

STEELHEAD PRODUCT FAMILY SPEC SHEET

Riverbed® SteelHead™ delivers acceleration everywhere for end users while enhancing IT control and visibility for Wide Area and Hybrid Networks. SteelHead products are available in various form factors as physical appliances, software and virtual appliances and as cloud instances for every type of customer environment – in the data center, branch office, cloud and on the go. Available in this Spec Sheet brochure:

- SteelHead™ CX
- SteelHead™ CX for Amazon Web Services (AWS), VMware® ESX®, and Microsoft® Azure (formerly Cloud Steelhead) cloud platforms
- SteelHead™ Mobile
- SteelHead™ Interceptor, SteelCentral™ Controller or SCC (formerly Central Management Console or CMC), and SteelCentral™ Controller for SteelHead Mobile or SCCM (formerly Steelhead Mobile Controller or SMC)

SteelHead CX: Model Specifications

Model	Branch Office SteelHead				Mid-Size Office SteelHead					
	CX255 Series				CX570 Series			CX770 Series		
Configurations	U	L	M	H	L	M	H	L	M	H
Profile	Desktop									
Upgradeable To	255 L/M/H	255M/H	255H	-	570 M/H	570-H	-	770-M/H	770H	-
Optimized TCP Connections & UDP Flows	50	75	150	230	275 ^(c)	450 ^(c)	700 ^(c)	1,000 ^(c)	1,500	2,500 ^(c)
Optimized SSL/TLS Connections										
Optimized WAN Capacity ^(a)	2 Mbps	6 Mbps			10 Mbps ^(c)	10 Mbps		20 Mbps ^(c)		30 Mbps ^(c)
Network Services - WAN Capacity ^(b)	10 Mbps ^(c)	30 Mbps ^(c)			50 Mbps ^(c)			100 Mbps ^(c)		150 Mbps ^(c)
Network Services - Flows ^(d)	8,000				8,000			16,000		
Network Services - Rules/Classes ^(e)	300				500			1,000		
Data Store Capacity	50 GB				70 GB SSD			150 GB SSD		
Storage Fault Tolerance	-				-			-		
Hot Swappable Drives	-				-			-		
RAM	2 GB				2 GB			4 GB		
Expansion Slots (PCI-e) ^(g)	-				-			-		
Included Bypass Ports (Copper)	2				4			4		
Max. # of Bypass Ports	2				4			4		

SteelHead CX: Model Specifications, continued

Model	Large Office or Data Center SteelHead							
	CX3070 Series			CX5070 Series		CX7070 Series		
	L	M	H	M	H	L	M	H
Profile	1U			2U				
Upgradeable To	3070-M/H	3070-H	-	5070 H	-	7070-M/H	7070-H	-
Optimized TCP Connections & UDP Flows	3,000	6,000	9,000	16,000	30,000	80,000	110,000	180,000
Optimized SSL/TLS Connections								
Optimized WAN Capacity ^(a)	50 Mbps	100 Mbps		200 Mbps	400 Mbps	622 Mbps	1 Gbps	2 Gbps ^{(h)(i)}
Network Services - WAN Capacity ^(b)	250 Mbps	500 Mbps		Unrestricted				
Network Services - Flows ^(d)	48,000			96,000		192,000	256,000	512,000
Network Services - Rules/Classes ^(e)	2,000			4,000				
Data Store Capacity	320 GB SSD			960 GB SSD		1.8 TB SSD	2.4 TB SSD	4.8 TB SSD
Storage Fault Tolerance	RAID ^(f)			RAID ^(f)				
Hot Swappable Drives	4			8		8	10	18
RAM	12 GB			24 GB		48 GB	64 GB	128 GB
Expansion Slots (PCI-e) ^(g)	2			4				
Included Bypass Ports (Copper)	4			4				
Max. # of Bypass Ports	12			20				

NOTE: All WAN capacities, connections, flows and rules/classes specifications listed are maximums and may not be achieved simultaneously and/or in all environments.

(a) Optimized WAN capacity limit is enforced on outbound optimized traffic. Inbound optimized WAN traffic is not capped.

