

Clearswift SECURE Gateways

Virtual Hardware Support

(April 2010)

INTRODUCTION

Clearswift offers the SECURE Email Gateway (3.1) and SECURE Web Gateway (2.1) as a software download to supplement the pre-built hardware ranges based upon Dell hardware. This increases customer choice and provides the ability to scale the hardware platform beyond the biggest units that Clearswift currently ship.

As the gateway is a security product the underlying platform has been hardened accordingly. The Linux distribution is based on the LFS distribution, kernel version V2.6.32.7 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 Gateway's 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 (7-11G series)
- IBM (x series) and
- HP (DL/ML series).

SIZING

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

Clearswift gateways use 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 gateway has been tested in RAID 1, 5 and 0+1 configurations.

Our general recommendations for Email Gateway hardware are:

Message Volume	Processor	Number of processors	Memory	Disk	Raid
Low (<30,000 per hour)	Pentium Dual Core	1	2Gb	73-160Gb SATA/SCSI	Optional

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Medium (<60,000 per hour)	Dual/Quad Core Xeon	1	2Gb	73-160Gb SATA/SCSI	Optional
High (> 60,000 per hour)	Dual/Quad Core Xeon	1	2Gb	73-160Gb SATA/SAS	Yes (1)
Very High (>100,000 per hour)	Dual/Quad Core Xeon	2	4Gb	144Gb+ SATA/SCSI/ SAS	Yes (1)

Our general recommendations for Web Gateway hardware are:

Number of Users	Processor	Number of processors	Memory	Disk	Raid
Low (up to 200 total users)	Dual Core	1	2Gb	1 x 160Gb SATA	Optional
Medium (up to 500 total users)	Dual/Quad Core Xeon	1	2Gb	1 x 160Gb SATA	Optional
High (up to 2500 total users)	Dual Quad Core Xeon	2	4Gb	3 x 146 Gb SAS	Yes (5)

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:

PowerEdge 1750	PowerEdge 1955	PowerEdge 2550	PowerEdge 2650
PowerEdge 2800	PowerEdge 350	PowerEdge 840	PowerEdge 850

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PowerEdge R300
PowerEdge T105
PowerEdge R300

PowerEdge R410
PowerEdge SC1425

PowerEdge SC440
PowerEdge R210

Dimension 470
PowerEdge R710

IBM PLATFORMS

Chassis	Processors	Memory	Disks	RAID	Network
				Controller	Controller
X3250	Celeron/Pentium	1-2GB	SATA	No	Broadcom
X346	DC Xeon	2-4GB	SCSI	Adaptec AIC 7902	Broadcom 5721
	Xeon/Dual Core Xeon				
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
System x3650

eServer xSeries 335
System x3500

eServer xSeries 336
System x3610

System x3350
System x3250 M2

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HP PLATFORMS

Chassis	Processors	Memory	Disks	RAID	Network
				Controller	Controller
DL360 G3	Xeon	1-2GB	SCSI	Smart Array 5i	Broadcom
DL380 G5	DC Xeon	1-2GB	SAS	Smart Array	Broadcom

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

ProLiant BL20p G2	ProLiant BL20p G3	ProLiant BL35p G1	ProLiant BL460c G1
ProLiant BL465c G1	ProLiant DL320 G3	ProLiant DL360 G2	ProLiant DL360 G4
ProLiant DL360 G5	ProLiant DL365 G1	ProLiant DL380 G2	ProLiant DL380 G3
ProLiant DL380 G4	ProLiant DL385 G2	ProLiant DL585 G2	ProLiant ML370
ProLiant ML570	HP Netserver	HP d530	ProLiant DL380 G5
ProLiant DL360 G3	ProLiant ML150 G3	ProLiant DL360 G6	ProLiant BL460c G6
ProLiant BL465c G1	ProLiant BL20p G2	ProLiant BL20p G3	ProLiant DL320 G6
ProLiant DL180 G6	ProLiant DL160 G6	ProLiant DL320 G4	ProLiant ML310 G4
ProLiant DL380 G6			

HITACHI PLATFORMS

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

FUJITSU PLATFORMS

Chassis	Processors	Memory	Disks	RAID	Network
				Controller	Controller
Primergy RX200 S4	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 gateway 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 gateway 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 your 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
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#
# 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
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_I2O=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

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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
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

#

```