

# Virtual Email and Web Appliance

## Hardware Support

### (June 2009)

#### INTRODUCTION

Clearswift offers the MIMESweeper Email Appliance (2.8) and MIMESweeper Web Appliance (1.4) as a software download to supplement the hardware ranges based on Dell hardware. This increases customer choice provides the ability to scale the hardware platform beyond the biggest unit that Clearswift currently ships.

The appliance is a security product and the underlying platform has been hardened accordingly. The Linux distribution is based on the LFS distribution, kernel version V2.6.27.4 and contains a reduced set of device drivers and system services to only support the functions required to perform its task and also reduce its kernel size. The appliance, therefore, cannot be supported on every Intel based hardware platform whether or not that platform supports the Linux distribution detailed above.

There are, however, a number of device drivers included in the Appliance kernel for a variety of common network cards and disk controllers from the major peripheral vendors permitting support for a broad subset of x86-based servers from:

- Dell (7x,8x,9x, R series)
- IBM (x series) and
- HP (DL series).

#### SIZING

When considering sizing the hardware chassis you must remember that the Clearswift Appliances consists of an Operating system and hence will overwrite the boot disk for that machine. Our license restricts you from loading any other software onto that device after you have installed the appliance, so **a dedicated chassis is required for this purpose.**

The Clearswift Appliance uses 1 logical volume, so any distribution of file-systems for performance or resilience should be performed through the use of hardware RAID controllers. The Clearswift appliance has been tested in RAID 1 and 0+1 configurations.

Our general recommendations for the email appliance hardware are:

Message Volume	Processor	Number of processors	Memory	Disk	Raid
Low (<30,000 per hour)	Celeron/Pentium 4, Pentium Dual Core Exxxx,	1	1Gb	73-160Gb SATA/SCSI	Optional

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Medium (<60,000 per hour)	Sempron				
	Dual Core Xeon 30xx	1	2Gb	73-160Gb	Optional
	Dual Core Xeon 50xx Athlon 64			SATA/SCSI	
High (> 60,000 per hour)	Dual Core Xeon 32xx,	2	2Gb	73-160Gb	Yes
	Dual Core Xeon 51xx			SATA/SAS	
	Quad Core Xeon E54xx Opteron				
Very High (>100,000 per hour)	Dual Core or Quad	2	4Gb	144Gb+	Yes
	core Xeon 51xx/53xx Opteron			SATA/SCSI/ SAS	

Our general recommendations for the web appliance hardware are:

Number of Users	Processor	Number of processors	Memory	Disk	Raid
Low (up to 200 total users)	Celeron/Pentium 4/ Dual Core	1	1Gb	1 x 160Gb SATA	Optional
Medium (up to 500 total users)	Dual Core Xeon	1	2Gb	1 x 160Gb SATA	Optional
High (up to 2500 total users)	Quad Core Xeon	2	4Gb	3 x 146 Gb SAS	Yes

The following tables define the hardware on which the appliances have been tested by Clearswift.

## DELL PLATFORMS

Chassis	Processors	Memory	Disks	RAID	Network
				Controller	Controller
Dell 750	Celeron/Pentium	1-2GB	SATA	No	Broadcom
Dell 850	Celeron/Pentium	1-2GB	SATA	No	Broadcom
Dell 860	Celeron Pentium	1-2GB	SATA	No	Broadcom
Dell R200	Celeron	1Gb	SATA	No	Broadcom
Dell 1650	Pentium III	1-2GB	SCSI	PERC3	Broadcom
Dell 1850	Xeon	1-4GB	SCSI	PERC4	Broadcom
Dell 1950	DC Xeon	2-4GB	SAS	PERC5	Broadcom
Dell 1950	Quad Core	2Gb	SAS	PERC6	Broadcom
Dell R610	Quad Core	4Gb	SAS	PERC6	Broadcome
Dell 2850	Xeon	2-4GB	SCSI	PERC4	Broadcom
Dell 2950	Quad Core	4Gb	SAS	PERC6	Broadcom
Dell 6850	DC Xeon	2-4GB	SAS	PERC5	Broadcom