(b) Maximum outbound WAN throughput

(c) RIOS 8.6.2b or later

(d) Inclusive of all optimized and/or managed flows

(e) Maximum number of classes plus rules

(f) RAID1 configuration for HDD, Data store uses fault tolerant striped (FTS) configuration for SSD

(g) Optional Network Bypass cards: Dual and Quad LX and SX GigE Fiber GigE, Quad Copper GigE, 10GbE SR/LR

(h) No enforced optimized WAN bandwidth limit

(i) 7070-H WAN capacity is specified at up to 2 Gbps for Branch-to-Data Center workloads and up to 3 Gbps for Data Center-to-Data Center workloads

SteelHead CX: Power & Physical Specifications

	Branch Office SteelHead	Mid-Size Office SteelHead		Large Office or Data Center SteelHead		
Model	CX255 Series	CX570 Series	CX770 Series	CX3070 Series	CX5070 Series	CX7070 Series
Dual Power Supplies	-	-		✓	✓	
Power [Watts] (Typical)	30	45	50	123	233	416
BTU	102	145	165	418	794	1419
Temperature ⁽ⁱ⁾	0 - 45 deg C / 32 - 113 deg F (Operating) -40 - 65 deg C / -40 - 149 deg F (Storage)			10° to 35°C (50° to 95°F) (Operating) -40 - 70 deg C / -40 - 158 deg F (Storage)		
Relative Humidity ⁽ⁱⁱ⁾	20% - 80% non-condensing (Operating) 5% - 95% non-condensing (Storage)			20% - 80% non-condensing (Operating) ^(iv) 50% - 80% non-condensing (Storage) ^(v)		
Operating Acoustic noise (Typical)	45 dBA			7.0 BA (Operating condition in typical office ambient temperature: 23 +/- 2 deg C)		
System Dimensions (LxWxH) ⁽ⁱⁱⁱ⁾	13.0"x8.0"x1.73" 330x204x44mm			25.21 X 17.24 X 1.7 in 640.43 X 438 X 43.2 mm	27.87 X 17.24 X 3.45 in 707.8 X 438 X 87.6 mm	
Packaging Dimensions	17.7 x 12.2 x 7 in 450x310x180 mm			36" x 24" x 13" inch 914.4 X 609.6 X 330.2 mm	36" x 24" x 14" inch 914.4 X 609.6 X 355.6 mm	
Max Weight (without packaging)	5.5 Lbs 2.4 Kg	6 Lbs 2.7 Kg		27 lbs 12.25 Kg	41 lbs 18.59 kg	41 lbs 18.59 kg 42 lbs 19.05 kg
Rail Information	Included spare part RMK-010, Orderable RMK-016			Mounting Rail Kit Included Orderable Spare Part Numbers: RMK-1-VRAIL, RMK-1-PRAIL		

(i) Operating altitude up to 10,000 feet except in China 6,562 feet (2,000m)

(ii) In China- for use in non-tropical locations

(iii) Length is without bezel

(iv) Max dew point of 21 deg C / 698.8 deg F

(v) Maximum wet bulb of 28 deg C / 82.4 deg F (at temperatures from 25-35 deg C / 77 - 95 deg F)

The availability, export or re-export of these products or specific features are subject to the export laws and regulations of the U.S., EU, Singapore, and the laws and regulations of any applicable foreign agency or authority.

SteelHead CX for Virtual: Model Specifications

Model	VCX255				VCX555			VCX755			VCX1555		
	U	L	M	H	L	M	H	L	M	H	L	M	H
Optimized WAN Capacity	2 Mbps	6 Mbps			6 Mbps	10 Mbps		10 Mbps	20 Mbps		50 Mbps		100 Mbps ^(c)
Optimized TCP and UDP flows	50	75	150	230	250	400	650	900	1,500	2,300	3,000	4,500	6,000
QoS Bandwidth ^(a)	4 Mbps	12 Mbps			12 Mbps	20 Mbps		45 Mbps			100 Mbps		
QoS Rules/Classes ^(b)	No Published Limit (global QOS limit of 2000 rules and 2000 classes)												
Disk Capacity Advised	88 GB				118 GB			140 GB	188 GB		438 GB		
Max Data Store Capacity	50 GB				80 GB			102 GB	150 GB		400 GB		
Virtual CPUs Required (min)	1 x 1.0Ghz				1 x 1.2Ghz			2 x 1.2Ghz			4 x @ 1.2Ghz		
Reserved Memory Required	2GB				2GB			2GB	4GB		8 GB		

