please see <u>Upgrade the BeyondTrust Privileged Remote Access Software</u> at <u>https://www.beyondtrust.com/docs/privileged-remote-access/updates/upgrade/index.htm</u>.

### **Use the Site Migration Tool**

- 1. Log in to the /login interface of your current SRA Virtual Appliance.
- 2. Click on Management in the left menu.
- 3. Click on the Software tab.
- 4. Scroll down to Site Migration.
- 5. Read and review the conditions and instructions there, including steps to follow after the migration is complete. Post-migration steps can be reviewed again after the migration.
  - The site address and API account provided are used to download a backup from the source site and restore it onto this site
    automatically. The provided API account must have read-only or higher access to the command API, as well as permission
    to use the backup and vault encryption key APIs.
  - Recordings are not included as part of this migration. If you need to retain access to existing recordings you can either keep the source appliance online with a different hostname or use the integration client to back up the recordings before doing the migration.
  - The site must be a BeyondTrust Privileged Remote Access site.

#### SITE MIGRATION

Migrate all configuration and data from another site to this one. The site address and API account provided will be used to download a backup from the source site and restore it onto this site automatically. The provided API account must have read-only or higher access to the command API, as well as permission to use the backup and vault encryption key APIs.

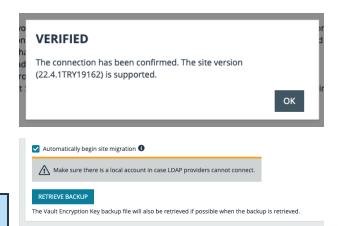
Recordings are not included as part of this migration. If you need to retain access to existing recordings you can either keep the source appliance online with a different hostname or use the integration client to backup the recordings before doing the migration.

The site must be a BeyondTrust Privileged Remote Access site.

- Once the migration is complete, you will need to update the DNS of your primary hostname to point to this appliance to complete the migration process and allow clients to connect to this instance and upgrade.
  - 1. Create a new DNS entry for the hostname that you would like to use to access the old site. You may not use the original BeyondTrust Privileged Remote Access hostname shown in the Status page of /login.
  - 2. In the old site's Management > Site Configuration, add the new hostname address under HTTP. This step ensures that the old site will respond appropriately to the new hostname.
  - 3. After the DNS entries are propagated, confirm that you can access the old site under the new hostname.
  - 4. Swing the DNS entries to point to this site instead of the old site.
  - 5. Wait for all DNS entries to finish propagating across the networks from which your clients resolve those addresses.
  - 6. From the old site's Status page, click the "Restart Software" button to trigger all clients to reconnect to your new site and begin upgrading themselves.

Required field					
Hostname •					
OAuth Client ID •					
OAuth Client Secret •					
RESET VERIFY CONNECTION					

- 6. Enter the Hostname, OAuth Client ID, and OAuth Client Secret.
- 7. Click Verify Connection.
- 8. Once the connection is verified, click **OK**. If the connection does not verify, review the connection information that was entered.

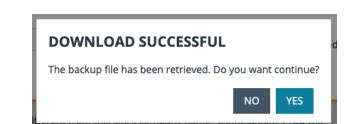


9. Check **Automatically begin site migration** to start the migration after downloading the backup files. Uncheck to manually confirm each backup file.

**Note:** Make sure there is a local account in case LDAP providers cannot connect.

#### 10. Click Retrieve Backup.

11. If the migration is not automatic, a series of pop-up notifications require confirmation for each download.



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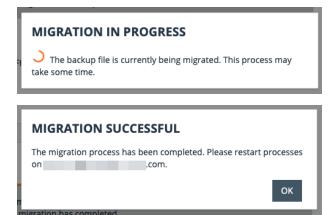
12. Click **OK** on the last download.

VAULT ENCRYPTION KEY DOWNLOAD SUCCESSFUL	
The Vault Encryption Key file has been retrieved.	
	ок

13. Click Migrate Site. Review the notification and click Continue.

	S Verified
OAuth Client Secret •	© Verified
RESET VERIFY CONNECTION	
The source site's company name "elam224pam" need to re-deploy all connection agents after m	is different from this site's company name "elam232pam". You will
Company Name	ARE YOU SURE?
Bearer Token	Existing data on this site will be overwritten by the backup. Migration can take some time. If the process is interrupted then it will need to be restarted.
Appliance Version 22.4.	CANCEL CONTINUE
Automatically begin site migration	
Backup Filename	.nsb
Vault Encryption Key Filename	.nsb
MIGRATE SITE	
Make sure there is a local account in case LDAP	providers cannot connect.

