

# SteelFusion Solutions

## Model Specifications: SteelFusion™ Edge Appliances

Model	SteelFusion Edge 2100 - 4 Core / 32 GB / 1 TB				SteelFusion Edge 2200 - 4 Core / 48 GB / 2 TB				SteelFusion Edge 3100 - 6 Core / 64 GB / 4 TB				SteelFusion Edge 3200 - 12 Core / 128 GB / 8 TB				SteelFusion Edge 5100 - 20 Core / 256 GB / 16 TB		
Configuration	W0	W1	W2	W3	W0	W1	W2	W3	W0	W1	W2	W3	W0	W1	W2	W3	W0	W1	W2

### Appliance Specs

Profile	1U				1U				2U				2U				2U		
License Upgradeable to	W1 / W2 / W3	W2 / W3	W3	-	W1 / W2 / W3	W2 / W3	W3	-	W1 / W2 / W3	W2 / W3	W3	-	W1 / W2 / W3	W2 / W3	W3	-	W1 / W2	W2	-
Storage Fault Tolerance	RAID 1 <sup>1</sup>				RAID 1 <sup>1</sup>				RAID 10 <sup>1</sup>				RAID10 <sup>1</sup>				RAID10 <sup>1</sup>		
Hot Swappable Drives	4				4				8				12				12		
Total CPU	8 Cores				8 Cores				12 Cores				18 Cores				26 Cores		
Total RAM	48 GB / 80 GB <sup>18</sup>				64 GB / 112 GB <sup>18</sup>				112 GB / 176 GB <sup>18</sup>				184 GB				336 GB		
Total SSD Storage	200 GB				200 GB				800 GB				960 GB				1600 GB		

### Hypervisor Compute Resources

Processor Model	E5-2609v2 2.5GHz	E5-2609v2 2.5GHz	E5-2630v2 2.6GHz	2 * E5-2630v2 2.6GHz	2 * E5-2660v2 2.1GHz
CPU	4 Cores	4 Cores	6 Cores	12 Cores	20 Cores
Memory	32 GB <sup>2</sup> / 64 GB <sup>18</sup>	48 GB <sup>2</sup> / 96 GB <sup>18</sup>	64 GB <sup>2</sup> / 128 GB <sup>18</sup>	128 GB <sup>2</sup>	256 GB <sup>2</sup>

### Storage Resources

Advanced Tiering Cache (SSD Read Cache)	N / A	N / A	430 GB	590 GB	1190 GB
BlockStore (HDD)	~ 750 GB <sup>3</sup>	~ 1500 GB <sup>3</sup>	~ 3500 GB <sup>3</sup>	~ 7400 GB <sup>3</sup>	~ 15200 GB <sup>3</sup>

