

PerfectMail XenServer Setup Guide

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2 Installing *PerfectMail™* under *Citrix™ Xen™ 5.x/6.x*

This is supplemental to the *PerfectMail Setup Guide*. Please refer to the *PerfectMail Setup Guide* for setup instructions and refer to this guide for instructions on how to *Build a XenSever™ VM for PerfectMail™*.

Note that the following procedure have been tested against Citrix XenServer 6.2 as of this writing, but should work for previous versions of Citrix XenServer. This guide can be used to install PerfectMail under Xen environments offered by other vendors, though the Xen-specific steps may vary. The supplied screenshots are for illustration purposes and may vary for your environment.

Installation is a two step process: 1) Create a VM and install PerfectMail in *HVM mode*, then 2) convert the newly installed VM from *HVM mode* to *PV mode*.



3 PerfectMail[™] Setup Procedure

Congratulations and thank you for purchasing PerfectMail[™]. Setting up PerfectMail is fast and easy; it should take about 30 minutes. Before proceeding with the install, please read this entire document. The Setup process involves the following steps:

- 1. Learn about PerfectMail™
- 2. Build/Purchase either a Physical or Virtual Server
- 3. Install PerfectMail
- 4. Initial PerfectMail Configuration
- 5. PerfectMail Detailed Configuration
 - i. Update General Configuration Settings
 - ii. Configure Domains and Users
 - iii. Configure Filter Settings
- 6. Perform Post Install tasks
 - i. Redirect Incoming E-mail
 - ii. Redirect Outgoing E-mail
 - iii. Update firewall settings

3.1 Mail Server Compatibility

PerfectMail[™] is guaranteed to be compatible with your mail server!

PerfectMail products are compatible with all SMTP or ESMTP compliant mail servers including:

- Microsoft Exchange[™]
- Lotus Domino[™]
- Novell GroupWise[™]
- IMail, QMail, Sendmail
- Communigate, Scalix
- MDaemon, eMailMan, MerakMail Server
- And about 1,000,000 other mail server products!

If your mail server program is not on our list, please Contact Us to verify compatibility.

3.2 PerfectMail Documentation

For detailed information on PerfectMail[™] and it's user interface, please refer to the *PerfectMail[™] Administrator's Guide*. If you do have any questions or problems, please contact our PerfectMail[™] support team <support@perfectmail.com>.

To download the latest install image and get up-to-date documentation please visit our download site at http://www.perfectmail.com/download

A selection of documents are available from the web interface under the *Documentation* menu. Administrators should read the *Admin Guide*. Current documents include:

- Setup Guide
- Admin Guide
- User Guide
- License Agreement



We're always interested in improving our product and documentation, so all your comments and requests are highly valued.



4 Important PerfectMail Setup Notes

The PerfectMail[™] Edge Transport Server is a complete *Operating System* and *Application* bundle. PerfectMail includes a highly customized and secured version of Linux. However, knowledge of Linux is not required. All administrative duties can be performed using our *web based user interface*.

WARNING: The Installation CD performs a complete system install. It will erase all existing software on the existing machine. Be sure this is what you want before you install PerfectMail.

PerfectMail acts as an SMTP relay host

It makes filter or forward decisions by examining many aspects of an e-mail, including message structure, content, reputation and verification.

PerfectMail does not replace your mail server

PerfectMail filters and forwards e-mail, but is separate from and does not replace your existing mail server. You must run your own mail server; e.g. MS Exchange, Lotus Domino, GroupWise, Sendmail, QMail, etc.

PerfectMail must be your MX Host!

PerfectMail *must* be the first point of contact with the Internet. PerfectMail *must act as a mail exchanger* for your domains (i.e. your DNS MX records will be pointing directly to PerfectMail). If e-mail is relayed through a proxy or intermediate e-mail host, critical information will be lost and PerfectMail's effectiveness will be significantly impaired.