SteelHead CX for Virtual: Model Specifications, continued

Model	VCX5055		VCX7055	
	M	H	L	M
Configurations				
Optimized WAN Capacity	200 Mbps ^(c)	400 Mbps ^(c)	622 Mbps ^(c)	1 Gbps ^(c)
Optimized TCP and UDP flows	14,000	25,000	75,000	100,000
QoS Bandwidth ^(a)	Unlimited			
QoS Rules/Classes ^(b)	No Published Limit (global QoS limit of 2000 rules and 2000 classes)			
Disk Capacity Advised	722 GB		1778 GB	2418 GB
Max Data Store Capacity	8 x 80GB		10 x 160GB	14 x 160GB
Virtual CPUs Required (min)	12 x 1.2Ghz		16 x 1.2 Ghz	24 x 1.2 Ghz
Reserved Memory Required	16 GB		32 GB	48 GB

NOTE: All WAN Capacity / Bandwidth, TCP Connections and UDP flows, and QoS specifications listed are maximums and may not be achieved in all environments. The WAN capacity limit is enforced on outbound optimized traffic. Inbound optimized WAN traffic is not capped

(a) Recommended maximum outbound QoS shaping capacity

(b) Total of classes plus rules

(c) SSD or other high IOPS storage medium required for VCX1555/5055/7055 models

Available H/W NIC options are NIC-001-2TX (2 port copper), NIC-002-4TX (4 port copper), NIC-008-2SR (2 port multimode fiber).

Hyper-V is supported only for Models up to VCX 1555H (100Mbps) on Windows Server 2012 and Hyper-V Server 2012 running RiOS 8.0.3 and later. The Riverbed network bypass card is not supported on Hyper-V.

NOTE: Virtual Steelhead guests must run at least RiOS 6.1 or later, and support vSphere 4.0 or later release, using ESX/ESXi 4.0 or later. RiOS 6.5.x and later support ESXi 4.1. RiOS 6.5.2 and later support ESXi 5.0. RiOS 8.6.0 and later support ESXi 5.1. Please refer to the VMware system compatibility guide for servers supported with these VSphere/ESX/ESXi releases.

Riverbed network bypass cards NIC-001-2TX, NIC-002-4TX, and NIC-003-4TX are supported by Virtual Steelhead guests running RiOS 7.0.1 or later.

Riverbed network bypass cards are supported only on ESXi 4.1 and up for all current RiOS releases.

Riverbed network bypass cards NIC-008-2SR is supported by Virtual Steelhead guests on ESXi running RiOS 8.6.0 or later.

SteelHead CX for Amazon Web Services Cloud: Model Specifications

Model	CCX255U	CCX255L	CCX255M	CCX255H	CCX570L	CCX570M	CCX570H	CCX770L
Optimized WAN Capacity ^(a)	2 Mbps	6 Mbps	6 Mbps	6 Mbps	6 Mbps	10 Mbps	10 Mbps	10 Mbps
Optimized TCP Connections ^(b)	50	75	150	230	250	400	650	900
Total Elastic Block Store (EBS) Volume Size	440 GB	440 GB	440 GB	440 GB	440 GB	460 GB	460 GB	460 GB
Amazon Machine Instance (AMI) Size ^(c)	m1.small	m1.small	m1.small	m1.small	m3.large	m3.large	m3.large	m3.large

