

Barracuda Backup Vx

Virtual Appliance Deployment

White Paper

Document Scope

This document provides guidance on designing and deploying Barracuda Backup Vx on VMware vSphere and Microsoft Hyper-V platforms.

VMware and Hyper-V System Requirements

Barracuda offers the following types of images for the Barracuda Backup Vx deployment. Follow the instructions for your hypervisor to deploy the Barracuda Backup Vx appliance.

IMAGE TYPE	SUPPORTED HYPERVISORS
OVF	VMware ESX and ESXi (vSphere Hypervisor) versions 4.x, 5.x, and 6.x
VHD	Microsoft Hyper-V 2008, 2008 R2, 2012, 2012 R2, and 2016

CPU and RAM System Requirements

The most common mistake when designing an environment for Barracuda Backup Vx is to size only for capacity as opposed to sizing for capacity and performance. Tasks such as backup, offsite replication, data restoration, and purging can use a significant amount of system resources. When considering a Barracuda Backup virtual deployment, it is best to consider the use cases of the Backup Vx in addition to needed storage.

vCPU Recommendations

BACKUP VOLUME	MINIMUM RECOMMENDED	HIGH PERFORMANCE	
DACKOF VOLUME	vCPUs	RECOMMENDED vCPUs	
0 to 2 TB	1 vCPU	2 vCPUs	
2 to 6 TB	2 vCPUs	4 vCPUs	
6 to 16 TB	4 vCPUs	8 vCPUs	
16 to 32 TB	8 vCPUs	16 vCPUs	
32 to 100 TB	16 vCPUs	32 + vCPUs	

RAM Recommendations

BACKUP VOLUME	MINIMUM	HIGH PERFORMANCE
BACKOF VOLOME	RECOMMENDED RAM	RECOMMENDED RAM
0 to 1 TB	2 GB	4 GB
1 to 4 TB	4 GB	8 GB
4 to 12 TB	8 GB	16 GB
12 to 16 TB	16 GB	32 GB
16 to 24 TB	32 GB	64 GB
24 to 48 TB	64 GB	128 GB
48 to 100 TB	128 GB	256+ GB

Storage System Requirements

- 1. Any storage infrastructure consisting of Local/Direct-Attached, SAN, and NAS.
- 2. Storage with inadequate throughput, read, and write speeds will suffer.
- 3. Servers with software RAID, slow NAS, and low-RPM drives will yield poor performance.

Technical Notes

- 1. Barracuda Backup utilizes memory (RAM) for database queries during backup, restore, and offsite replication. Barracuda highly recommends following the recommended minimum resources for memory in the RAM Recommendations table above.
- 2. Barracuda uses CPU resources for hashing blocks during deduplication, compression for offsite replication, and rehydration of data during restoration. Barracuda highly recommends following the recommended minimum resources for vCPUs in the vCPU Recommendations table above.
- 3. At minimum, memory resources should be dedicated (reserved). It is also recommended that the CPU be dedicated to Barracuda Backup Vx, and not shared with other virtual machines on the host. This aligns with VMware and Microsoft's recommendations for virtualized Microsoft Exchange Server and SQL Server implementations.
- 4. A separate data store is recommended for use with the virtual appliance due to disk I/O constraints or an entirely separate storage server/environment altogether from the production environment.
- 5. Other system components such as network and storage need to be sized accordingly to prevent them from becoming a bottleneck.
- 6. It is important that snapshots are not used on the Barracuda Backup Vx appliance. Even if data is not being replicated to the Barracuda Cloud, configuration data is still sent to Barracuda so that the unit can be managed. Reverting to a previous state using snapshots can potentially cause loss of data and unit corruption. Independent disks are the default selection and highly recommended to avoid snapshots.
- 7. All Backup Vx disk, vCPUs, and RAM can be adjusted later by shutting down the system properly and making the necessary changes through the hypervisor.