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Configuration	W0	W1	W2	W3	W0	W1	W2	W3	W0	W1	W2	W3	W0	W1	W2	W3	W0	W1	W2	
<b>WAN Optimization</b>																				
<b>Data Store Capacity (SSD)</b>	170 GB				170 GB				280 GB				280 GB				320 GB			
<b>Optimized WAN Capacity<sup>4</sup></b>	20 Mbps	20 Mbps	30 Mbps	50 Mbps	20 Mbps	20 Mbps	30 Mbps	50 Mbps	30 Mbps	30 Mbps	50 Mbps	100 Mbps	30 Mbps	30 Mbps	50 Mbps	100 Mbps	50 Mbps	50 Mbps	100 Mbps	
<b>Optimized TCP Connections and UDP Flows</b>	N/A	1,500	2,500	5,000	N/A	1,500	2,500	5,000	N/A	2,500	5,000	10,000	N/A	2,500	5,000	10,000	N/A	5,000	10,000	
<b>Optimized SSL / TLS Connections</b>																				
<b>Network Services - WAN Capacity<sup>5</sup></b>	N/A	100 Mbps	150 Mbps	250 Mbps	N/A	100 Mbps	150 Mbps	250 Mbps	N/A	150 Mbps	250 Mbps	500 Mbps	N/A	150 Mbps	250 Mbps	500 Mbps	N/A	250 Mbps	500 Mbps	
<b>Network Services - Flows<sup>6</sup></b>	N/A	16,000			N/A	16,000			N/A	48,000			N/A	48,000			N/A	48,000		
<b>Network Services - Rules / Classes<sup>7</sup></b>	1,000				1,000				2,000				2,000				2,000			
<b>Expansion Slots / Ports - RiOS / BlockStream Node</b>																				
<b>Expansion Slots (PCI-e)</b>	2 <sup>8</sup>				2 <sup>8</sup>				4 <sup>9</sup>				4 <sup>9</sup>				4 <sup>9</sup>			
<b>Included Bypass Ports (Copper)<sup>9</sup></b>	4				4				4				4				4			
<b>Included Non-Bypass Ports (Copper)<sup>10</sup></b>	4				4				4				4				4			
<b>Max. # of Ports</b>	8x 1GbE (BP) or 4x 1GbE (BP) and 2x 10GbE (BP) or 4x 1GbE (BP) and 4x 10GbE (Non-BP) <sup>8</sup>				8x 1GbE (BP) or 4x 1GbE (BP) and 2x 10GbE (BP) or 4x 1GbE (BP) and 4x 10GbE (Non-BP) <sup>8</sup>				16x 1GbE (BP) or 4x 1GbE (BP) and 6x 10GbE (BP) or 4x 1GbE (BP) and 12x 10GbE (Non-BP) <sup>8</sup>				16x 1GbE (BP) or 4x 1GbE (BP) and 6x 10GbE (BP) or 4x 1GbE (BP) and 12x 10GbE (Non-BP) <sup>8</sup>				16x 1GbE (BP) or 4x 1GbE (BP) and 6x 10GbE (BP) or 4x 1GbE (BP) and 12x 10GbE (Non-BP) <sup>8</sup>			
<b>Expansion Slots / Ports - Hypervisor Node</b>																				
<b>Expansion Slots (PCI-e)</b>	0				0				2 <sup>9</sup>				2 <sup>9</sup>				2 <sup>9</sup>			
<b>Included Bypass Ports (Copper)</b>	None				None				None				None				None			
<b>Included Non-Bypass Ports (Copper)</b>	4				4				4				4				4			
<b>Max. # of Ports<sup>11</sup></b>	None				None				8x 1GbE or 4x 1GbE and 4x 10GbE or 8x 10GbE				8x 1GbE or 4x 1GbE and 4x 10GbE or 8x 10GbE				8x 1GbE or 4x 1GbE and 4x 10GbE or 8x 10GbE			
<b>High Availability Configuration (2 Appliances)</b>																				
<b>Hypervisor CPU</b>	8 Cores				8 Cores				12 Cores				24 Cores				40 Cores			
<b>Hypervisor Memory</b>	64 GB <sup>2</sup>				96 GB <sup>2</sup>				128 GB <sup>2</sup>				256 GB <sup>2</sup>				512 GB <sup>2</sup>			
<b>BlockStore (HDD)</b>	~ 750 GB <sup>3</sup>				~ 1500 GB <sup>3</sup>				~ 3500 GB <sup>3</sup>				~ 7400 GB <sup>3</sup>				~ 15200 GB <sup>3</sup>			

- RAID configuration for HDD, Fault Tolerant Striped (FTS) configuration for SSD
  - The RAM noted here is the host physical memory available to vSphere. The memory available to guests will be lower than this number. For more details on vSphere memory management, please refer to the VMware vSphere Resource Management Guide at <http://pubs.vmware.com/vsphere-55/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-55-resource-management-guide.pdf>
  - This is the maximum BlockStore space. For more details, see the "SteelFusion Edge Installation and Configuration Guide"
  - The WAN capacity limit is enforced on outbound optimized traffic. Inbound optimized WAN traffic is not capped
  - Maximum outbound WAN throughput
  - Inclusive of all optimized and / or managed flows
  - Maximum number of classes plus rules
  - BP= Bypass Ports; Non-BP= Non- Bypass ports
  - Included via PCIe Slot NIC
  - On motherboard, not via PCIe Slot NIC
  - Ports on PCIe NIC only, does not include on-motherboard ports
  - With add-on memory kits
- NOTE: All WAN capacity / bandwidth, TCP connections and UDP flows, and QoS specifications listed are maximums and may not be achieved in all environments.

## Model Specifications: SteelFusion Core Appliances

Model	VGC 1000 Series			VGC 1500 Series		SFCR 3500 Series		
Configuration	U	L	M	L	M	C1	C2	C3
Profile	Virtual			Virtual		2U		
Upgradeable to	VGC 1000-L / M	VGC 1000-M	-	VGC 1500-M	-	SFCR 3500 C2 / C3	SFCR 3500 C3	-
Number of Volumes <sup>19</sup>	10	20	40	60 <sup>16,17</sup>	60 <sup>16,17</sup>	200	250	300
Number of branches <sup>20</sup>	5	10	20	30	30	100	125	150
Block mode Capacity Data set size <sup>12</sup>	2 TB	5 TB	10 TB	20 TB	35 TB	25 TB	50 TB	100 TB
File mode Capacity Data set size	N / A			10 TB	20 TB	15 TB	30 TB	50 TB
Cores	2 <sup>13</sup>	4 <sup>13</sup>	8 <sup>13</sup>	8 <sup>13</sup>	12 <sup>13</sup>	12		
RAM	2 GB <sup>14</sup>	4 GB <sup>14</sup>	8 GB <sup>14</sup>	32 GB <sup>14</sup>	48 GB <sup>14</sup>	256 GB		
Total HDD Storage	N / A			N / A		4 * 1 TB		
Expansion Slots (PCI-e)	N / A			N / A		6 <sup>15</sup>		
Included Ports (Copper)	N / A			N / A		4		
Max. # of Ports	N / A			N / A		24 x 1 GbE or 12 x 10 GbE or mix /match 1 GbE and 10 GbE		

