

STEELHEAD PRODUCT FAMILY SPEC SHEET

Riverbed® SteelHead™ deliver acceleration everywhere for end users while enhancing IT control and visibility for Wide Area and Hybrid Networks. SteelHead products are available as various form factors as physical appliances, software and virtual appliance 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™ DX
- SteelHead™ EX
- SteelFusion™ Core (formerly Granite Core)
- SteelHead™ CX for Amazon Web Services (AWS), VMware® ESX®, and Microsoft® Azure (formerly Cloud Steelhead) cloud platforms
- SteelHead™ Mobile
- SteelHead™ Interceptor, SteelCentral™ Controller (formerly Central Management Console or CMC), and SteelCentral™ Mobile Controller (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 WAN Capacity | 2Mbps | 6Mbps | | | 6 Mbps | 10 Mbps | 10 Mbps | 10 Mbps | 10 Mbps | 20 Mbps |
| Optimized TCP and UDP flows | 50 | 75 | 150 | 230 | 250 | 400 | 650 | 900 | 1,500 | 2,300 |
| QoS Bandwidth ^(a) | 4 Mbps | 12 Mbps | | | 12 Mbps | 20 Mbps | 20 Mbps | 45 Mbps | 45 Mbps | 45 Mbps |
| QoS Rules/Classes ^(b) | 300 | | | | 500 | | | 1000 | 1,000 | 1,000 |
| Data Store Capacity | 50GB | | | | 70 GB SSD | | | 150 GB SSD | | |
| Storage Fault Tolerance | - | | | | - | | | - | | |
| Hot Swappable Drives | - | | | | - | | | - | | |
| RAM | 2GB | | | | 2 GB | | | 4 GB | | |
| Expansion Slots (PCI-e) ^(f) | - | | | | - | | | - | | |
| Onboard Bypass Ports (Copper) | 2 | | | | 4 | | | 4 | | |
| Max. # of Bypass Ports | 2 | | | | 4 | | | 4 | | |

SteelHead CX: Model Specifications, continued

| Large Office or Data Center SteelHead | | | | | | | | |
|--|------------------------|------------------------|-------------------------|---------------------|----------|---------------|------------|-------------------------|
| Model | CX1555 Series | | | CX5055 series | | CX7055 series | | |
| Configurations | L | M | H | M | H | L | M | H |
| Profile | 1U | | | 2U | | | | |
| Upgradeable To | 1555-M/H | 1555H | - | 5055 H | - | 7055-M/H | 7055-H | - |
| Optimized WAN Capacity | 50 Mbps ^(g) | 50 Mbps ^(g) | 100 Mbps ^(g) | 200 Mbps | 400 Mbps | 622 Mbps | 1 Gbps | 1.5 Gbps ^(h) |
| Optimized TCP and UDP flows | 3,000 | 4,500 | 6,000 | 14,000 | 25,000 | 75,000 | 100,000 | 150,000 |
| QoS Bandwidth ^(a) | 100 Mbps | 100 Mbps | 100 Mbps | No limit | | | | |
| QoS Rules/Classes ^(b) | 2,000 | 2,000 | 2,000 | 4000 | | | | |
| Data Store Capacity | 400 GB | 400 GB | 320 GB SSD | 640 GB SSD | | 1.6TB SSD | 2.4 TB SSD | 4.8 TB SSD |
| Storage Fault Tolerance | RAID ^(c) | | | RAID ^(e) | | | | |
| Hot Swappable Drives | 4 | 4 | 4 | 10 | | 12 | 17 | 18 |
| RAM | 8 GB | | | 16 GB | | 32 GB | 48 GB | 64 GB |
| Expansion Slots (PCI-e) ^(f) | 2 | | | 4 | | | | |
| Onboard Bypass Ports (Copper) | 4 | | | 4 | | | | |
| Max. # of Bypass Ports | 12 | | | 20 | | | | |

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) Includes HDD's with SSD's

(d) RAID10 configuration for HDD, Data store uses fault tolerant striped (FTS) configuration for SSD/HDD