VMware vSphere Deployment

- 1. Download and extract the Barracuda Backup Vx .zip archive to a location that can be accessed from a machine running vSphere.
- 2. Launch vSphere Client, and from the File menu, click **Deploy OVF Template:**

File	Edit View Inventory Adminis
	New
	Deploy OVF Template
	Export +
	Report +
	Browse VA Marketplace
	Print Maps
	Exit

- 3. The vSphere Client launches the Deploy OVF Template wizard.
- 4. Click **Browse...**, navigate to the extracted folder, and locate the Barracuda Backup Vx OVF file (e.g., BarracudaBackupService-vm4.2.4-fw6.2.00.10159-20150807-5x.ovf). Click **Next:**

Ø		Deploy OVF Template – 🗆 🗙		
OVF Template Details Verify OVF template de	tails.			
Source OVF Template Details End User License Agreemer	nt Product:	Barracuda Backup for Product		
Name and Location Host / Cluster	Version:	20150807		
Resource Pool Disk Format	Vendor:	Barracuda Networks, Inc.		
Ready to Complete	Publisher:	No certificate present		
	Download size:	1011.2 MB		
	Size on disk:	1011.0 B (thin provisioned) 50.0 GB (thick provisioned)		
	Description:	Barracuda Backup is a complete cloud-integrated solution for protecting physical and virtual environments, providing full local		

- 5. In the wizard, complete the following:
 - Review appliance information and correct ESX version.
 - Accept the Barracuda end user license agreement.
 - Name the appliance and define a location where the virtual machine is to be created.
 - Select the data store where the VMDK file is to be stored (a dedicated data store is recommended).
 - Select the disk format as Thick Provisioned Lazy Zeroed.
 - Review your settings, and then click **Finish** to deploy the appliance.
- 6. After deployment is complete, locate the appliance within the appropriate data center, host, or resource pool.

Allocate Space for the Virtual Machine

- 1. With the virtual machine powered off, right-click the appliance and choose Edit Settings...
- 2. Edit the **CPU**, **Memory**, and **Hard disk 1 Provisioned Size** settings as defined in the "Sizing" section above.

Note: It is recommended that "Thick Provision Lazy Zeroed" is used for the disk provisioning and "Independent (Persistent)" for the Mode. These options, chosen by default, are recommended to achieve the best performance from your virtual appliance and to prevent snapshots from occurring.

Barracuda Backup TME - V	irtual Machine Properties 🛛 🗕 🗖 🗙
Profiles vServices	Virtual Machine Version: 8
Add Remove	Disk File [datastore 1] Barracuda Backup TME/Barracuda Backup TME.
Summary 4096 MB 2 Video card Restricted Paravirtual Virtual Disk VM Network	[datastore 1] Barracuda Backup TME/Barracuda Backup TME. Disk Provisioning Type: Thick Provision Lazy Zeroed Provisioned Size: 1 → TB ▼ Maximum Size (GB): 19327.44 Virtual Device Node
	OK Cancel
	Profiles vServices Add Remove Add Remove V096 MB 2 Vidco card Restricted Paravirtual Virtual Disk

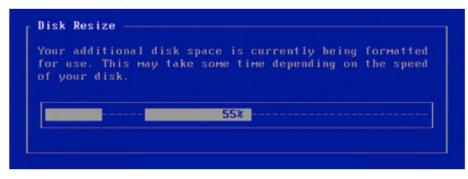
- 3. Once the hardware settings have been defined, **power on** the virtual appliance.
- 4. The Barracuda Backup appliance will be prepared for use— this may take several minutes.

ur virtual appli	iance is being pre	pared for use. This
y take some time	e depending on the	speed of your disk.
	72%	
	1 67	

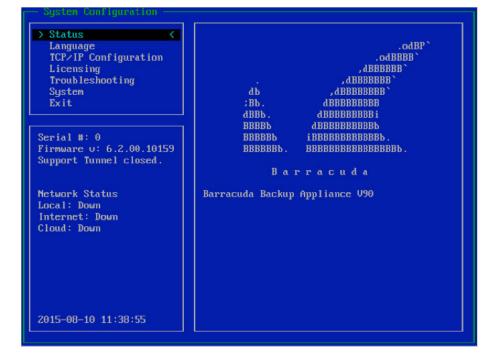
5. Using your keyboard arrows, select **Yes** to format and partition the additional disk space you provisioned in step 2 above.

used for storing data	pace has been detected that can be on your Barracuda Virtual Appliance.
cannot be undone. It is snapshot now. NOTE: Th	and use it? WARNING: This action s STRONGLY suggested that you take a is operation may take a very long time
(up to 974 minutes).	

6. The Barracuda Backup Vx expands and formats its partition space.



7. Once the formatting has completed, the appliance will reboot and display:



Go to the Open Firewall Ports section on page 10 to continue the VMware configuration.