The following models have also been used by customers in the field:

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- PowerEdge 1750
- PowerEdge 1955
- PowerEdge 2550
- PowerEdge 2650
- PowerEdge 2800
- PowerEdge 350
- PowerEdge 840
- PowerEdge 850
- PowerEdge R300
- PowerEdge SC440

## IBM PLATFORMS

Chassis	Processors	Memory	Disks	RAID	Network
				Controller	Controller
X3250	Celeron/Pentium	1-2GB	SATA	No	Broadcom
X346	DC Xeon Xeon/Dual Core Xeon	2-4GB	SCSI	Adaptec AIC 7902	Broadcom 5721
X335	Xeon	1-2GB	SCSI	LSI-Logic	Broadcom
X336	DC Xeon	1-2GB	SCSI	LSI-Logic	Broadcom
X3550	DC Xeon	1-2GB	SAS	Adaptec	Broadcom
X360	Xeon	1-2Gb	SCSI	Adaptec	Intel
X365	Xeon	1-2Gb	SCSI		
X366	Xeon	1-2Gb	SAS	Adaptec	Broadcom
HS20 Bladecenter	Xeon	2-4Gb	SAS		
LS20 BladeCenter	Opteron	2-4Gb	SCSI		
HS21	DC Xeon	2-4Gb	SAS		

The following models have also been used by customers in the field:

- eServer xSeries 232
- eServer xSeries 335
- eServer xSeries336
- System x3350
- System x3650

## HP PLATFORMS

Chassis	Processors	Memory	Disks	RAID	Network
				Controller	Controller
DL360 G3	Xeon	1-2GB	SCSI	Smart Array 5i	Broadcom

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<b>DL380 G5</b>	DC Xeon	1-2GB	SAS	Smart Array	Broadcom
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The following models have also been used by customers in the field:

- Proliant BL20p G2, G3
- Proliant BL35p G1
- Proliant BL460c G1
- Proliant BL465c G1
- Proliant DL320 G3
- Proliant DL360 G2, G4, G5
- Proliant DL365 G1
- Proliant DL380 G2, G3, G4
- Proliant DL385 G2
- Proliant DL585 G2
- Proliant ML370
- Proliant ML570
- HP Netserver
- HP d530

## HITACHI PLATFORMS

Chassis	Processors	Memory	Disks	RAID Controller	Network Controller
<b>HA8000</b>	Quad Core	4Gb	SATA	LSI Megaraid	??

## FUJITSU PLATFORMS

Chassis	Processors	Memory	Disks	RAID Controller	Network Controller
<b>Primergy RX200 S4</b>	Dual Core	4Gb	SCSI	Adaptec	Broadcom NetXtreme

## CAVEATS

This document describes hardware models that have either been explicitly tested by Clearswift or which Clearswift believes should be capable of supporting a Clearswift Appliance deployment. Please note, even though a chassis may be listed in the table, it does not mean that it is guaranteed to work due to potential vendor variations in controller versions or additional peripherals that may be supplied with the unit.

By providing the customers with a means to deploy the appliance onto their specific choice of hardware, Clearswift cannot guarantee the performance nor can Clearswift guarantee the behaviour of a product with regard to the hardware handling of non-Dell based servers.

Clearswift will not support customers, under the terms of the appliance standard support contract, who modify the operating system by installing additional software components or who modify the operating system or product configuration files.

Clearswift suggest that customers intending to deploy on a hardware platform not listed in this document should contact Clearswift Product Management (ukproductmanagement@clearswift.com) to seek advice prior to deployment.

## HOW CAN I CHECK SUPPORT FOR MY DEVICES

Device drivers have to be built into the kernel, there is no support for loadable modules.

If you are unsure whether you hardware is compatible, you can use the Internet to check to see what devices are supported in the kernel.

Using the site <http://kernel.xc.net/>, enter the device name/identity of the main modules in your system, such as Disk Controller or Network Card into the top search box. The search will return whether that module is supported which you can then check against the supplied configuration as below.

For example if you search for 'Adaptec 1542 Disk Controller' you will find an entry for Adaptec AHA1542 support' and the help text will indicate that the kernel must the flag "CONFIG\_SCSI\_AHA1542" set to "Y".