- 14. Pop-up notifications advise that the migration is in progress, and when it is complete.
- 15. Click **OK** on the **Migration Successful** notification.

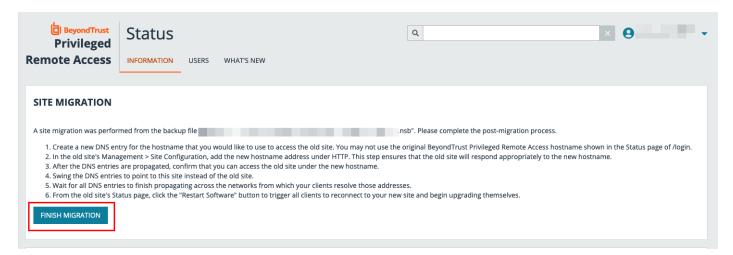


16. Once the migration is complete, you must update the DNS of your primary hostname to point to this appliance. This will complete the migration process, and allow clients to connect to this instance and upgrade. The required steps display on the screen.

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- a. Create a new DNS entry for the hostname that you would like to use to access the old site. You may not use the original BeyondTrust Privileged Remote Access hostname shown in the Status page of /login.
- b. In the old site's **Management > Site Configuration**, add the new hostname address under HTTP. This step ensures that the old site responds appropriately to the new hostname.
- c. After the DNS entries are propagated, confirm that you can access the old site under the new hostname.
- d. Swing the DNS entries to point to this site instead of the old site.
- e. Wait for all DNS entries to finish propagating across the networks from which your clients resolve those addresses.
- f. From the old site's **Status** page, click **Restart Software** to trigger all clients to reconnect to your new site and begin upgrading themselves.



#### 17. Click Finish Migration.

18. A pop-up notification confirms the migration is complete.

SITE STATUS		
Primary Hostname Company/Division Name	API Version 1.22.2 Supported ECM Protocol Version(s) 1.6, 1.5	Time Zone US/Pacific V Total Active Jump Clients Allowed
Company API Name Product Name BeyondTrust Privileged Remote Access	Appliance GUID POST-MIGRATION COMPLETE Site migration has been completed.	10,000 Total Passive Jump Clients Allowed 90,000 Maximum Concurrent Users 10
Product Version 23.2.1 Product Build	OK System Time Wed, Jan 4, 2023 2:12 PM PST	Endpoint Licenses 500 Endpoints Configured 8 DOWNLOAD LICENSE USAGE REPORT
RESTART PRIVILEGED REMOTE ACCESS SOFTWARE		DOWNLOAD LICENSE OSAGE REPORT
CLIENT SOFTWARE		

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### **Manual Site Migration**

Manually migrating your sites and licenses to a new BeyondTrust SRA Virtual Appliance can vary by environment, individual case preferences, and setup conditions. The steps below represent the most common requirements.

#### Back Up the Current SRA Virtual Appliance Configuration

Follow the steps below to make a backup of your current SRA Virtual Appliance configuration:

- 1. Log in to the /login interface of your current SRA Virtual Appliance.
- 2. Click on Management in the left menu.
- 3. Click on the **Software** tab.
- 4. Enter and confirm a **Backup Password**, if desired.
- 5. Leave Include logged session reporting data checked.
- 6. Click Download Backup. If you did not enter a backup password, you are prompted to confirm you want to proceed without one.
- 7. Save the backup file to a secure location.

#### Export the Existing SSL Certificate Chain from Your Current SRA Virtual Appliance

Next, export your existing SSL certificate chain from your current SRA Virtual Appliance:

- 1. Log in to the */appliance* interface of your current SRA Virtual Appliance.
- 2. Browse to the Security tab, the Certificates sub-tab, and then the Certificates section.
- 3. Check the box next to your correct BeyondTrust site certificate.
- 4. Select Export from the Select Action dropdown box, and click Apply.
- 5. On the next screen, choose ALL options: Include Certificate, Include Private Key, and Include Certificate Chain (if available).
- 6. Click the Export button.
- 7. Save this file to a secure location.

#### Install the New Software Version

Use the directions in the BeyondTrust SRA Virtual Appliance Installation Kit to install the software in your virtual environment. These include instructions on how to access the /appliance web interface via an IP address.

*Note:* You must allocate storage space before booting your BeyondTrust SRA Virtual Appliance.

You must install Base software update(s) on the new SRA Virtual Appliance. There is a separate email containing instructions on how to install and update the Base software for the new SRA Virtual Appliance. The Base software is tied to the new SRA Virtual Appliance serial number.

