



Computex

UP Server Deep Dive

Andrew Lynn

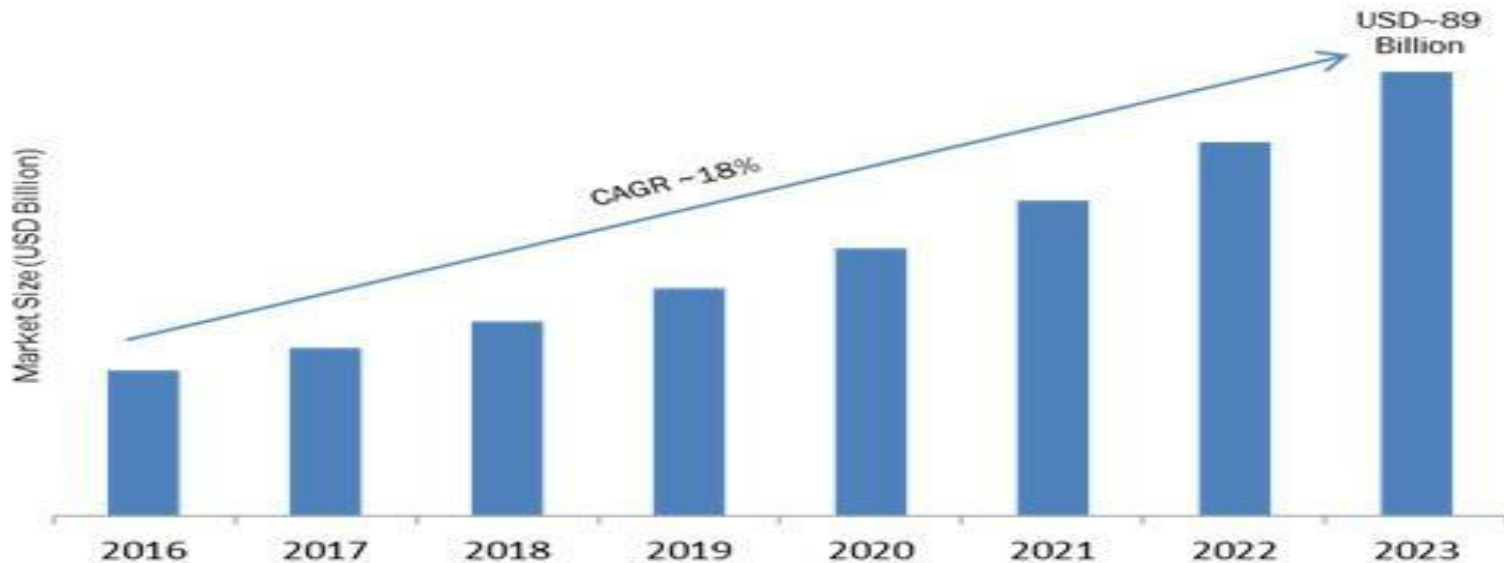




Global TAM Shipment (Gartner: 2017 forecast)

UP Server is about >35%
= >4,000,000 units

Region	2017 YR
North America	5,470.2
Latin America	637.7
Western Europe	
Eastern Europe	
Eurasia	
Middle East and N	
Sub-Saharan Afric	
Greater China	
Japan	
Mature Asia/Pacifi	
Emerging Asia/Pa	
Grand Total	



Thousands

\$30B

X11 UP Purley

Skylake Scalable CPU



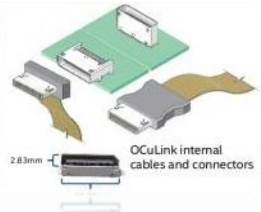
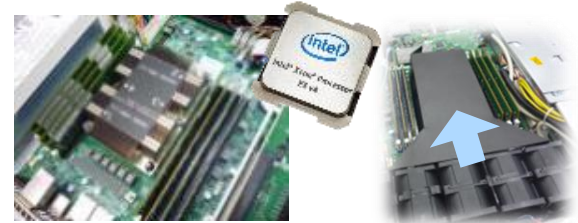