12. Capacity licensed based on sum of capacities of LUNs projected to Edges

13. Recommended CPUs @2.2GHz or higher

14. Recommended RAM assigned

15. Only non-bypass NICs are supported / required on the SteelFusion Core appliance

16. Number of supported LUNs connected using fibre channel (Blockdisk) is 59

17. Number of supported LUNs if virtual cores are setup in high availability mode and connected using fibre channel (Blockdisk) is 45

19. Volumes refers to LUNs for block mode (FC and iSCSI) and exports for NFS - file mode

20. Assumes 2 LUNs per branch

## Power and Physical Specifications

Model	SFED-2100 / 2200	SFED-3100	SFED-3200	SFED-5100	SFCR-3500
Dual Power Supplies	✓	✓	✓	✓	✓
Power [Watts] (typical)	291	478	600	619	248
BTU	992	1629	2047	2109	845
Temperature <sup>22</sup>	10 - 40°C / 50 - 104°F (Operating) -40 - 65°C / -40 - 149°F (Storage)	10 - 40°C / 50 - 104°F (Operating) -40 - 65°C / -40 - 149°F (Storage)	10 - 40°C / 50 - 104°F (Operating) -40 - 65°C / -40 - 149°F (Storage)	10 - 40°C / 50 - 104°F (Operating) -40 - 65°C / -40 - 149°F (Storage)	10 - 35°C / 50 - 95°F (Operating) -40 - 70°C / -40 - 158°F (Storage)
Relative Humidity <sup>21</sup>	20 - 80% non-condensing (Operating) 5 - 95% non-condensing (Storage)	20 - 80% non-condensing (Operating) 5 - 95% non-condensing (Storage)	20 - 80% non-condensing (Operating) 5 - 95% non-condensing (Storage)	20 - 80% non-condensing (Operating) 5 - 95% non-condensing (Storage)	50 - 90%, non-condensing with a maximum wet bulb of 28°C (at temperatures from 25 - 35°C) <sup>24</sup>
Operating Acoustic noise (typical)	62 dBA	65 dBA	65 dBA	65 dBA	7.0 BA (Operating condition in typical office ambient temperature: 23 +/- 2° C)
System Dimensions (LxWxH) <sup>23</sup>	25.4" (H) x 17.2" (W) x 1.71" (D) 645.4 mm (H) x 436 mm (W) x 43.5 mm (D)	25.4" (H) x 17.2" (W) x 3.43" (D) 645.4 mm (H) x 436 mm (W) x 87.1 mm (D)	25.4" (H) x 17.2" (W) x 3.43" (D) 645.4 mm (H) x 436 mm (W) x 87.1 mm (D)	25.4" (H) x 17.2" (W) x 3.43" (D) 645.4 mm (H) x 436 mm (W) x 87.1 mm (D)	27.87" (H) x 17.24" (W) x 3.45" (D) 707.8 mm (H) x 438 mm (W) x 87.6 mm (D)
Packaging Dimensions	36.25" (H) x 23.38" (W) x 12.5" (D) 920.8 mm (H) x 593.7 mm (W) x 317.5 mm (D)	36.25" (H) x 23.38" (W) x 12.5" (D) 920.8 mm (H) x 593.7 mm (W) x 317.5 mm (D)	36.25" (H) x 23.38" (W) x 12.5" (D) 920.8 mm (H) x 593.7 mm (W) x 317.5 mm (D)	36.25" (H) x 23.38" (W) x 12.5" (D) 920.8 mm (H) x 593.7 mm (W) x 317.5 mm (D)	36" (H) x 24" (W) x 14" (D) 914.4 mm (H) x 609.6 mm (W) x 355.6 mm (D)
Max Weight (without packaging)	36 Lbs 16.33 Kg	48 Lbs 21.77 Kg	60 Lbs 27.22 Kg	60 Lbs 27.22 Kg	43 Lbs 19.50 Kg
Rail Information	Mounting rail kit included orderable spare Part Number: RMK-2-EXPRAIL	Mounting rail kit included orderable spare Part Number: RMK-2-EXPRAIL	Mounting rail kit included orderable spare Part Number: RMK-2-EXPRAIL	Mounting rail kit included orderable spare Part Number: RMK-2-EXPRAIL	Mounting rail kit included orderable spare Part Numbers: RMK-1-VRAIL, RMK-1-PRAIL

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

22. In China-for use in non-tropical locations

23. Length is without bezel

24. Shipping humidity spec for SFCR-3500 model

NOTE: 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.

### About Riverbed

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