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

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

(g) Requires RiOS 7.0.4 onwards

(h) No enforced optimized WAN bandwidth limit

SteelHead CX: Power & Physical Specifications

| Model | Branch Office SteelHead | | Mid-Size Office SteelHead | | Large Office or Data Center SteelHead | | |
|--|---|--------------|---|---|--|--|-------------------|
| | CX255 Series | CX570 Series | CX770 Series | CX1555 Series | CX5055 Series | CX7055 Series | |
| Dual Power Supplies | - | | - | | ✓ | | |
| Power [Watts] (Typical) | 30 | 45 | 50 | 175 | 375 | 420 | |
| BTU | 102 | 145 | 165 | 605 | 1280 | 1425 | |
| Temperature ⁽ⁱⁱ⁾ | 0 - 45 deg C / 32 - 113 deg F (Operating) -40 - 65 deg C / -40 - 149 deg F (Storage) | | 0 - 45 deg C / 32 - 113 deg F (Operating) -40 - 65 deg C / -40 - 149 deg F (Storage) | | 10 - 40 deg C / 50 - 104 deg F (Operating) -40 - 65 deg C / -40 - 149 deg F (Storage) | | |
| Relative Humidity ⁽ⁱ⁾ | 20% - 80% non-condensing (Operating) 5% - 95% non-condensing (Storage) | | | | | | |
| Operating Acoustic noise (Typical) | 45 dBA | | | 62 dBA | | 65 dBA | |
| System Dimensions (LxWxH) ⁽ⁱⁱⁱ⁾ | 13.0"x8.0"x1.73" 330x204x44mm | | | 25.4 x 17.2 x 1.71 in 645.4 x 436 x 43.5 mm | | 25.4 x 17.2 x 3.43 in 645.4 x 436 x 87.1 mm | |
| Packaging Dimensions | 17.7 x 12.2 x 7 in 450x310x180 mm | | | 36.25 x 23.38 x 12.5 in 920.8 x 593.7 x 317.5 mm | | | |
| Max Weight (without packaging) | 5.5 Lbs 2.4 Kg | | 6 Lbs 2.7 Kg | | 36 Lbs 16.36 Kg | 52 Lbs 23.6 Kg | 54 Lbs 24.5 Kg |
| Rail Information | Included spare part RMK-010, Orderable RMK-016 | | | | Mounting rail kit included. Orderable spare part RMK-002A | | |

(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

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 DX: Model Specifications

| Model | DX8000 |
|---|----------|
| Profile | 2U |
| Optimized WAN Capacity ^(a) | 2 Gbps |
| Optimized TCP and UDP flows | 10,000 |
| QoS Bandwidth ^(b) | No limit |
| QoS Rules/Classes ^(c) | 4000 |
| RAM | 128 GB |
| Hard Disk | 1 TB |
| Hot Swappable Drives | 2 |
| Included Bypass Ports (10 GbE SR Fibre) | 2 |
| Included Bypass Ports (1 GbE Copper) | 4 |
| Expansion Slots (PCI-e) ^(d) | 3 |
| Max. # of Bypass Ports | 18 |

NOTE: All WAN Capacity / Bandwidth, TCP Connections and UDP flows, and QoS specifications listed are maximums and may not be achieved in all environments.

(a) No enforced optimized WAN bandwidth limit

(b) Recommended maximum outbound QoS shaping capacity

(c) Total of classes plus rules

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

SteelHead DX: Power & Physical Specifications

| Model | DX8000 |
|--|--|
| Dual Power Supplies | ✓ |
| Power [Watts] (Typical) | 450 |
| BTU | 1535 |
| Temperature ⁽ⁱ⁾ | 10 - 40 deg C / 50 - 104 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 (Typical) | 65 dBA |
| System Dimensions (LxWxH) ⁽ⁱⁱⁱ⁾ | 25.4 x 17.2 x 3.43 in 645.4 x 436 x 87.1 mm |
| Packaging Dimensions | 36.25 x 23.38 x 12.5 in 920.8 x 593.7 x 317.5 mm |
| Max Weight (without packaging) | 54 Lbs 24.5 Kg |
| Rail Information | Mounting rail kit included. Orderable spare part RMK-002A |