fi

-
- ❖
- ❖
- W
- ❖
- Y
- ❖
- b
- ❖
- ❖

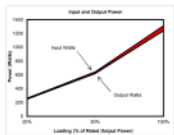


y^d



Required Efficiency depending on % of Rated Load

% of Rated Load	115V Internal Non-Redundant			230V Internal Redundant			
	20%	50%	100%	10%	20%	50%	100%
80 PLUS	80%	80%	80%	---	N/A	---	---
80 PLUS Bronze	82%	85%	82%	81%	85%	81%	---
80 PLUS Silver	85%	88%	85%	85%	89%	85%	---
80 PLUS Gold	87%	90%	87%	88%	92%	88%	---
80 PLUS Platinum	90%	92%	89%	90%	94%	91%	---
80 PLUS Titanium	---	---	---	94%	96%	91%	---



a h a t yft hy yv h y h y d a a h ffa

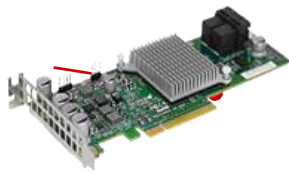
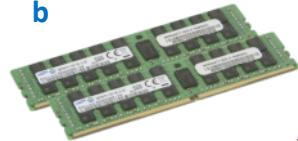




fi Y



YY
b



1 Full-height PCI-e 3.0 x16 Expansion Slots

fb

y^d
ft

a a y

b

SAS3 Backplane

4 Hot-SAS3, SATA Storage Options



M.2 in 2280 or 22110



Dual SuperDOM Support



C622 PCH with 10Gb Support



Dual 10Gbaset LAN

d v ftv y h ft^a
y d

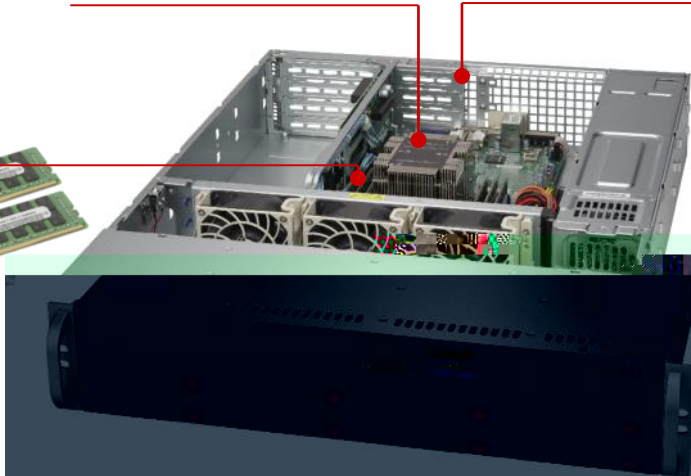
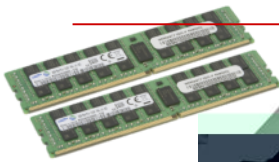




fi fb

❖ fb

Y Y
b a y
h



C622 PCH with 10Gb Mac

M.2 in 2280 or 22110



Dual NVMe Optional





nvm EXPRESS

L

yv

w



J

f y

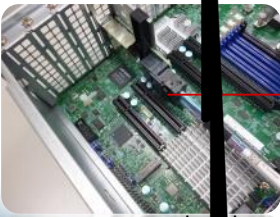


Y

J J f Y



Y



X h y h ft ft ft

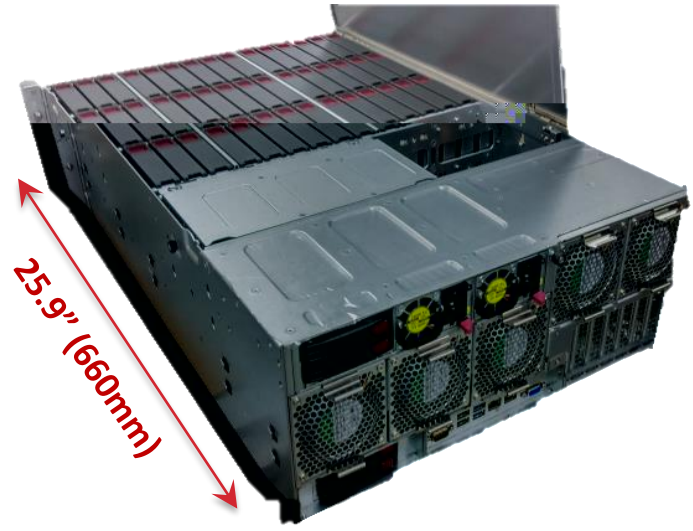
<https://www.servethehome.com/super-micro-superstorage-ssg-5029p-e1ctr12l-2u-storage-server-review/>