Microsoft Hyper-V Deployment

- 1. Download and extract the Barracuda Backup Vx .zip archive to a location that can be accessed from a machine running Hyper-V.
- 2. In Hyper-V Manager, right-click your VM host, select Import Virtual Machine, and click Next.
- 3. Navigate to and select the **HyperV** folder from within the .zip archive that you extracted in step 1, then click **Select Folder**, then click **Next**.

)	Select Fo	older		×
🔄 💿 🥆 🕆 鷆 🕨 Bar	ra > BarracudaBackup-vm4.2	• • ¢	Search Barracu	daBackup-vm4 🔎
Organize 🝷 New folder				1= - 🔞
🖀 Microsoft Managemer	Name	D	ate modified	Туре
☆ Favorites	🎉 HyperV	8/	7/2015 3:14 PM	File folder
Downloads Recent places This PC				
🗐 Recent places				
🗐 Recent places	٢	Ш		2

4. Select the virtual machine to import and click **Next.**

	Import Virtual Machine			x
Select Virtua	al Machine			
Before You Begin	Select the virtual machine t	to import:		
Locate Folder	Name	•	Date Created	
Select Virtual Machine Choose Import Type Summary	Barracuda Backup Service	2	6/17/2014 4:11:15 PM	
		< Previous Ne	xt > Finish Can	cel

5. Select the import type as **Copy Virtual Machine (create a new unique ID)** and click **Next.**

<u></u>	Import Virtual Machine	x
Choose Ir	nport Type	
Before You Begin Locate Folder	Choose the type of import to perform: O Register the virtual machine in-place (use the existing unique ID)	
Select Virtual Machine Choose Import Type Summary	 Restore the virtual machine (use the existing unique ID) Copy the virtual machine (create a new unique ID) 	

6. Select the default location for configuration files, storage, and network settings for the VHD, or define custom settings, and then click **Next**, and then click **Finish**.

2	Import Virtual Machine		
Completing I	import Wizard		
Before You Begin	You are about to perform the following	operation.	
Locate Folder Select Virtual Machine	Description:		
Choose Import Type Choose Destination Choose Storage Folders Connect Network Summary	Virtual Machine: Import file: Import Type: Virtual machine configuration folder: Checkpoint folder: Smart Paging file store: Virtual hard disk destination folder: Network connection:	Barracuda Backup Service C: Users \Administrator \Desktop \BarracudaBackupService-vm4. Copy (generate new ID) D: \Configurations \ D: \Configurations \ D: \Configurations \ D: \VHD \ Intel(R) 82574L Gigabit Network Connection - Virtual Switch	
< III To complete the import and close this wizard, click Finish. < Previous Next > Finish Cancel			

- 7. Before powering on the virtual machine, right-click on the Barracuda Backup Vx, choose Settings, and define the "Memory and Processor" settings as specified in the "Sizing" section above.
- 8. Click on Hard Drive, under Virtual hard disk click the Edit button.

) Setting	s for Ba	arracuda Backup Servio	e on WIN-I	0J219586VL	
Barracuda Backup Service	~	■ ■ Q.			
* Hardware	^	🕞 Hard Drive			
Add Hardware BIOS Boot from CD		You can change how this virt operating system is installed virtual machine from starting	on this disk, cha		
4096 MB		Controller:		Location:	
		IDE Controller 0	~	0 (in use)	~
2 Virtual processors		Media			
IDE Controller 0	_	You can compact, convert			virtual hard disk
🗏 🧰 Hard Drive		by editing the associated	file. Specify the	full path to the file.	
BarracudaBackupService-v Advanced Features		Virtual hard disk:			
IDE Controller 1		D:\VHD\BarracudaBa	ckupService-vm4	1.2.4-fw6.2.00.10133-2	20150721.vhd
DVD Drive None		Ne	w E	dit Inspect	Browse
		O			

9. Click Next, choose Expand in the "Choose Action" section, then click Next.

8	Edit Virtual Hard Disk Wizard
Choose	Action
Before You Begin Locate Disk	What do you want to do to the virtual hard disk? O Compact
Choose Action	This option compacts the file size of a virtual hard disk. The storage capacity of the virtual hard disk
Configure Disk Summary	remains the same. Convert This option converts a virtual hard disk by copying the contents to a new virtual hard disk. The new virtual hard disk can use a different type and format than the original virtual hard disk.
	Expand This option expands the capacity of the virtual hard disk.