The "CONFIG\_" options for the currently supported drivers are listed below

```
#
# IDE chipset support/bugfixes
#
CONFIG_IDE_GENERIC=y
CONFIG_BLK_DEV_CMD640=y
CONFIG_BLK_DEV_CMD640_ENHANCED=y
CONFIG_BLK_DEV_IDEPNP=y
CONFIG_BLK_DEV_IDEPCI=y
CONFIG_IDEPCI_SHARE_IRQ=y
CONFIG_BLK_DEV_GENERIC=y
CONFIG_BLK_DEV_RZ1000=y
CONFIG_BLK_DEV_IDEDMA_PCI=y
CONFIG_IDEDMA_PCI_AUTO=y
CONFIG_BLK_DEV_AEC62XX=y
CONFIG_BLK_DEV_ALI15X3=y
CONFIG_BLK_DEV_AMD74XX=y
CONFIG_BLK_DEV_ATIIXP=y
CONFIG_BLK_DEV_CMD64X=y
CONFIG_BLK_DEV_TRIFLEX=y
CONFIG_BLK_DEV_CY82C693=y
CONFIG_BLK_DEV_CS5530=y
CONFIG_BLK_DEV_CS5535=y
CONFIG_BLK_DEV_HPT366=y
CONFIG_BLK_DEV_PIIX=y
CONFIG_BLK_DEV_IT821X=y
CONFIG_BLK_DEV_PDC202XX_OLD=y
CONFIG_BLK_DEV_PDC202XX_NEW=y
CONFIG_BLK_DEV_SVWKS=y
CONFIG_BLK_DEV_SIMAGE=y
CONFIG_BLK_DEV_SIS5513=y
CONFIG_BLK_DEV_SLC90E66=y
CONFIG_BLK_DEV_VIA82CXXX=y
CONFIG_BLK_DEV_IDEDMA=y
CONFIG_IDEDMA_AUTO=y

#
# SCSI low-level drivers
#
CONFIG_ISCSI_TCP=y
CONFIG_BLK_DEV_3W_XXXX_RAID=y
CONFIG_SCSI_3W_9XXX=y
CONFIG_SCSI_ACARD=y
CONFIG_SCSI_AHA152X=y
CONFIG_SCSI_AHA1542=y
CONFIG_SCSI_AACRAID=y
CONFIG_SCSI_AIC7XXX=y
CONFIG_AIC7XXX_CMDS_PER_DEVICE=32
CONFIG_AIC7XXX_RESET_DELAY_MS=15000
CONFIG_AIC7XXX_DEBUG_ENABLE=y
CONFIG_AIC7XXX_DEBUG_MASK=0
CONFIG_AIC7XXX_REG_PRETTY_PRINT=y
CONFIG_SCSI_AIC7XXX_OLD=y
CONFIG_SCSI_AIC79XX=y
CONFIG_AIC79XX_CMDS_PER_DEVICE=32
```