SteelHead CX for Amazon Web Services Cloud: Model Specifications, continued

Model	CCX770M	CCX1555L	CCX1555M	CCX 3070H	CCX PERF-TIER4	CCX PERF-TIER4-H
Optimized WAN Capacity ^(a)	10 Mbps	50 Mbps	50 Mbps	150 Mbps	NA	NA
Optimized TCP Connections ^(b)	1500	3000	4500	9000	NA	NA
Total Elastic Block Store (EBS) Volume Size	460 GB	460 GB	460 GB	460 GB	NA	NA
Amazon Machine Instance (AMI) Size ^(c)	m3.large	m3.large	m3.large	m3.xlarge	NA	NA

a) Optimized WAN Capacity-Inbound and outbound

(b) Optimized WAN Capacity and TCP connections are limited up to the listed amounts

(c) CPU and Memory capacity are fixed for any Amazon Machine Instance (AMI) size.

(d) CCX models are supported starting RiOS 8.6

(e) AWS may not support creation of m1.small instance in all regions.

SteelHead CX for VMware ESX Cloud: Model Specifications

Model	CCX255U	CCX255L	CCX255M	CCX255H	CCX570L	CCX570M	CCX570H	CCX770L
Optimized WAN Capacity ^(a)	2 Mbps	6 Mbps	6 Mbps	6 Mbps	6 Mbps	10 Mbps	10 Mbps	10 Mbps
Optimized TCP Connections ^(b)	50	75	150	230	250	400	650	900
Disk Capacity Required	480 GB	480 GB	480 GB	480 GB	480 GB	480 GB	480 GB	480 GB
Virtual CPUs Required	1 x 1.0Ghz	1 x 1.0Ghz	1 x 1.0Ghz	1 x 1.0Ghz	1 x 1.2Ghz	1 x 1.2Ghz	1 x 1.2Ghz	2 x 1.2Ghz
Reserved Memory Required	2 GB	2 GB	2 GB	2 GB	3 GB	3 GB	3 GB	3 GB

SteelHead CX for VMware ESX Cloud: Model Specifications, continued

Model	CCX770M	CCX1555L	CCX1555M	CCX 3070H	CCX PERF-TIER4	CCX PERF-TIER4-H
Optimized WAN Capacity ^(a)	10 Mbps	50 Mbps	50 Mbps	150 Mbps	NA	NA
Optimized TCP Connections ^(b)	1500	3000	4500	9000	NA	NA
Disk Capacity Required	480 GB	480 GB	480 GB	480 GB	NA	NA
Virtual CPUs Required	2 x 1.2Ghz	4 x 1.2Ghz	4 x 1.2Ghz	4 X 1.2 GHz	NA	NA
Reserved Memory Required	3 GB	8 GB	8 GB	12 GB	NA	NA

(a) Optimized WAN Capacity-Inbound and outbound

(b) Optimized WAN Capacity and TCP connections are limited up to the listed amounts

(c) CCX models are supported starting RiOS 8.6

Note: Please refer to the VMware system compatibility guide for servers supported with these VSphere releases

SteelHead CX for Microsoft Azure Cloud: Model Specifications

Model	CCX255U	CCX255L	CCX255M	CCX255H	CCX570L	CCX570M	CCX570H	CCX770L
Optimized WAN Capacity ^(a)	2 Mbps	6 Mbps	6 Mbps	6 Mbps	6 Mbps	10 Mbps	10 Mbps	10 Mbps
Optimized TCP Connections ^(b)	50	75	150	230	250	400	650	900
Total Azure Blob Storage Volume Size	440 GB	440 GB	440 GB	440 GB	460 GB	460 GB	460 GB	460 GB
Azure Target	D1	D1	D1	D1	D1	D1	D1	A2

SteelHead CX for Microsoft Azure Cloud: Model Specifications, continued

Model	CCX770M	CCX1555L	CCX1555M	CCX 3070H	CCX PERF-TIER4	CCX PERF-TIER4-H
Optimized WAN Capacity ^(a)	10 Mbps	50 Mbps	50 Mbps	150 Mbps	400 Mbps	400 Mbps
Optimized TCP Connections ^(b)	1500	3000	4500	9000	1000	30000
Total Azure Blob Storage Volume Size	460 GB	460 GB	460 GB	460 GB	960 GB	960 GB
Azure Target	A2	A3	A3	D3	D14 v2	D14 v2