Locate the SSL chain exported earlier, and import it into the SRA Virtual Appliance.

- 1. To do this, log in to the /appliance interface of your new SRA Virtual Appliance.
- 2. Click the Security tab, then the Certificates sub-tab.
- 3. Select Import.

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- 4. Browse to the certificate file that you previously exported, and click Upload.
- 5. Mark this as the default certificate by clicking the radio button in the right hand column of the Certificate description.

#### Install a License Package

Once the previous steps are completed, install the Privileged Remote Access software following the steps in the Privileged Remote Access Upgrade Guide at <a href="https://www.beyondtrust.com/docs/privileged-remote-access/updates/upgrade/index.htm">https://www.beyondtrust.com/docs/privileged-remote-access/updates/upgrade/index.htm</a>.

- If the SRA Virtual Appliance has internet access, follow the steps for automatic updates.
- If the SRA Virtual Appliance does not have internet access, follow the steps for manual updates.

You now should have a functioning support portal and be able to access the /login interface to create user accounts and manage other settings.

1. For your first login, use the credentials emailed with the license information.



**Note:** If you are trying to reach /login by using the IP address and not the hostname, you need to mark the new site as the default site. This setting is located at /**appliance > Status > Basics > Default Site**.

- 2. Once logged in, click Management, then Software Management.
- Click Choose File and locate the backup file you created at the beginning of the process. A warning appears to remind you that you also need to provide a Vault key backup if you are restoring a configuration containing Vault credentials onto a new SRA Virtual Appliance.
- 4. Click Yes, and then click Upload Backup.
- 5. Next, update the DNS record and confirm login.
  - Update the DNS A-record to route BeyondTrust site traffic to the IP address of the new SRA Virtual Appliance.
  - Log in to your access console and allow it to update (if applicable for your situation).
  - Test by starting a access session.

Note: DNS changes can take up to 72 hours to propagate.

To migrate currently deployed Jump Clients over to the new SRA Virtual Appliance, you must power down the old SRA Virtual Appliance.

If you need technical assistance, please visit www.beyondtrust.com/support to request a live support session.

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## **SRA Virtual Appliance Frequently Asked Questions**

The following are some of the questions frequently asked about administering the SRA Virtual Appliance and answers to these questions from BeyondTrust Technical Support.

#### VMware

#### Can I Install VMware Tools Onto My BeyondTrust SRA Virtual Appliance?

The BeyondTrust SRA Virtual Appliance ships with the VMware guest tools pre-installed.

# Can a Time Skew Between My ESXi Host and My BeyondTrust SRA Virtual Appliance Cause Connectivity Issues?

Yes, any time difference between the BeyondTrust SRA Virtual Appliance and the host ESXi server can cause connectivity issues. To prevent this, specify a valid NTP source in the SRA Virtual Appliance /appliance interface as well as ensuring that your ESXi host is using a valid NTP source. VMware also has an option to sync the guest OS time with the host ESXi server time. If you use this option, then the NTP source within the BeyondTrust SRA Virtual Appliance does NOT need to be set. It is recommended to use one method or the other but NOT both together.

# What Version of VMware is Supported to Host the BeyondTrust SRA Virtual Appliance?

BeyondTrust certifies support for VMware vCenter 6.5+, Virtual Hardware Version 13+.

## Does the BeyondTrust SRA Virtual Appliance Require Reserved Resources in VMware?

For troubleshooting purposes, a BeyondTrust Technical Support representative may require the BeyondTrust SRA Virtual Appliance to have reserved resources to effectively diagnose a support issue.

#### **Does BeyondTrust Support Using the VMware Snapshot Functionality?**

BeyondTrust supports the use of the snapshot technology only in upgrade situations. A snapshot of a powered-off BeyondTrust SRA Virtual Appliance can be taken prior to an upgrade and can be utilized as a fallback in the case of a failed upgrade.

Note: BeyondTrust does not recommend or support taking snapshots of actively running SRA Virtual Appliances.

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# Can I Run the BeyondTrust SRA Virtual Appliance in My Clustered VWware Environment?

Yes, when installed in a vSphere cluster, the BeyondTrust SRA Virtual Appliance can benefit from many of VMware's value-added technologies, such as VMotion, DRS, and HA, to maximize performance and uptime.

#### Can I Specify an Alternate Disk for Recordings?

Yes, in some cases you may want to separate the disks for recordings if your VMware environment has tiered storage. Add a third disk to your BeyondTrust SRA Virtual Appliance and reboot. Once the BeyondTrust SRA Virtual Appliance is rebooted, the third disk is provisioned and used for recordings.