(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

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SteelHead EX: Model Specifications

| Model | Small Office SteelHead | | | | Mid-Size Office SteelHead | | |
|---|------------------------|---------|---------|---------|---------------------------|---------|---------|
| | EX560 Series | | | | EX760 Series | | |
| Configurations | G | L | M | H | L | M | H |
| Profile | 1U | | | | | | |
| Upgradeable To | 560-L/M/H | 560-M/H | 560-H | - | 760-M/H | 760-H | - |
| Optimized WAN Capacity | 6 Mbps | 6 Mbps | 10 Mbps | 10 Mbps | 10 Mbps | 10 Mbps | 20 Mbps |
| Optimized TCP & UDP flows | N/A | 250 | 400 | 650 | 900 | 1500 | 2300 |
| QoS Bandwidth ^(a) | 12 Mbps | 12 Mbps | 20 Mbps | 20 Mbps | 45 Mbps | 45 Mbps | 45 Mbps |
| QoS Rules/Classes ^(b) | 500 | 500 | 500 | 500 | 1000 | 1,000 | 1,000 |
| Data Store Capacity (SSD) | 40 GB | 40 GB | 70 GB | 70 GB | 140 GB | 140 GB | 140 GB |
| Advanced Tiering Capacity | NA | | | | | | |
| VSP partition (no granite license) ^(f) | N/A | 300 GB | | | 300 GB | | |
| Granite block store ^(g) | 380 GB ^(g) | | | | 380 GB ^(g) | | |
| Storage Fault Tolerance | - | | | | | | |
| Hot Swappable Drives | - | | | | | | |
| RAM (without Granite license) | N/A | 8 GB | | | 16 GB | | |
| Available for VSP (EX version 2) ^(h) | | 4 GB | | | 8 GB | | |
| RAM (with Granite license) ^(e) | 16 GB | | | | 16 GB | | |
| Available for VSP (EX version 2) ^(h,i) | 9GB ^(l) | 9 GB | | | 8 GB | | |
| Expansion Slots (PCI-e) ^(j) | - | | | | | | |
| Included Bypass Ports (Copper) | 4 | | | | | | |
| Max. # of Bypass Ports | 4 | | | | | | |

SteelHead EX: Model Specifications, continued

| Model | Large Office SteelHead | | | | | | | | | |
|---|------------------------------|-------------|-----------|----------|----------------------------|------------------------------|-------------|-----------|----------|----------------------------|
| | EX1160 Series | | | | | EX1260 Series (2 TB) | | | | |
| Configurations | G | L | M | H | VH | G | L | M | H | VH |
| Profile | 1U | | | | | 2U | | | | |
| Upgradeable To | 1160-L/M/H/VH ⁽ⁿ⁾ | 1160-M/H/VH | 1160-H/VH | 1160-VH | - | 1260-L/M/H/VH ⁽ⁿ⁾ | 1260-M/H/VH | 1260-H/VH | 1260-VH | - |
| Optimized WAN Capacity | 10 Mbps | 10 Mbps | 10 Mbps | 20 Mbps | 50/100 Mbps ^(k) | 10 Mbps | 10 Mbps | 10 Mbps | 20 Mbps | 50/100 Mbps ^(k) |
| Optimized TCP & UDP flows | N/A | 900 | 1,500 | 2,300 | 6,000 | N/A | 900 | 1,500 | 2,300 | 6,000 |
| QoS Bandwidth ^(a) | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps |
| QoS Rules/Classes ^(b) | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Data Store Capacity (SSD) | 140 GB | 140 GB | 140 GB | 140 GB | 280 GB | 140 GB | 140 GB | 140 GB | 140 GB | 280 GB |
| Advanced Tiering Capacity | NA | | | | | | | | | |
| VSP partition (no granite license) ^(f) | N/A | 415 GB | | | | N/A | 860 GB | | | |
| Granite block store ^(g) | 760 GB ^(g) | | | | | 1580 GB ^(g) | | | | |
| Storage Fault Tolerance | RAID ^(c) | | | | | RAID ^(d) | | | | |
| Hot Swappable Drives | 4 | | | | | 6 | | | | 8 |
| RAM (without Granite license) | N/A | 20 GB | | | 24 GB | N/A | | | | |
| Available for VSP (EX version 2) ^(h) | 10 GB | | | | 12 GB | N/A | | | | |
| RAM (with Granite license) ^(e) | 20/48 GB | | | | 24/48 GB | 72 GB | | | | |
| Available for VSP (EX version 2) ^(h,i) | 10/32 GB | 10/32 GB | | | 12/32 GB | 48 GB | | | | |
| Expansion Slots (PCI-e) ^(j) | 2 | | | | | 4 | | | | |
| Included Bypass Ports (Copper) | 4 | | | | | 4 | | | | |
| Max. # of Bypass Ports | 8 ^(m) | | | | | 8 ^(m) | | | | |