The Firewall must not act as an e-mail proxy

Some firewalls can act as e-mail proxies, applying rudimentary e-mail filtering. This option must be disabled. *Only use port forwarding rules to PerfectMail.*

Configure PerfectMail to filter your domains

PerfectMail will only accept traffic for configured e-mail domains. Make sure all your domains are setup using PerfectMail's Web Interface.

Does your mail server do SMTP Recipient Filtering?

SMTP Recipient Filtering occurs when your mail server rejects e-mails sent to accounts that *don't exist*. Some mail servers, notably MS Exchange, have this turned off by default. *SMTP Recipient Filtering* is an important method whereby PerfectMail is able to *automatically* validate the existence of an e-mail address. For MS Exchange servers, refer to the section on *Enabling SMTP Recipient Filtering for MS Exchange*.

Relay outgoing e-mail through PerfectMail

Our e-mail reputation engine is a major strength of PerfectMail. This adaptive engine self-trains by watching both in-bound and out-bound e-mail traffic. For maximum effectiveness, PerfectMail needs to see both in-bound and out-bound e-mail. For MS Exchange servers, refer to the section on *Configuring a SmartHost for MS Exchange*.

DNS resolution must work!!!

Domain Name Service resolution *must work* for your PerfectMail server to function. PerfectMail *will not accept e-mail from unresolvable domains*! Similarly, the <u>hostname</u> you assign to your PerfectMail server must be fully resolvable in DNS (Example: perfectmail.mydomain.net). This server will be *visible* to the Internet; **an unresolvable hostname name may cause other mail servers to reject** *your* **e-mail**.



5 Build the Server

The *PerfectMail Install Image* is a self-installing CD that includes the entire PerfectMail software base and underlying operating system, ready to install on your hardware. PerfectMail on CD supports most popular hardware platforms and, because it includes the operating system, there is nothing else to buy.

PerfectMail works in both physical and virtual environments. We don't recommend particular brands of hardware; choose your preferred hardware vendor or build a white box. The only hardware requirement is that it must be compatible with **Red Hat Enterprise Linux version 6.4**.

In general we recommend deploying a virtualized environment. PerfectMail does not put a lot of strain on the server it runs on, which makes it perfect for virtualization.

For *virtual* servers we recommend starting with the minimum sizing as specified for your *PerfectMail Edition*, and increase the virtual resources as needed.

(This document does not describe setting up a virtual environment.)

5.1 PerfectMail Sizing and Limits

Size your server to match your selected *PerfectMail Edition*, described below. PerfectMail does not put a lot of strain on the server it runs on. However, for physical servers it's best to over-buy hardware (1Gb memory minimum) to minimize downtime if hardware upgrades are required.

For *virtual* servers we recommend starting with the minimum sizing as specified for your *PerfectMail Edition*, and increase the virtual resources as needed.

Most PerfectMail server issues concern under-provisioned hardware. If you are experiencing server problems it's best to check your resource usage. If in doubt, increase memory.

5.1.1 Minimum System Requirements

PerfectMail[™] can run as either a physical or virtual server. At minimum, you need:

- P4/Athlon CPU
- 1 GB of memory
- 10 GB of disk space
- 10/100 or GB NIC
- keyboard and display

The more e-mail traffic PerfectMail[™] server sees, the more resources it will need to function effectively.

Note: Physical hardware can function with 512Mb of memory. However we've found this small amount of memory to be insufficient for most mail loads.

5.1.2 Memory Usage

PerfectMail uses approximately 250Mb + 10Mb/thread of virtual memory. This value varies between machines but gives a good estimate.



5.1.3 Resource Requirements

PerfectMail Edition	Small Business	Standard	Advanced	Enterprise
Maximum recommended Users	1-75	250	1,000	5,000
Max disk space for message store	20Gb	50Gb	200Gb	All available disk Dynamically grow message store space
CPU	Single Core	Single Core	Dual Core	Quad Core
Memory	1Gb	1.5Gb	2.5Gb	4Gb
Maximum message store	7 days	30 days	90 days	180 days
Maximum concurrent messages	32	64	128	256
Maximum messages per day	250,000	500,000	1,000,000	2,000,000



6 Section I: Install PerfectMail on Xen in HVM mode

Lauch the XenCenter management application and connect to your *Citrix Xen™* Host using an administrator account defined on Xen (root is the default).