(a) Optimized WAN Capacity-Inbound and outbound

(b) Optimized WAN Capacity and TCP connections are limited up to the listed amounts

(c) CCX models are supported starting RiOS 8.6. CCX PERF-TIERx models are supported starting RiOS 9.2

SteelHead Interceptor, SteelCentral Controller for SteelHead or SCC (formerly Central Management Console or CMC), SteelCentral Controller for SteelHead Mobile or SCCM (formerly Steelhead Mobile Controller or SMC): Model Specifications

Model	Data Center		Management	
	INT9600	INT9350	SCC1000	SMC9000
Profile	2U	3U	1U	1U
Effective LAN Throughput	40 Gbps ^{(a)(b)}	16 Gbps ^(g)	-	-
Optimized TCP connections	2,500,000 ^(c)	1,000,000 ^(e)	-	-
Storage Fault Tolerance	RAID	RAID	-	-
Front Swappable Drives	2 ^(d)	3 ^(d)	2 ^(f)	2 ^(f)
RAM	32 GB	8 GB	32 GB	16 GB
Expansion Slots (PCI-e)	6 ^(e)	4 ^(e)	-	-
Included Bypass Ports (Copper)	4	4	-	-
Max. # of Bypass Ports	24	20	-	-
Max. # of Manageable Appliances	-	-	2000	-

(a) NOTE: All LAN Capacity, Bandwidth, and TCP Connections listed are maximums and may not be achieved in all environments

(b) Requires 5 or greater 10G in-path interfaces and xbridge enabled

(c) TCP connections can be expected up to the amount listed

(d) Hot swappable disks

(e) Optional Network Bypass cards: Dual and Quad LX and SX GigE Fiber GigE, Quad Copper GigE, Dual 10GbE SR/LR

(f) Internal hard disks

(g) Multiple inpath interfaces were used to achieve this throughput. Up to 40Gbps throughput (rx+tx traffic). Requires version INT 3.0 with xbridge enabled. WCCP and PBR configurations are not supported when xbridge is enabled

SteelHead Interceptor, SteelCentral Controller for SteelHead or SCC (formerly Steelhead Central Management Console or CMC), SteelCentral Controller for SteelHead Mobile or SCCM (formerly Steelhead Mobile Controller or SMC): Model Specifications: Power & Physical Specifications

Datacenter		
Model	INT9600	INT9350
Dual Power Supplies	✓	✓
Power [Watts] (Typical)	227	320
BTU	774	1091
Temperature ⁽ⁱ⁾	10 – 35 deg C (50° to 95°F) (Operating) -40 - 70 deg C / -40 - 158 deg F (Storage)	10 - 40 deg C / 50 - 95 deg F (Operating) -40 - 65 deg C / -40 - 149 deg F (Storage)
Relative Humidity ⁽ⁱⁱ⁾	50% to 90%, non-condensing with a maximum wet bulb of 28 deg C (at temperatures from 25 to 35 deg C) ^(iv)	20% - 80% non-condensing (Operating) 5% - 95% non-condensing (Storage)
Operating Acoustic noise	7.0 BA (Operating condition in typical office ambient temperature: 23 +/- 2 deg C)	61 dBA Sound Pressure (Typical)
System Dimensions (LxWxH) ⁽ⁱⁱⁱ⁾	27.87 X 17.24 X 3.45 in 707.8 X 438 X 87.6 mm	25.72x17.0x5.2 in 653.4x431.6x131.9 mm
Packaging Dimensions	36 x 24 x 14 inch 914.4 X 609.6 X 355.6 mm	34.1x23.7x15.9 in 866x602x403 mm
Max Weight (without packaging)	40 Lbs/ 18.14 Kg	51Lbs/ 23.2Kg
Rail Information	Mounting Rail Kit Included Orderable Spare Part Numbers: RMK-1-VRAIL, RMK-1-PRAIL	Mounting rail kit included. Orderable spare part RMK-003