SteelHead EX: Model Specifications, continued

| Model | Large Office SteelHead | | | | | | | |
|---|------------------------------|-------------|-----------|----------|----------------------------|------------------------|----------|----------|
| | EX1260 Series (4 TB) | | | | | EX1360 Series (10 TB) | | |
| Configurations | G | L | M | H | VH | G | L | M |
| Profile | 2U | | | | | 2U | | |
| Upgradeable To | 1260-L/M/H/VH ⁽ⁿ⁾ | 1260-M/H/VH | 1260-H/VH | 1260-VH | - | 1360-L/M | 1360-M | - |
| Optimized WAN Capacity | 10 Mbps | 10 Mbps | 10 Mbps | 20 Mbps | 50/100 Mbps ^(k) | 50 Mbps | 50 Mbps | 100 Mbps |
| Optimized TCP & UDP flows | N/A | 900 | 1,500 | 2,300 | 6,000 | N/A | 4,500 | 6,000 |
| QoS Bandwidth ^(a) | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps | 100 Mbps |
| QoS Rules/Classes ^(b) | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Data Store Capacity (SSD) | 140 GB | 140 GB | 140 GB | 140 GB | 280 GB | 320 GB | | |
| Advanced Tiering Cache (SSD) | NA | | | | | | | |
| VSP partition (no granite license) ^(f) | N/A | 1850 GB | | | | N/A | 4000 GB | |
| Granite block store ^(g) | 3574 GB ^(g) | | | | | 9400 GB ^(g) | | |
| Storage Fault Tolerance | RAID ^(d) | | | | | RAID ^(d) | | |
| Hot Swappable Drives | 10 | | | | 12 | 24 | | |
| RAM (without Granite license) | N/A | | | | | | | |
| Available for VSP (EX version 2) ^(h) | | | | | | | | |
| RAM (with Granite license) ^(e) | 88 GB | | | | | 128 GB | | |
| Available for VSP (EX version 2) ^(h,i) | 64 GB | | | | | 64 GB | 64 GB | |
| Expansion Slots (PCI-e) ^(l) | 4 | | | | | 4 | | |
| Included Bypass Ports (Copper) | 4 | | | | | 4 | | |
| Max. # of Bypass Ports | 8 ^(m) | | | | | 8 ^(m) | | |

SteelHead EX: Model Specifications, continued

| | Large Office SteelHead | | |
|---|------------------------|----------|----------|
| Model | EX1360P Series (10 TB) | | |
| Configurations | G | L | M |
| Model | 2U | | |
| Configurations | 1360- L/M | 1360-M | - |
| Profile | 50 Mbps | 50 Mbps | 100 Mbps |
| Upgradeable To | N/A | 4,500 | 6,000 |
| Optimized WAN Capacity | 100 Mbps | 100 Mbps | 100 Mbps |
| Optimized TCP & UDP flows | 1,000 | 1,000 | 1,000 |
| QoS Bandwidth ^(a) | 320GB | | |
| QoS Rules/Classes ^(b) | 1TB | | |
| Data Store Capacity (SSD) | 4000 GB | | |
| Advanced Tiering Cache (SSD) | 9400 GB ^(g) | | |
| VSP partition (no granite license) ^(f) | RAID ^(d) | | |
| Granite block store ^(g) | 24 | | |
| Storage Fault Tolerance | | | |
| Hot Swappable Drives | N/A | | |
| RAM (without Granite license) | 128 GB | | |
| Available for VSP (EX version 2) ^(h) | 64 GB | 64 GB | |
| RAM (with Granite license) ^(e) | 4 | | |
| Available for VSP (EX version 2) ^(h,i) | 4 | | |
| Expansion Slots (PCI-e) ^(j) | 8 ^(m) | | |

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) RAID 1 configuration for HDD, Data store uses fault tolerant striped (FTS) configuration for SSD

(d) RAID 10 configuration for HDD, Data store uses fault tolerant striped (FTS) configuration for SSD

(e) Granite requires extra memory. In some models - EX760, EX1160 and EX1260 - the memory is always included. On other models (EX560), extra memory is needed to support Granite. EX560 requires 16GB of RAM when configured for Granite.