#### The Virtual Hardware of My BeyondTrust SRA Virtual Appliance is Currently on an Old Version and Needs to be Upgraded. What Are BeyondTrust's Recommendations for Virtual Hardware Version Upgrades?

BeyondTrust certifies support for VMware vCenter 6.5+, Virtual Hardware Version 13+.

If your configuration does not match one of the above configurations, BeyondTrust does recommend updating the virtual hardware version of your BeyondTrust SRA Virtual Appliance.

#### What is the Error: "The OVF certificate file is invalid"?

When importing a new BeyondTrust SRA Virtual Appliance to VMware using the OVA installation package, it is possible for VMware to return an error stating "The OVF certificate file is invalid". This happens when attempting to import the OVF file which is packaged inside the B Series Appliance's .ova file. This would require extracting the contents of the OVA package, and this would invalidate the package as a whole. To resolve this, re-download the OVA file and re-import it without extracting the OVA. If using Internet Explorer, it may be necessary to replace **.tar** with **.ova** in the download's file extension.

### Should the Second Virtual Disk Use Thick or Thin Provisioning?

In current versions, the OVF template automatically chooses thick provisioning for the second and (if present) third virtual disk(s).

According to ESXi and vCenter Server 5 Documentation, thin provision initially allocates only the space actually needed by the virtual machine and grows dynamically as needed. In contrast, both forms of thick provisioning allocate all the assigned disk space to the virtual machine upon creation, locking it from use by other machine (see "About Virtual Disk Provisioning Policies" in the ESXi and vCenter Server 5 Documentation under vSphere Virtual Machine Administration > Configuring Virtual Machines > Virtual Disk Configuration in the vSphere Documentation Center at vmware.com/support/pubs/). Although the B Series Appliance is expected to operate correctly with thin provisioning, this is not the preferred choice.

#### Why Does the Virtual Applance Download Come as a TAR File?

When using Internet Explorer, BeyondTrust's OVA installer may download as a *BeyondTrust-br.v.2.tar* file instead of *BeyondTrust-br.v.2.ova*. To install the file per the SRA Virtual Appliance Setup Guide, replace the **.tar** extension with **.ova** and follow the guide as normal.

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#### Can the Virtual Hard Disks be Stored in Multiple Datastores?

Some customers with BeyondTrust SRA Virtual Appliances may be interested in distributing the various SRA Virtual Appliance disks across multiple VMware datastores. BeyondTrust does support this configuration, so we expect our B Series Appliances to work satisfactorily when their virtual drives are located in different datastores from one another.

### Hyper-V

# What Version of Hyper-V is Supported to Host the BeyondTrust SRA Virtual Appliance?

BeyondTrust certifies support of Hyper-V on Windows Server 2012 R2, Windows Server 2016, and Windows Server 2019. We support both a stand alone Hyper-V server and Windows Server with the Hyper-V Role installed.

#### Does BeyondTrust Support Using the Hyper-V Snapshot Functionality?

BeyondTrust supports the use of the snapshot technology only in upgrade situations. A snapshot of a powered-off BeyondTrust SRA Virtual Appliance can be taken prior to an upgrade and can be utilized as a fallback in the case of a failed upgrade.

#### Can I Specify an Alternate Disk for Recordings?

Yes, in some cases you may want to separate the disks for recordings if your Hyper-V environment has tiered storage. Add a third disk to your BeyondTrust SRA Virtual Appliance and reboot. Once the BeyondTrust SRA Virtual Appliance is rebooted, the third disk is provisioned and used for recordings.

#### The Virtual Hardware of My BeyondTrust SRA Virtual Appliance is Currently on an Old Version and Needs to be Upgraded. What Are BeyondTrust's Recommendations for Virtual Hardware Version Upgrades?

For Hyper-V, BeyondTrust supports only Generation 2 virtual machines at this time. The VA image is delivered as a Generation 2 VM.

If your configuration does not match the above configuration, BeyondTrust does recommend updating the virtual hardware version of your BeyondTrust SRA Virtual Appliance.

### **Microsoft Azure**

#### Is the Azure Classic Deployment Model Supported?

No. The only supported model is Azure Resouce Manager (ARM).

# Do I Need to Configure the Windows PowerShell Script Differently if I Have a Premium Storage Account?

Yes. If you have a premium storage account, you need to modify the **vmSize** information in **STEP 2** of the script to indicate **Premium** along with the applicable size.