1. Create a new Virtual Machine.

XenCenter					
File View Pool Ser	rver VM Storage Templates	Tools Window Help Iew Pool 🎁 New Storage 🛅 New	VM 🕘 Shut D	own 🛞 Reboot 🕕	Suspend
Show: Server View XenCenter Xenserver-test DVD driv Local stor	Search General	er-test Memory Storage Networking NIQ Overview	Es Console Perfo	ormance Users Logs	
Removat	Import Add to Pool Enter Maintenance Mode	ns - Name r-test	CPU Usage	Used Memory	Disks (avg / max k
(e) (e)	Reboot Shut Down Disconnect Reconnect As	ISCall of Aeroserver ISO library ISO library [192.168.20.13:/nfs	- -	- - -	a
E	Properties]			

 Select "Other install media" as the VM template. Do not select any of the CentOS VM templates as it will use PV mode by default and the PerfectMail automated installer will fail. Your PerfectMail VM will be converted to PV mode after installation.

🛎 New VM	ate			301
Template Name Installation Media Home Server CPU & Memory Storage Networking Finish	Search Name SUSE Linux Enterprise Server 11 (32-bit) SUSE Linux Enterprise Server 11 (64-bit) SUSE Linux Enterprise Server 11 SP1 (32-bit) SUSE Linux Enterprise Server 11 SP1 (32-bit) Ubuntu Lucid Lynx 10.04 (32-bit) Ubuntu Lucid Lynx 10.04 (64-bit) Ubuntu Lucid Lynx 10.04 (64-bit) Ubuntu Maverick Meerkat 10.10 (64-bit) (experi Ubuntu Maverick Meerkat 10.10 (64-bit) (experi)	C Category SUSE SUSE SUSE Ubuntu Ubuntu Ubuntu Ubuntu Mise Mise Mise		Template details Template which allows VM installation from install media
CITRIX.	Copy host BIOS strings to VM			
		< Previou	s [Next > Finish Cancel



3. Provide a name for the *PerfectMail* VM (in this example, we'll use "PerfectMail VM"). The name can be anything you want although you will need to know it when converting the VM from *HVM mode* to *PV mode*.

🕙 New VM	
Name the new virtua	al machine
Template Name Installation Media	Enter a name that will help you to identify the virtual machine later. This could be a name that describes its software and hardware such as RHEL DHCP Server, Win2K3 XenApp Server or Exchange 2007 Client Access Server. This name will also be displayed in XenCenter's Resources pane and can be changed later.
Home Server	You can also add a more detailed description of the VM, if you wish.
Storage Networking Finish	Description:
CITRIX.	
	<pre></pre>

4. Select the PM ISO that you have downloaded and ensure that Xen can access it. Click Next to continue.

Template	Select the installation method for the operating system software you want to install on the new VM.
Installation Media Home Server CPU & Memory Storage Networking Finish	Install from ISO library or DVD drive: Mew ISO library Boot from network



5. Select the Xen server where the VM will reside and click Next.

🖲 New VM	
5 Select a home server	0
Template Name Installation Media Home Server CPU & Memory Storage Networking Finish	When you nominate a home server for a virtual machine, the virtual machine will always be started up on that server if it is available. If this is not possible, then an alternate server within the same pool will be selected automatically. ○ Don't assign this VM a home server. The VM will be started on any server with the necessary resources. (Shared storage required) ③ Place the VM on this server: ☑ conserver-test. 7618 MB available (8190 MB total)
CITRIX.	
	< Previous Next > Finish Cancel

6. Select the CPU count and memory for the *PerfectMail* VM. A *PerfectMail* server should have a minimum of 1024Mb of memory, though larger values may be required for some installations. Resources can be added at a later time if needed.

emory resources
ecify the number of virtual CPUs and the amount of memory that will be initially allocated to the new virtual machine. Number of v⊆PUs: 1



7. Select the storage size for the VM. A *PerfectMail* server should have a minimum of 20Gb of disk, though larger values are required for most installations. 40Gb of disk is a good working start for most production servers. Resources can be added at a later time if needed.