(f) The VSP partition can be larger with the Granite license. For more details, see the "Steelhead EX Installation and Configuration Guide". These numbers require Steelhead EX v2.1 or higher

(g) This is the maximum Granite space. Depending on the disk setup, this may be shared with VSP. For more details, see the "Steelhead EX Installation and Configuration Guide"

(h) The RAM available to VSP differs between EX version 1 and EX version 2. In EX version 1, the RAM noted here is given to the VMs. In EX version 2, the RAM noted here is the Host Physical Memory to VSphere. The memory available to guests will be lower than this number. For more details on VSphere memory management, please refer to the VSphere Resource Management Guide at <http://pubs.vmware.com/vsphere-51/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-51-resource-management-guide.pdf>

(i) EX1260 memory can be upgraded to 32GB (2TB model) and 64GB (4TB model)

(j) Optional Network Bypass cards: Quad copper GbE, Dual & Quad LX/SX Fiber GigE (1X4 port or 2X2 port NIC's)

- (k) 100 Mbps WAN B/W license available on the EX1160 VH/1260 VH only.
- (l) VSP version 2 requires EX v2.1 or higher
- (m) The 1160, 1260 and 1360 support 1 add-on 4 port card that can be used either for 4 bypass ports or as 4 data ports
- (n) Upgrading from a dedicated Granite appliance to VH would involve a two-step process, first to L/M/H then to VH

SteelHead EX: Power & Physical Specifications

| | Small Office Steelhead | Mid-Size Office Steelhead | Large Office or Data Center Steelhead | | | Data Center | |
|--|--|--|--|-------------------|-------------------|--------------------|-------------------|
| Model | EX560/760 Series | 1160 Series | EX1260 Series | EX1360 Series | EX1360P Series | GC2000 | GC3000 |
| Dual Power Supplies | - | ✓ | ✓ | | | | |
| Power [Watts] (Typical) | 85 | 175 | 355 | 505 | 515 | 330 | 400 |
| BTU | 295 | 605 | 1215 | 1726 | 1753 | 1130 | 1368 |
| Temperature ⁽ⁱ⁾ | 10 - 40 deg C / 50 - 104 deg F (Operating) -40 - 65 deg C / -40 - 149 deg F (Storage) | | | | | | |
| Relative Humidity ⁽ⁱ⁾ | 20% - 80% non-condensing (Operating) 5% - 95% non-condensing (Storage) | | | | | | |
| Operating Acoustic noise (Typical) | 57 dBA | 62 dBA | 65 dBA | 65 dBA | 65 dBA | 65dBA | 65 dBA |
| System Dimensions (LxWxH) ⁽ⁱⁱⁱ⁾ | 15.52 x 17.09 x 1.66 in 394.3 x 434.0 x 42.4 mm | 25.4 x 17.2 x 1.71 in 645.4 x 436 x 43.5 mm | 25.4 x 17.2 x 3.43 in 645.4 x 436 x 87.1 mm | | | | |
| Packaging Dimensions | 36.25 x 23.38 x 12.5 in 920.8 x 593.7 x 317.5 mm | | | | | | |
| Max Weight (without packaging) | 17.76 Lbs 8.06 Kg | 36 Lbs 16.36 Kg | 58 Lbs 23.36 Kg | 60 Lbs 27.2 Kg | 60 Lbs 27.2 Kg | 58 Lbs 23.36 Kg | 60 Lbs 27.2 Kg |
| Rail Information | Orderable spare part RMK-005 | Mounting rail kit included. Orderable spare part RMK-002A | | | | | |