NEW

f y

J J



25.9" (660mm)



Y J J

b



660mm

25.9"

J J J W





fi

Model Series	Mainstream				fb IO				SSG		GPU	
Features	5019P- Y b	5019P- YI	5019P- YITb	5019P- YIT	1019P- fb b	5019P- fb Tb	5019P- fb T	5029P- fb b	5029P- E1CTb12w	5029P- E1CTb12w	1019GP	5019GP- TT
Y	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb
Y Y												
f Y												
Y												
Y	f Y	f Y	f Y J J	f Y J J	Y f J J	f Y J J	f Y J J	f Y J J	f Y J J	f Y J J	f Y J J	f Y J J
Y												
J									J	J		
	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb
W Y												



Model Series	Y mainstream				fb IO				SSG		GPU	
Features	5019P-Y1Tb	5019P-Y1T	5019P-Y1b	5019P-Y1	1019P-fb1b	5019P-fb1	5019P-fbT	5020P-fb1b	5029P-E1CTb12w	5049P-E1CTb36w	1019P-fb1-TT	5019GP-TT
Y	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb
Y Y Y												
f Y												
Y												
Y	J J	J J	J J	J J	J J	J J	J J	J J	J J	J J	J J	J J
Y												
J									J	J		
	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb
W Y												

UP mainstream basis:

1. ss61v single process
- 2.





fi

Model Series	Mainstream				fb IO				SSG		GPU	
Features	5019P-YITb	5019P-YIT	5019P-Y.b	5019P-Y	1019P-fb.b	5019P-fb.b	5019P-fb.T	5020P-fb.b	5029P-E1CTb12w	5049P-E1CTb36w	5019GP-..TT	5019GP-..TT
Y	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb
Y Y Y												
f Y												
Y												
Y												
Y												
J									J	J		
	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb
W Y												

1G v.s. 10G

p



recovery in 2018

port number

X11 UP Greenlow E3-1200 v6

Kabylake CPU



fi

Y J Y

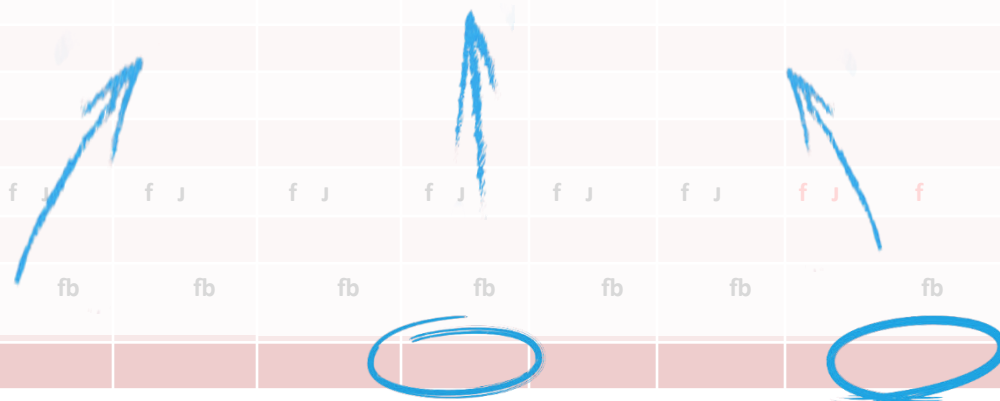
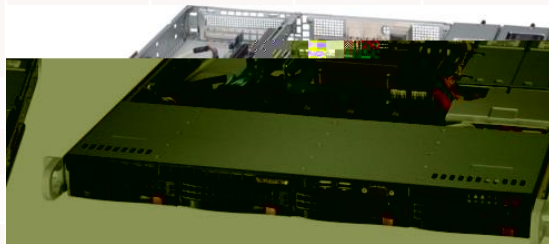
	fb						
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fi