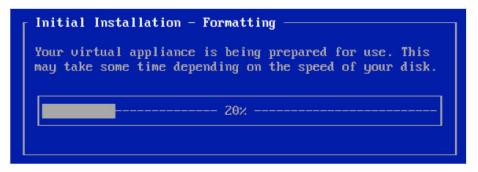
10. Specify the size of the **virtual hard disk** using the settings as specified in the "Sizing" section above, click **Next**, then **Finish**.

ø	Edit Virtual Hard Disk Wizard
Expand V	Virtual Hard Disk
Before You Begin Locate Disk Choose Action	What size do you want to make the virtual hard disk? Current size is between 49 GB and 50 GB. New size: 1000 GB (Maximum: 2,040 GB)
Configure Disk Summary	

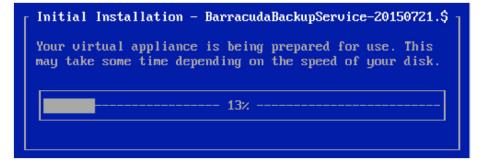
11. On the VM Settings window, click **Apply** and then **OK** to finish editing the virtual machine.

Barracuda Backup Service	~	
 ★ Hardware ▲ Add Hardware ▲ BIOS Boot from CD ■ Memory 4095 MB ■ Processor 2 Virtual processors ■ IDE Controller 0 ■ Hard Drive BarracudaBadwpService-v 	·	Hard Drive
Advanced Features Advanced Features IDE Controller 1 By DVD Drive None SCSI Controller None COM 1 None COM 2	= r	D: WHD\BarracudaBadxupService vm4.2.4-fw6.2.00.10133-20150721.vhd New Edit Inspect Browse Physical hard disk: ✓ ✓ If the physical hard disk you want to use is not listed, make sure that the disk is offline. Use Disk Management on the physical computer to manage physical hard disks. To remove the virtual hard disk, click Remove. This disconnects the disk but does not
None Diskette Drive None		delete the associated file.

12. Power on the Barracuda Backup Vx.



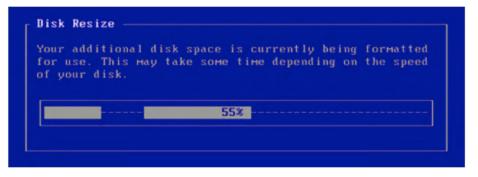
13. The Barracuda Backup appliance will be prepared for use, this may take several minutes.



14. Using your keyboard arrows, select **Yes** to format and partition the additional disk space you provisioned in step 10 above.



15. The Barracuda Backup Vx expands and formats its partition space.



- 🃲 Barracuda Backup Service on WIN-T0J2T9S86VL Virtual Machine Connection 💻 💻 File Action Media Clipboard View Help 🕸 🔘 🔘 🞯 🕘 📗 🕨 🖄 > Status .odBP` Language TCP/IP Configuration .odBBBB` Licensing , dBBBBBB Troubleshooting , dBBBBBBB , dBBBBBBBB System Exit ;Bb. **ABBBBBBBBB** dBBBBBBBBB i dBBb ввввь dBBBBBBBBBBB Serial #: 0 BBBBBB **iBBBBBBBBBBBB**BB Firmware u: 6.2.00.10133 BBBBBBB . Support Tunnel closed. Barracuda Network Status Barracuda Backup Appliance V90 Local: Down Internet: Down Cloud: Down 2015-07-24 13:37:17 Status: Running a 8 🔒
- 16. Once the formatting has completed, the appliance will reboot and display:

Open Firewall Ports

If your Barracuda Backup Vx is located behind a corporate firewall, open the following ports on your firewall to ensure proper operation:

PORT	PROTOCOL	DIRECTION	USAGE
80	TCP & UDP	OUT	Health Monitoring
443	TCP & UDP	OUT	Health Monitoring
1194	TCP & UDP	OUT	Configuration/ Management
5120	TCP & UDP	OUT	Barracuda Backup Agent
5121-5129	TCP & UDP	OUT	Offsite Replication

Configuring and Activating the Virtual Appliance

Once you deploy Barracuda Backup Vx, you can provision it. You need your Barracuda Vx license token, which you should have received via email or from the website when you downloaded the Barracuda Backup Vx package. If not, you can request an evaluation on the Barracuda Networks website at <u>barracuda.com</u>. The license token looks similar to 01234-56789-ABCDE.