# Can I Use Any Additional Azure Features Provided by Using Azure Linux Agent with My BeyondTrustSRA Virtual Appliance?

BeyondTrust does not support any of these features at this time.

# Do I Need to Enter My Public IP Anywhere in the BeyondTrust /appliance Interface?

No. The Azure network layer maps the public IP to the private IP. The BeyondTrustSRA Virtual Appliance assigns the private IP using DHCP.

#### Is Failover Needed? Is Failover Supported for Microsoft Azure?

Although the risk for downtime is much lower within Azure, it is still possible to need a failover B Series Appliance. Failover is supported in Azure; however, IP sharing does not work with Azure networking. A DNS swing is needed to failover to a backup B Series Appliance.

#### Do I Need a Static IP for My BeyondTrust SRA Virtual Appliance?

Assigning a static IP is the easiest way to ensure there are not any DNS issues across reboots and also to make sure any integration points that require an IP address work properly. However, assigning a CNAME record for your B Series Appliance's DNS entry should suffice for most deployments.

### **General Issues**

#### Can an Evaluation SRA Virtual Appliance be Converted to Production?

Yes, the existing SRA Virtual Appliance can be converted to production.

Once the SRA Virtual Appliance licenses are purchased, confirm your intent to convert to production with your Account Manager.

#### Can Available Resources be Modified?

It is possible to add additional resources to a BeyondTrust SRA Virtual Appliance, and it is possible to decrease available memory and CPU cycles; however, it is not possible to decrease available storage safely, and none of the above should be done when the B Series Appliance is powered on. After shutting down the B Series Appliance and making your changes, the B Series Appliance should recognize the changes upon next boot.

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SRA Virtual Appliances have either two or three virtual hard disks, depending on which configuration was selected during deployment: Small, Medium, or Large. Small and Medium deployments have two disks, while Large deployments have three. The first disk is used for the root of the operating system in all three cases while the second disk is used for /login site data and recordings in Small and Medium deployments.

In Large deployments, recordings are moved from the second disk to the third. If your SRA Virtual Appliance was originally deployed with two virtual hard disks, you can add a third later, and the B Series Appliance automatically stores session recordings on the third disk. The B Series Appliance cannot use more than three disks.

- 1. Shut down the BeyondTrust SRA Virtual Appliance.
- 2. Adjust the RAM and/or CPU allocation and/or increase the disk space using VMware.
- 3. Power on the BeyondTrust SRA Virtual Appliance.

#### Can the SRA Virtual Appliance Fail Over to a Slower Storage Tier?

Organizations may choose to present storage to SRA Virtual Appliances by means of tiered storage in a SAN. "Fast-tier 1" storage typically refers to arrays which employ SSD technology for frequently accessed data, and "slow" storage typically refers to data placed on technologies such as SAS, NL-SAS, or SATA. Either of these work with BeyondTrust, but certain storage configurations are not supported when using two B Series Appliances in failover.

In cases where the primary SRA Virtual Appliance has storage in SSD / tier-1 storage, these rules apply to the backup B Series Appliance:

- · Large SRA Virtual Appliances must be provisioned with storage of the same tier.
- Small and Medium SRA Virtual Appliances may have lower tier storage if it is backed by 10K or 15K disks.
- No backup SRA Virtual Appliance may have less than 10K / 15K disk storage speed.

The exact specs for Small, Medium and Large are described in the product specific deployment sections of this document. It is important to note that BeyondTrust does not require any particular tier for a SRA Virtual Appliance to boot and function in isolation. Tiered storage becomes a concern only when two B Series Appliances are used in failover.

#### Is Cloning SRA Virtual Appliances Supported?

After a BeyondTrust SRA Virtual Appliance is installed in an ESX or ESX environment, the administrator may wish to clone the B Series Appliance. Cloning a virtual machine creates a duplicate of the virtual machine with the same configuration and installed software as the original. This feature of ESX and ESX is not supported by the BeyondTrust SRA Virtual Appliance at this time.

#### Does the SRA Virtual Appliance Support vCenter Site Recovery Manager (SRM)?

vCenter's Site Recovery Manager (SRM) builds off of vSphere Replication to provide disaster recovery. Administrators running BeyondTrust in a vCenter system may be interested in leveraging this with BeyondTrust SRA Virtual Appliances. While BeyondTrust is expected to work with vCenter SRM, restoring from a replication like this would appear to the B Series Appliance like pulling the power cable, so there would be a risk for file system corruption, which may result in potential data loss.

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