Model Series	Mainstream			fbIO		Network		Storage	Entry Appliance			
Features	5019S-Y b	5019S-Y	5019S-YT	1019S-fbb	5019S-fbb	5019S-YIN4	5019S-fb4Tb	1019S-YIC0T	5019S-YI2	5019S-YIW	5019S-W	
Y												
Y Y												
Y												
Y												
J J Y												
	f J	f J	f J	f J	f J	f J	f J	f J	f J	f	f J	f J
	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb





fi

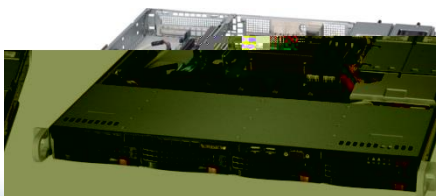
Model Series	Yainstream			fbIO		Network		Storage	Entry Appliance		
Features	5019S-Y b	5019S-Y	5019S-YT	1019S fbb	5019S fbb	5019S-Y/N4	5019S-fb 4Tb	1019S-YIC0T	5019S-YM2	5019S-Y/W	5019S-W
Y Y Y											
Y											
Y											
J J Y											
	f J	f J	f J	f J	f J	f J	f J	f J	f J	f	f J
	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb	fb



I



b



Micro Cloud





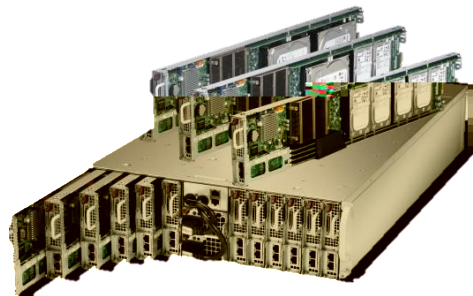
Supermicro MicroCloud Lineup

8 Modular UP Nodes



8 hot pluggable trays
 Support CPU architecture Skylake-D / E5-2600 v4 / E3-1200 v6 / Xeon-D 1541
 Standard LP PCI-E x8 Slots per node
 3.5" / 2.5" Hot Swappable HDD support
 2x LAN and 1x dedicated IPMI per node

12 Modular UP Nodes



12 hot pluggable trays
 Support CPU architecture Intel Xeon E / E3-1200 v6 / Denverton
 Supermicro Proprietary Micro-LP Card
 2 x 3.5" SATA3 or 4 x 2.5" SATA3 per node
 2x LAN and 1x dedicated IPMI per node

24 Modular UP Nodes

(complete system only)



24 nodes
 Hot pluggable tray
 Support CPU architecture Xeon-D 1531 / E3-1200 v3/v4 / Avoton C2750
 Fixed 2x 1G LAN and 1x dedicated IPMI per node
 2000W Redundant Platinum Power efficiency

Flexibility

Density

SYS-5039MD8/18-H8TNR



Skylake-D

Sample ready : 07/2018

Key features

- High-density node count server
- I/O flexibility, U.2/M.2 NVMe, x16 LP slot
- Ease of serviceability
- Storage and I/O Flexibility
- Cost effective, lower OPEX

Applications

- Dedicated Hosting
- Dynamic Web Front End
- No SQL database
- Dynamic Web Serving
- Memory Caching

3u 8 nodes Skylake D MicroCloud

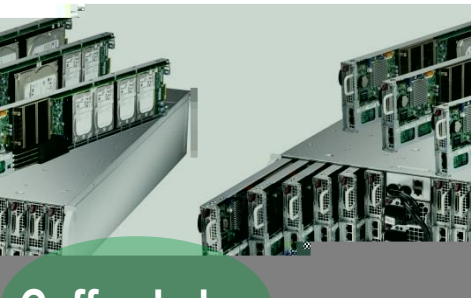
Motherboard: X11SSD8C-F/X11SSD18C-F

Chassis: CSE-938NH-R1K68B

System Specs:

Processor	Intel® Skylake-D SOC Xeon D-2191, 18 cores, 86W; Xeon D-21411, 8 cores, 65W
Memory (per node)	4 x 288-pin DDR4 DIMM Slot Up to 512GB DDR4 ECC LRDIMM 2400Mhz
Expansion Slot (per node)	1x PCI-E 3.0 x16 low profile slot
I/O Ports (per node)	1x VGA+ 2x USB 2.0 + 1x COM (via KVM dongle)
Drive Bays (per node)	2x U.2 NVMe or 2.5/3.5" Hot-Swap SATA (6Gb/s) 2x M.2 NVMe/SATA connector onboard via PCH flex I/O
Network (per node)	2x Gigabit LAN ports (Intel® i350) (Upgrade option: Supermicro Micro-LP Network cards) 1+1 Centralize Dedicated Management port
Power Supply	1+1 1600W 80+ Platinum Redundant PSU w/ PMBus

SYS-5039MC-H12TRF



Coffee Lake

Key features

- **High-density**, Enterprise Performance, Cost-effective, Multi-node UP server
- **Centralized dedicated IPMI** management port
- Support **M.2** and **U.2 NVMe**
- **Titanium** Level Power Supplies
- Up to 12x hot-pluggable node in 3U chassis

Applications

- Dedicated Hosting
- Cloud Computing
- Web Cache, CDN, Video Streaming
- Disaggregate flash storage
- Corporate – WINS, DNS, Print, Login



3u 12 nodes Intel Xeon E 2100 MicroCloud

Motherboard: **MBD-X11SCE-F**

Chassis: **CSE-939HC-R2K04B**

System Specs:

Processor	Intel Coffee Lake LGA 1151, Xeon E 2100, 8 th gen Core i3, Pentium, Celeron processors
PCH	C246 PCH
Memory (per node)	4 x 288-pin DDR4 DIMM Slot Up to 64GB DDR4 Very Low Profile 2666Mhz ECC UDIMM
I/O Ports (per node)	6 x SATA 3.0 1 x VGA + 2 x USB 2.0 + 1 x COM (via KVM dongle) 1 x USB 3.0 Type A 1 x SATA DOM
Drive Bays (per node)	2 x 3.5" SATA3 or 4 x 2.5" SATA3 or 2 x U.2 NVMe 1 x Hybrid SATA/NVMe M.2 (2280/22110)
Network (per node)	2 x Gigabit LAN ports (Intel ® i350) (Upgrade option: Supermicro Micro-LP Network cards) 1+1 Dedicated IPMI Management port for 12 nodes
Power Supply	1+1 2000W 80+ Titanium Redundant PSU w/ PMBus

SYS-5039MA8/16-H12RFT



Denverton

Key features

- High-density, Enterprise Performance, Cost-effective, Multi-node UP server
- **1+1 1Gb Centralized IPMI dedicated** management port through BPN
- Support **U.2 NVMe** and **M.2 NVMe and SATA**
- Flexible drives selection
- Up to 12x hot-pluggable node in 3U chassis

Applications

- Entry Level Hosting
- Web Cache, CDN, Video Streaming
- Social Networking, Downloads
- Corporate – WINS, DNS, Print, Login

3u 12 nodes Denverton MicroCloud

Motherboard: **MBD-A2SD1-3750-F**

Chassis: **CSE-939HE-R1K63B**

System Specs:

Processor	Intel Denverton SoC C3750 8 cores, 21W, FCBGA1310 ; 5039MA16 (C3955, 16 cores)
Memory (per node)	4 x 288-pin DDR4 DIMM Slot Up to 128GB DDR4 ECC RDIMM or 64GB DDR4 ECC UDIMM Very Low Profile 2400Mhz
I/O Ports (per node)	4 x SATA 3.0 1 x VGA+ 2 x USB 2.0 + 1 x COM (w/ KVM dongle) 1 x USB 3.0 Type A 1 x SATA DOM
Drive Bays (per node)	2 x 3.5" SATA3 or 4 x 2.5" SATA3 2 x Hybrid SATA/NVMe M.2 (2280/22110)
Network (per node)	2 x 10Gigabit LAN ports 1+1 IPMI Management port for 12 nodes
Power Supply	1+1 2000W 80+ Titanium Redundant PSU w/ PMBus