Add Virt	tual Disk	2 🔀
Enter a nam VM the disk t	e, description and size for your virtual disk. The size of your disk and the home server setting of an belongs to will affect which storage locations are available.	y
Name:	PM-Disk1	
Description:		
Size:	20 📚 🔽	
Location:	Local storage on xenserver-test 128,7 GB free of 128,7 GB	
	Add Cancel	

8. Select the Storage area where the Virtual Machine will reside. This will vary in your environment.

🗷 New VM				
Difigure storag	e for the new VM			0
Template Name Installation Media Home Server CPU & Memory Storage	The virtual machine template you selected earlier provid properties of these virtual disks, and add more disks if ru Alternatively, you can select the second option below to and does not use any virtual disks. When you have finished configuring disks for the new vi	es the virtual disks listed belov aquired. o create a diskless VM that can rtual machine, click Next to cor	v. You can chang be booted from ntinue to the ne:	je the the network xt step.
Networking		Size	Shared	Add
10151	Local storage on xenserver-test Use storage-level fast disk clone	20 GB	False	Delete Properties
CITRIX.	Create a diskless VM that boots from the network			
		< Previous Next >	Finish	Cancel



9. Select the network interfaces appropriate for your environment.

Name	The virtual machine template you have selected provides the virtual network interfaces list configure or delete the default virtual network interfaces here, and add more if required.	ed below. You can
Installation Media Home Server	Virtual network interfaces on PerfectMail VM	
CDI 18: Memory	MAC Network	Add
iro o menory	autogenerated MAC> Network 0	Delete
etworking		Properties
Finish		
	Using a Default template, you can configure up to 4 virtual network interfaces during creation. To configure more than 4, create a Custom template or add extra virtual ne interfaces from the Network tab after creating the new VM.	VM twork

10. Confirm the selections on the summary page and click Finish.

Template Name Installation Media Home Server	All the necessary infr settings shown below Review these setting VM and close this wiz	ormation has been collected and the wizard is ready to provision the new virtual machine using the v. is, then click Previous if you need to change anything. Otherwise, click Finish to create the new ard. It may take several minutes to create the new VM.
CPU & Memory	Property	Value
Storage	Template	Other install media
letworking	Name	PerfectMail VM
inish	Install Method	CD
	Installation Source	PM-3,4,2-8,CentO55.iso
	Home Server	xenserver-test
	vCPUs	1
	Memory	512 MB
	Disk 0	20 GB
	Network Interface 0	Network 0
citrix.	Start the new VM	lautomatically



11. Once the VM creation is complete, open up a console to your PerfectMail VM. You will be presented with a menu of various PerfectMail installation options. Since the installation is occurring under Citrix XenServer, it is very important that you type the command â[™] pm clocksource=hpetâ[™] (case sensitive) at the boot: prompt. (With Citrix XenServer, it has been observed that the underlying linux kernel does not reliably detect the clocksource and as a result, the installation may hang indefinitely. Forcing the kernel to use the high precision event timer overcomes this issue.)