- (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

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SteelFusion Core (formerly Granite Core): Model Specifications

| SteelFusion Core | | | | | | | | | | | | | |
|-----------------------------------|-------------|-----------|-------|-------------|-------|---------------|-------------|-----------|-------|-------------|----------|--------|--|
| Model | 1000 Series | | | 1500 Series | | | 2000 Series | | | 3000 Series | | | |
| Configurations | U | L | M | L | M | L | M | H | VH | L | M | H | |
| Profile | Virtual | | | | | 2U | | | | 2U | | | |
| Upgradeable To | VGC1000-L/M | VGC1000-M | - | VGC1500-M | - | GC2000-M/H/VH | GC2000-H/VH | GC2000-VH | - | GC3000-M/H | GC3000-H | - | |
| Number of LUNs | 10 | 20 | 40 | 60 | 60 | 20 | 40 | 80 | 160 | 200 | 250 | 300 | |
| Number of branches ⁽ⁱ⁾ | 5 | 10 | 20 | 30 | 30 | 10 | 20 | 40 | 80 | 100 | 125 | 150 | |
| Data set size ^(j) | 2 TB | 5 TB | 10 TB | 20 TB | 35 TB | 5 TB | 10 TB | 20 TB | 35 TB | 50 TB | 75 TB | 100 TB | |
| Front Swappable Drives | N/A | | | | | 2 | | | | 2 | | | |
| RAM | | | | | | 24 GB | | | | 128 GB | | | |
| Expansion Slots (PCI-e) | | | | | | 4 | | | | 4 | | | |
| Included Ports (Copper) | | | | | | 6 | | | | 6 | | | |
| Max. # of Ports | | | | | | 10 | | | | 10 | | | |

(j) Recommended size depending on data type

(i) Assumes 2 LUNs per branch

SteelHead CX for Virtual: Model Specifications

| Model | VCX255 | | | | VCX555 | | | VCX755 | | | VCX1555 | | |
|----------------------------------|--|---------|-----|-----|------------|---------|-----|------------|---------|-------|--------------|-------------------------|-------|
| Configurations | 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 | 10 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 | m1.large | m1.large | m1.large | m1.large |

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

| Model | CCX770M | CCX1555L | CCX1555M |
|---|----------|----------|----------|
| Optimized WAN Capacity ^(a) | 10 Mbps | 50 Mbps | 50 Mbps |
| Optimized TCP Connections ^(b) | 1500 | 3000 | 4500 |
| Total Elastic Block Store (EBS) Volume Size | 460 GB | 460 GB | 460 GB |
| Amazon Machine Instance (AMI) Size ^(c) | m1.large | m1.large | m1.large |

(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

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 | 2GB | 2GB | 2GB | 2GB | 3GB | 3GB | 3GB | 3GB |

SteelHead CX for VMware ESX Cloud: Model Specifications, continued

| Model | CCX770M | CCX1555L | CCX1555M |
|--|------------|------------|------------|
| Optimized WAN Capacity ^(a) | 10 Mbps | 50 Mbps | 50 Mbps |
| Optimized TCP Connections ^(b) | 1500 | 3000 | 4500 |
| Disk Capacity Required | 480 GB | 480 GB | 480 GB |
| Virtual CPUs Required | 2 x 1.2Ghz | 4 x 1.2Ghz | 4 x 1.2Ghz |
| Reserved Memory Required | 3GB | 8GB | 8GB |

(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 Elastic Block Store (EBS) Volume Size | 440 GB | 440 GB | 440 GB | 440 GB | 460 GB | 460 GB | 460 GB | 460 GB |
| Azure Target | Small | Small | Small | Small | Medium | Medium | Medium | Medium |

SteelHead CX for Microsoft Azure Cloud: Model Specifications, continued

| Model | CCX770M | CCX1555L | CCX1555M |
|---|---------|----------|----------|
| Optimized WAN Capacity ^(a) | 10 Mbps | 50 Mbps | 50 Mbps |
| Optimized TCP Connections ^(b) | 1500 | 3000 | 4500 |
| Total Elastic Block Store (EBS) Volume Size | 460 GB | 460 GB | 460 GB |
| Azure Target | Medium | Large | Large |