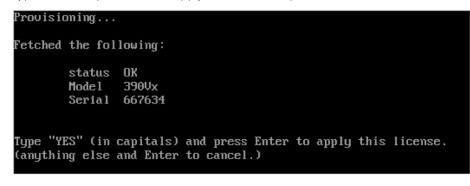
1. On the System Configuration screen, use keyboard arrows to select **TCP/IP Configuration**, specify your network settings, then **Save**.

> TCP/IP Configuration < Licensing	Use DHCP
Troubleshooting System Exit	IP Address: 10.66.32.177 Netmask: 255.255.252.0 Default Gateway: 10.66.32.1 Primary DNS Server:
Serial #: 0 Firmware v: 6.2.00.10159 Support Tunnel closed.	Secondary DNS Server: Proxy Server Configuration (optional) Server Name/IP: TCP Port: Username: Password:

2. Use your keyboard arrows to select **Licensing**, enter the unique token provided to you by Barracuda Networks to activate the Vx appliance, then **Save**.

Status Language TCP/IP Configuration > Licensing < Troubleshooting System Exit	Licensing To provision this Barracuda Virtual Appliance with a license token, please enter it below and then choose "Save" to continue.
Serial #: 0	Token: XXXXX-XXXXX-XXXXX Default Domain: barracuda.com

3. Type YES, then press Enter to apply the license and provision the virtual machine.



- 4. Wait for the virtual appliance to be provisioned—this can take several minutes.
- 5. Once the license has been installed, press **Enter** to reboot the virtual appliance.
- 6. Once the Barracuda Backup Vx appliance has completed the boot process, verify that both **Local** and **Internet** are "Up" under Network Status.

Note: Cloud will go "Up" once the appliance has been linked (step 7).

> Status < Language TCP/IP Configuration Licensing Troubleshooting System Exit	.odBP` ,odBBBB` ,dBBBBBBB ,dBBBBBBBBBBBBBBBBBBBBB
Serial #: 672415 Firmware v: 6.2.00.10159 Support Tunnel closed.	BBBBb dBBBBBBBBb BBBBBb iBBBBBBBBBBb. BBBBBBb. BBBBBBBBBBBBBBBb. B arracuda
Network Status Local: Up Internet: Up Cloud: Down	Barracuda Backup Appliance 390Vx

7. Refer to the Barracuda Campus article <u>"How to Install the Barracuda Backup Appliance"</u> and follow the instructions under **Link the Appliance** and **Create a Barracuda Cloud Control Account** if you do not already have a Barracuda Cloud Control account.

Expanding the Capacity of the Barracuda Backup Vx - VMware

- 1. Power down the virtual appliance.
- 2. Right-click on the virtual appliance and choose Edit Settings...
- 3. Click Hard disk 1 in the "Hardware" section.
- 4. Change the **Provisioned Size** to the desired capacity.

ardware Options Resources	Profiles vServices	Virtual Machine Version: 8
Show All Devices	Add Remove	Disk File [datastore1] Barracuda Backup TME/Barracuda Backup TME.
Hardware Memory CPUs Video card VMCI device SCSI controller 0 Hard disk 1 Network adapter 1	Summary 4096 MB 2 Video card Restricted Paravirtual Virtual Disk VM Network	Disk Provisioning Type: Thick Provision Lazy Zeroed Provisioned Size:

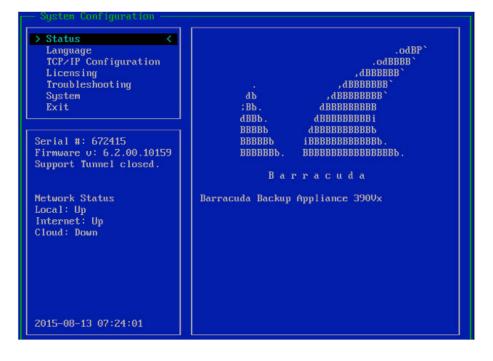
- 5. Increase the amount of **Memory** or the number of **CPUs** to match the new disk capacity. Refer to the "Sizing" recommendations above for the minimum recommendations.
- 6. Click **OK** to reconfigure the virtual machine.
- 7. Power on the virtual appliance.
- 8. The additional disk space will be detected, select Yes to format and use it.