Welcome to PerfectMail(TM). This installation will run under the following environments:
* Installation on Linux-supported desktops/workstations/servers * UMWare vSphere/ESX 4.x, vSphere/ESXi 4.x, 5.x * Microsoft Hyper-V 2008 / 2008 R2, 2012 * Citrix Xen 5.x, 6.x
WARNING: Please note that during the install process (after you have selected your timezone and chosen a root password), the installation process will ERASE ALL PARTITIONS on ALL detected drives.
To begin installation, please see the below instructions:
 To begin the PerfectMail installation, type pm <enter>.</enter> To install PerfectMail under Citrix Xen type pm clocksource=hpet <enter>.</enter> To perform a memory test of hardware, type: memtest86 <enter>.</enter> To bail out of this installation, please hit <enter>.</enter>
boot: pm clocksource=hpet_

12. During the PerfectMail install, you may see the PerfectMail RPM software package installing and appear to stall or be unresponsive after it reaches 100%. This behavior is normal. It may take several minutes for the process to complete after the install reports to complete, especially if Internet connectivity is not available. Please be patient. On completion the VM will automatically reboot.

Starting system message bus	:]	OK]	
Retrigger failed udev event	2]	OK]	
Adding udev persistent rule	2	[OK]	
Generating SSH1 RSA host ke	y :	[OK]	
Generating SSH2 RSA host ke	y :]	OK]	
Generating SSH2 DSA host ke	y :]	OK]	
Starting sshd:		[OK]	
Starting ntpd:		1	OK]	
Starting sendmail:		1	OK]	
Starting sm-client:]	OK]	
Starting httpd: httpd: Coul domain name, using localho	d not reliably determine the st.localdomain for ServerNam	serve e	r's	fully	qualified
		1	OK]	
Starting crond:		1	OK]	
Starting process accounting		1	OK]	
Starting atd:		L	OK]	
Now installing PerfectMail.					
Preparing	******************************	*****	###	******	# [100%]
1:perfectmail	********************************	*****	###	******	# [100%]



- 13. After the installation is successful, the first time the VM reboots, it will reboot off the ISO image. At this point, you should eject the ISO image from the VM. Once you eject the ISO image from your virtual machine, you can hit to boot off the local virtual hard disk.
- 14. You now have a running instance of PerfectMail under Xen in HVM mode. Section II will show how to convert your Virtual Machine to make use of the optimal features offered for Virtual Machines running in PV mode.



7 Section II: Convert the *PerfectMail* Xen VM from *HVM mode* to *PV mode*

NOTE: This procedure has been adapted from Citrix Knowledge Base Article CTX121875 (http://support.citrix.com/article/CTX121875).

The following procedures need to be carried out on the console of the Xen Server hosting the PerfectMail Virtual Machine. Continuing the example from Section I we will assume the Virtual Machine name is \hat{a}^{TM} PerfectMail VM \hat{a}^{TM} .

Open a console to the *PerfectMail* VM and log in as root when carrying out the below procedures.

- 1. Shut down the PerfectMail VM by issuing the â[™] poweroffâ[™] command (without the quotes). Do not proceed to the next task until the VM is powered down.
- 2. Carry out the below xe tasks to identify the UUID of the *PerfectMail* Virtual Machine and set the bootloader to use pygrub and to clear the HVM boot policy definded.
 - a. Retrieve the UUID of the PerfectMail Virtual Machine

xe vm-list name-label="PerfectMail VM" params=uuid

b. Clear the HVM boot mode (using the UUID identified above):

xe vm-param-set uuid=<vm uuid> HVM-boot-policy=""

c. Set pygrub as the bootloader (using the UUID identified above):

xe vm-param-set uuid=<vm uuid> PV-bootloader=pygrub

d. Set the display arguments (using the UUID identified above):

xe vm-param-set uuid=<vm uuid> PV-args=console="hvc0"