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```

CONFIG_AIC79XX_RESET_DELAY_MS=15000
CONFIG_AIC79XX_DEBUG_ENABLE=y
CONFIG_AIC79XX_DEBUG_MASK=0
CONFIG_AIC79XX_REG_PRETTY_PRINT=y
CONFIG_SCSI_DPT_I20=y
CONFIG_MEGARAID_NEWGEN=y
CONFIG_MEGARAID_MM=y
CONFIG_MEGARAID_MAILBOX=y
CONFIG_MEGARAID_LEGACY=y
CONFIG_MEGARAID_SAS=y
CONFIG_SCSI_SATA=y
CONFIG_SCSI_SATA_AHCI=y
CONFIG_SCSI_SATA_SVM=y
CONFIG_SCSI_ATA_PIIX=y
CONFIG_SCSI_SATA_MV=y
CONFIG_SCSI_SATA_NV=y
CONFIG_SCSI_PDC_ADMA=y
CONFIG_SCSI_SATA_QSTOR=y
CONFIG_SCSI_SATA_PROMISE=y
CONFIG_SCSI_SATA_SX4=y
CONFIG_SCSI_SATA_SIL=y
CONFIG_SCSI_SATA_SIL24=y
CONFIG_SCSI_SATA_SIS=y
CONFIG_SCSI_SATA_ULI=y
CONFIG_SCSI_SATA_VIA=y
CONFIG_SCSI_SATA_VITESSE=y
CONFIG_SCSI_SATA_INTEL_COMBINED=y
CONFIG_SCSI_BUSLOGIC=y
CONFIG_SCSI_FUTURE_DOMAIN=y
CONFIG_SCSI_GDTH=y
CONFIG_SCSI_IPS=y
CONFIG_SCSI_INITIO=y
CONFIG_SCSI_INIA100=y
CONFIG_SCSI_SYM53C8XX_2=y
CONFIG_SCSI_SYM53C8XX_DMA_ADDRESSING_MODE=1
CONFIG_SCSI_SYM53C8XX_DEFAULT_TAGS=16
CONFIG_SCSI_SYM53C8XX_MAX_TAGS=64
CONFIG_SCSI_IPR=y
CONFIG_SCSI_QLOGIC_1280=y
CONFIG_SCSI_QLA_FC=y
CONFIG_SCSI_LPFC=y
CONFIG_SCSI_DC395x=y
CONFIG_SCSI_DC390T=y

#
# Multi-device support (RAID and LVM)
#
CONFIG_MD=y
CONFIG_BLK_DEV_MD=y
CONFIG_MD_RAID0=y
CONFIG_MD_RAID1=y
CONFIG_MD_RAID10=y
CONFIG_MD_RAID5=y
CONFIG_MD_RAID6=y

#
# Ethernet (10 or 100Mbit)
#
CONFIG_NET_ETHERNET=y
CONFIG_MII=y
CONFIG_HAPPYMEAL=y
CONFIG_SUNGEM=y
CONFIG_CASSINI=y
CONFIG_NET_VENDOR_3COM=y
CONFIG_EL3=y
CONFIG_VORTEX=y
CONFIG_LANCE=y
CONFIG_NET_VENDOR_SMC=y

#
# Tulip family network device support
#
CONFIG_NET_TULIP=y
CONFIG_DE2104X=y
CONFIG_TULIP=y
CONFIG_TULIP_MMIO=y
CONFIG_DE4X5=y
CONFIG_WINBOND_840=y
CONFIG_DM9102=y
CONFIG_ULI526X=y
CONFIG_HP100=y
CONFIG_NET_PCI=y
CONFIG_PCNET32=y
CONFIG_AMD8111_ETH=y
CONFIG_AMD8111E_NAPI=y
CONFIG_ADAPTEC_STARFIRE=y
CONFIG_B44=y
CONFIG_FORCEDETH=y
CONFIG_DGRS=y
CONFIG_E100=y
CONFIG_FEALNX=y
CONFIG_NATSEMI=y
CONFIG_NE2K_PCI=y
CONFIG_8139CP=y

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```
CONFIG_8139T00=y
CONFIG_8139T00_PIO=y
CONFIG_8139T00_8129=y
CONFIG_SIS900=y
CONFIG_EPIC100=y
CONFIG_SUNDANCE=y
CONFIG_TLAN=y
CONFIG_VIA_RHINE=y
CONFIG_VIA_RHINE_MMIO=y

#
# Ethernet (1000 Mbit)
#
CONFIG_ACENIC=y
CONFIG_DL2K=y
CONFIG_E1000=y
CONFIG_E1000_NAPI=y
CONFIG_NS83820=y
CONFIG_HAMACHI=y
CONFIG_YELLOWFIN=y
CONFIG_R8169=y
CONFIG_R8169_NAPI=y
CONFIG_SIS190=y
CONFIG_SKGE=y
CONFIG_SKY2=y
CONFIG_SK98LIN=y
CONFIG_VIA_VELOCITY=y
CONFIG_TIGON3=y
CONFIG_BNX2=y

#
# Ethernet (10000 Mbit)
#
CONFIG_CHELSIO_T1=y
CONFIG_IXGB=y
CONFIG_S2IO=y

#
```