(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

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

| Model | Data Center | Management | |
|--|------------------------|------------------|------------------|
| | INT9350 | CMC8150 | SMC9000 |
| Profile | 3U | 1U | 1U |
| Optimized WAN Capacity ^(a) | 40 Gbps ^(b) | - | - |
| Optimized TCP and UDP flows ^(c) | 1,000,000 | - | - |
| Storage Fault Tolerance | RAID | RAID | - |
| Front Swappable Drives | 3 ^(d) | 2 ^(d) | 2 ^(f) |
| RAM | 8GB | 6GB | 16 GB |
| Expansion Slots (PCI-e) ^(e) | 4 | - | - |
| Onboard Bypass Ports (Copper) | 4 | - | - |
| Max. # of Bypass Ports | 20 | - | - |

- (a) NOTE: All WAN Capacity / Bandwidth, TCP Connections and UDP flows 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
- (b) 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
- (c) TCP and UDP flows 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

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

| Model | Datacenter | Management | |
|--|---|---|--|
| | INT9350 | CMC8150 | SMC9000 |
| Dual Power Supplies | ✓ | (Optional) | - |
| Power [Watts] (Typical) | 320 | 153 | 50 |
| BTU | 1091 | 515 | 165 |
| Temperature ⁽ⁱⁱⁱ⁾ | 10 - 40 deg C / 50 - 95 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 | 61 dBA Sound Pressure (Typical) | | |
| System Dimensions (LxWxH) ⁽ⁱⁱⁱ⁾ | 25.72x17.0x5.2 in 653.4x431.6x131.9 mm | 25.4x17.2x1.71 in 645.4x436x43.5 mm | 13.0"x8.0"x1.73" 330x204x44mm |
| Packaging Dimensions | 34.1x23.7x15.9 in 866x602x403 mm | 33.6x22.9x8.6 in 854x582x219 mm | 17.7 x 12.2 x 7 in 450x310x180 mm |
| Max Weight (without packaging) | 51Lbs/ 23.2Kg | 29 lbs/ 13.1 Kg | 6lbs 2.7kg |
| Rail Information | Mounting rail kit included. Orderable spare part RMK-003 | Mounting rail kit included. Orderable spare part RMK-002 | 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

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

SteelHead Mobile: System Requirements

| SteelHead Mobile | |
|---|--|
| Operating System | Windows versions: Vista, Windows 7, Windows 8, Windows 8.1 Mac OSX versions: 10.6, 10.7, 10.8 |
| CPU | Celeron 650 MHz |
| Memory | 256 MB |
| Data Store | 256 MB free disk space (min. required) |
| SteelHead Appliance ⁽¹⁾ | Required |
| SteelHead Mobile Controller (SMC) – Now SteelCentral Mobile Controller | Required: Either SteelHead Mobile Controller Appliance <u>or</u> SteelHead Mobile Controller Virtual Edition |

SteelHead Mobile: Software Specifications

| SteelHead Mobile | |
|--|--|
| Concurrent Clients Supported per SMC | SMC-Appliance (8650): 4000, SMC-Appliance (9000): 20,000, Virtual SMC: 4000, SMC-Virtual Edition for RSP:100 |
| Concurrent Clients Supported with SMC Cluster ⁽²⁾ | n x 4000 (with SMC 8650) m x 20000 (with SMC 9000) |
| VPN Compatibility ⁽³⁾ | Cisco, Juniper, Nortel, OpenVPN, Microsoft, Aventail, Citrix, AT&T Netclient, Array, Checkpoint, F5, Sonicwall, Fortinet, WatchGuard |
| Wireless PC Card Compatibility ⁽⁴⁾ | Verizon, AT&T, Sprint |

(1) At least one Steelhead appliance is required running RiOS version 4.x or higher.

(2) SMCs can operate in clustered mode to support additional Steelhead Mobile clients. A cluster can include SMC 9000 or SMC 8650 - total concurrent client = n x 4000 + m x 20000, when n=0, max concurrent clients supported = 80,000 and when both m and n >0, max concurrent clients supported = 20,000

(3) Partial listing. VPN compatibility may be impacted by vendor software version, client configuration, and other factors. Refer to detailed VPN specifications at http://www.riverbed.com/products/steelhead_mobile/vpn_specs/ for more information.

(4) Partial listing. Wireless PC Card compatibility may be impacted dependent upon hardware and driver versions, bundled software and other factors. Refer to detailed wireless specifications at http://www.riverbed.com/products/steelhead_mobile/wireless for more information.

(5) SMC 9000 is supported on SHM 4.5.1(b) and later versions only.

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