Management		
Model	SCC1000	SMC9000
Dual Power Supplies	-	
Power [Watts] (Typical)	50	
BTU	165	
Temperature ⁽ⁱ⁾	0 - 45 deg C / 32 - 113 deg F (Operating) -40 - 65 deg C / -40 - 149 deg F (Storage)	
Relative Humidity ⁽ⁱⁱ⁾	20% - 80% non-condensing (Operating) 5% - 95% non-condensing (Storage)	
Operating Acoustic noise	45 dBA	
System Dimensions (LxWxH) ⁽ⁱⁱⁱ⁾	13.0"x8.0"x1.73" 330x204x44mm	
Packaging Dimensions	17.7 x 12.2 x 7 in 450x310x180 mm	
Max Weight (without packaging)	6lbs 2.7kg	
Rail Information	Included spare part RMK-010, Orderable RMK-016	

(i) Operating altitude up to 10,000 feet except in China 6,562 feet (2,000m)

(ii) In China- for use in non-tropical locations

(iii) Length is without bezel

(iv) Shipping Humidity Spec for CXA-xxx70/INT9600 models

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SteelHead Mobile: System Requirements

SteelHead Mobile			
Operating System	Version 4.6 & earlier Windows 2000 SP4, XP SP2 (32 bit versions only); Vista and Windows 7 (32 bit and 64 bit versions). Windows 8 (32 bit and 64 bit versions), Mac OSX 10.6, 10.7 and 10.8	Version 4.7 Windows 7 (32 and 64 bit), Windows 8 (32 and 64 bit), 8.1 (64 bit), Mac OSX 10.8, 10.9 and 10.10	Version 4.8 Windows 10 (32 & 64 bit), Windows 7 (32 & 64 bit), Windows 8 (32 & 64 bit), 8.1 (64 bit), Mac OSX 10.8, 10.9 and 10.10
CPU	1GHz or higher		
Memory	2GB or higher		
Data Store	256 MB free disk space (min. required)		
VSP CPU & Memory Requirements	Minimum 1 CPU (1GHz or higher) & 3 GB or higher		
SteelHead Appliance⁽¹⁾	Minimum 1 Physical (CX, EX), Virtual (VCX) or Cloud SteelHead (CCX) needed on the Server Side		
SteelCentral Controller for Mobile SteelHead - SCCM (formerly SMC)	Required: Either SteelHead Mobile Controller Appliance <u>or</u> SteelHead Mobile Controller Virtual Edition		

SteelHead Mobile: Software Specifications

SteelHead Mobile	
Concurrent Clients Supported per SCCM	20,000 (SMC9000) / 4,000 (SMC8650) & (SMC-Virtual Edition) ⁽⁵⁾
Concurrent Clients Supported with SCCM Cluster⁽²⁾	(Number of SMC9000s x 20,000) or (Number of SMC8650s/SMC-Virtual) x 4,000
VPN Compatibility⁽³⁾	Cisco, Juniper, OpenVPN, Microsoft, Citrix, Array, Checkpoint, F5, Dell Sonicwall Aventail, Fortinet, NetMotion Mobile VPN, Apple VN, Palo Alto Global Protect (version 4.7 onwards)

(1) At least one SteelHead appliance is required. Recommend running RiOS version 8.6 or higher on it.

(2) SCCMs (SMCs) can operate in clustered mode to support additional SteelHead Mobile clients. A cluster can have a mix of SMC8650 and SMC9000 models but is not recommended. Up to 100,000 concurrent clients can be supported by minimum of 5 SMC9000s and up to 20,000 concurrent clients can be supported by a cluster of 5 SMC 8650s.

(3) VPN compatibility may be impacted by vendor software version, client configuration, and other factors.

(4) SMC9000 is supported on SHM 4.5.1 and later versions only.

(5) Up to 100 clients for Riverbed RSP/VSP platforms; Up to 4000 clients for VMWare ESX and EX v2 platforms. Please refer to the SteelHead Mobile Installation Guide for details on VM resource requirements.