used for		on your Ba	rracuda Virt	ed that can be tual Appliance This action	
cannot be snapshot	undone. It	is STRONGLY This operation	suggested t	that you take a very long t	2.4
		٥	[C		1

9. The additional disk space will be formatted and the disk resized, this may take several minutes.



10. Once the formatting and resizing has completed, the appliance will reboot and display:



Expanding the Capacity of the Barracuda Backup Vx – Hyper-V

- 1. Power down the virtual appliance.
- 2. Right-click on the virtual appliance and choose Settings...
- 3. Click the Hard Drive in the "Hardware" section.
- 4. Under Virtual hard disk, click the **Edit** button.

Hardware Add Hardware EIOS		Hard Drive			
-					
Boot from CD	oper	can change how this virtu ating system is installed o al machine from starting.			
4095 MB	Cont	troller:		Location:	
Processor	IDE	Controller 0	~	0 (in use)	~
2 Virtual processors	Me	dia			
🗄 📰 IDE Controller 0		ou can compact, convert,			virtual hard disk
🗉 🧰 Hard Drive		y editing the associated fil	e. Specify the	full path to the file.	
BarracudaBackup-vm4.2.4	• •	Virtual hard disk:			
IDE Controller 1 DVD Drive		D:\VHD\BarracudaBack	up-vm4.2.4-fw	6.2.00.10159-2015080	7.vhd
None		New		dit Inspect	Browse
SCSI Controller		INEW		Inspect	Drowse

5. Click Next, then choose Expand.

ø	Edit Virtual Hard Disk Wizard
Choose A	Action What do you want to do to the virtual hard disk?
Locate Disk	O Compact
Choose Action Configure Disk Summary	This option compacts the file size of a virtual hard disk. The storage capacity of the virtual hard disk remains the same. C Convert This option converts a virtual hard disk by copying the contents to a new virtual hard disk. The new virtual hard disk can use a different type and format than the original virtual hard disk. Expand This option expands the capacity of the virtual hard disk.
	< Previous Next > Finish Cancel

6. Click **Next,** then specify the new disk size.

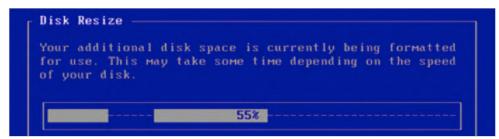
ø.	Edit Virtual Hard Disk Wizard
Expand Virtual Hard Disk	
Before You Begin Locate Disk Choose Action Configure Disk Summary	What size do you want to make the virtual hard disk? Current size is 1,000 GB. New size: 2000 GB (Maximum: 2,040 GB)
	< Previous Next > Finish Cancel

- 7. Click **Next,** then click **Finish.**
- 8. Increase the amount of **Memory** or the number of **CPUs** to match the new disk capacity. Refer to the "Sizing" recommendations above for the minimum recommendations.
- 9. Click **OK** to reconfigure the virtual machine.
- 10. Power on the virtual appliance.

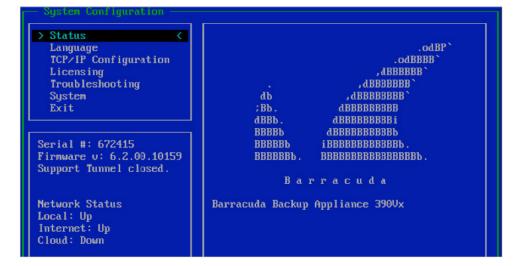
11. The additional disk space will be detected, select Yes to format and use it.



12. The additional disk space will be formatted and the disk resized—this may take several minutes.



13. Once the formatting and resizing has completed, the appliance will reboot and display:



About Barracuda Networks, Inc.

Barracuda (NYSE: CUDA) simplifies IT with cloud-enabled solutions that empower customers to protect their networks, applications, and data regardless of where they reside. These powerful, easy-to-use, and affordable solutions are trusted by more than 150,000 organizations worldwide, and are delivered in appliance, virtual appliance, cloud, and hybrid configurations. Barracuda's customer-centric business model focuses on delivering high-value, subscription-based IT solutions that provide end-to-end network security and data protection. For additional information, please visit barracuda. com.

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