3. Find the UUID of the interface of the virtual disk:

xe vm-disk-list uuid=<vm uuid>

4. Set the disk device as bootable using the UUID identified.

xe vbd-param-set uuid=<vbd uuid> bootable=true

5. Find the UUID of the interface of the virtual CD/DVD drive:

xe vm-cd-list uuid=<vm uuid>

6. Set the CD/DVD bootable flag to false using UUID identified:

xe vbd-param-set uuid=<vbd uuid> bootable=false



[root@xenserver-test ~]# uuid (RO) : 5a17becf	xe vm-list name-label="PerfectMail VM" params=uuid -4a14-8918-6afe-elfbead6b9a3				
<pre>[root@xenserver-test ~]# [root@xenserver-test ~]# [root@xenserver-test ~]# Disk 0 VBD: uuid (RO)</pre>	<pre>xe vm-param-set uuid=5a17becf-4a14-8918-6afe-e1fbead6b9a3 HVM-boot-policy="" xe vm-param-set uuid=5a17becf-4a14-8918-6afe-e1fbead6b9a3 PV-bootloader=pygrub xe vm-param-set uuid=5a17becf-4a14-8918-6afe-e1fbead6b9a3 PV-args="console=hvc0" xe vm-disk-list uuid=5a17becf-4a14-8918-6afe-e1fbead6b9a3 933c17b6-01fb-1b0c-6d7b-4c191df0c307 PerfectMail VM 0</pre>				
Disk O VDI:					
uuid (RO) :	ab929992-42be-4ce9-a1d0-ae149e623b5f				
name-label (RW):	PM-Disk1				
sr-name-label (RO):	Local storage				
virtual-size (RO):	21474836480				
[root@xenserver-test ~]#	xe vbd-param-set uuid=933c17b6-01fb-1b0c-6d7b-4c191df0c307 bootable=true				
[root@xenserver-test ~]# CD O VBD:	xe vm-cd-list uuid=5a17becf-4a14-8918-6afe-e1fbead6b9a3				
uuid (RO) :	6bc010f7-6108-e144-6ad3-94f7a428d2c9				
vm-name-label (RO):	PerfectMail VM				
empty (RO):	true				
userdevice (RW):					
[root@xenserver-test ~]#	xe vbd-param-set uuid=6bc010f7-6108-e144-6ad3-94f7a428d2c9 bootable=false				
[root@xenserver-test ~]#					

- 7. The *PerfectMail* virtual machine should be able to boot in *PV mode*. Power on the *PerfectMail* virtual machine. If the VM successfully boots but there is no keyboard or mouse responses, then simply close down and restart XenCenter.
- 8. Install the XenServer tools on the *PerfectMail* VM:
 - a. Open up the console of the PerfectMail VM and ensure that it's powered on
 - b. Select xs-tools.iso in the DVD drive field
 - c. mount the ISO image as follows:

mount -r /dev/xvdd /mnt

d. Install the XenServer tools:

```
cd /mnt
cd Linux
./install.sh
cd
umount /dev/xvdd
```



e. Reboot the VM

reboot



9. Once the VM has rebooted, XenCenter should report the VM as being in an optimal state under the General Tab.

XenCenter Ele Yiew Pool Server VM Storag Back Denrward Denrward Denrward	pe <u>T</u> emplates Tools <u>W</u> v Server I ¹ New Pool	indow Help
Views: Server View	PerfectMail VM or General Memory Storage VM General Properties General Name: Description: Tags: Folder: Operating System: BIOS strings copied: Virtualization state: Time since startup: UUID: Boot Options	New Scorage New VM Shut Down Keboot Suspend Suspend



Now that your PerfectMail is running in PV mode under Citrix XenServer in an optimal state, you may now carry out the initial PerfectMail configuration via the Web-based User Interface. Please refer to the PerfectMail Setup Guide, Initial PerfectMail Configuration for more details.



8 Support

If you have any issues at all, please contact our support team. You can reach us between 9:00am and 6:00pm EST, Monday to Friday. The best way to get support is to file a Support Incident on our website: http://www.perfectmail.com/support.

If you discover a PM bug, then your support incident incurrs no charge. Support incidents are intended to help customers do things more quickly and effectively or to help gather information or identify e-mail issues.

Support incidents are included in the price of the product (excluding the free version). Support packs are also available to bump this if needed. With support, if the issue is with our software or some deficiency on our part, including unclear documentation, or for customer feedback support is free. For other issues we burn or charge for a support incident.

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