

Enterprise and Data Center X9 Hadoop Infrastructure



Hadoop Decision Questions

● Is Hadoop for my Business?

● Yes.

● What do I run it on?

● Supermicro.

SUPERMICRO Hadoop® Solutions

High Performance Enterprise Apache™ Hadoop Infrastructure
Intel® Xeon® E5-2600 v2 (Ivy Bridge) Support

1U 815 - Nano Node
3U 825 - 8 Drives per Node
3U 825 - 16 Drives per Node
3U 825 - 24 Drives per Node
3U 825 - 32 Drives per Node
10GbE/1GbE Switches
3U 825 - 12 Drives per Node
4U Fat Twin™ FTN - 8 Drives per Node
4U Fat Twin™ - 12 Drives per Node
1U 815 6LT - 12 Drives per Node

- Fully-validated, pre-configured SKUs optimized for Hadoop solutions
- Hot Swap or Tool-less Direct Attach 4x, 6x, 8x, and 12x 3.5" HDDs per Node
- Platinum Level (95%+) High-Efficiency Redundant Power Supplies with PMBus
- Server Management Software including In-Band and Out-of-Band Utilities
- Qualified major for Hadoop software distributions
- Qualified for Hadoop 2.0 / YARN

Offering is focused to:

1. Get Started Quickly:

Short and accurate infrastructure discussion.

2. Optimize for Scale and Workload:

Work with Supermicro partners to optimize stage two deployments, growth and data integration platforms.



FatTwin



TwinPro



SuperBlade



GPU / Xeon Phi



MicroCloud



MicroBlade



Storage



Embedded



Switch



Software



Complete Rack Solutions

Simplify HDFS

Optimized Nodes

Optimized Nodes / Integrated Racks

SUPERMICR Hadoop® Solutions

High Performance Enterprise Apache™ Hadoop Infrastructure
Intel® Xeon® E5-2600 v2 (Ivy Bridge) Support

1U 815 - Name Node
2U 827 - 8 Drives per Node
3U 836 - 12 Drives per Node
4U Fat Twin™ FT1 - 8 Drives per Node
4U Fat Twin™ - 12 Drives per Node
1U 815LT - 12 Drives per Node

- Fully-validated, pre-configured SKUs optimized for Hadoop solutions
- Hot Swap or Tool-less Direct Attach 4x, 6x, 8x, and 12x 3.5" HDDs per Node
- Platinum Level (95%+) High-Efficiency Redundant Power Supplies with PMBus
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- Qualified major for Hadoop software distributions
- Qualified for Hadoop 2.0 / YARN

SUPERMICR Hadoop Kit # SRS-14UL63-HADP-TL

Supermicro Datacenter Engineering & Integration

Key Features

- Optimized Turnkey Apache Hadoop Cluster
- 14U Mobile Rack with 11 Nodes and PDU
- 1x 24 Port 1G Layer 3 Ethernet Switch w/ Dual 10G Uplinks (SFP+ Connectors)
- 1x 1U Management Server
- 2x 1U Name Node/Job Tracker/Journal Manager/Resource Manager
- 4x 2U Twin Data Nodes/Task Tracker/Node Manager (8 Nodes Total)
- 48TB Storage Capacity
- Platinum Level (94%) / Gold Level (93%+) Efficiency Power Supplies
- Cabled and Labeled
- Integrated APC 30A 208V L6-30 PDU
- Cloudera and Hortonworks Certified Technology

MODEL	Cluster Management	815 Name Node	827 2U Twin Data Node (6x 3.5" HDDs per Node)
Processor Support	Intel® Xeon processor E3-1200 and E3-1200 v2 product families	Intel® Xeon® processor E5-2600 and E5-2600 v2 product families	Intel® Xeon® processor E5-2600 and E5-2600 v2 product families
Chipset	Intel® C216 Chipset	Intel® 5500 chipset with QPI up to 64GB/s	Intel® 5500 chipset with QPI up to 64GB/s
System Memory (Max)	48GB (Max 32GB in 4 x DDR3 ECC UDIMM)	64GB (Max 512GB in 16 x DDR3 Reg. ECC RDIMM)	32GB (Max 256GB) of DDR3 Reg. ECC Per Node (2 nodes per system)
Expansion Slots	1 PCIe 3.0 x16 slots, 2 PCIe 2.0 x4 (in x8) slots	2 PCIe 3.0 x16 slots	3 PCIe 3.0 x16 slots
Onboard & ADC HBA Controllers	Intel® C216 PCI SATA RAID 0, 1, 5, 10 support	LSI® 2008 controller Hardware RAID 0, 1, 5, 6, 10 Intel® 620 SCSI SATA RAID 0, 1, 5, 10 support	Intel® 620 SCSI and AHCI SATA RAID 0, 1, 5, 10 support
Networking /VGA	Intel® E354 Dual Port Gigabit Ethernet, Intel® I350 Quad Port Gigabit Ethernet, 10 Gigabit Ethernet with SFP+ connection	Intel® I350 Dual Port Gigabit Ethernet	Intel® I350 Dual Port Gigabit Ethernet
Manageability	Dedicated IPMI 2.0 with virtual media over LAN and KVM-over-LAN support	Dedicated IPMI 2.0 with virtual media over LAN and KVM-over-LAN support	Dedicated IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
Drive Bays	2x Hot-Swap SATA HDD bays 2x 500GB HDD	4x 300GB 15K HDD	6x per node, 1TB HDD
Power Supply	Redundant (1+1) 500W Platinum Level high-efficiency power supply	Redundant (1+1) 700W Gold Level (93%) high-efficiency power supplies w/ PMBus	Redundant (1+1) 920W Platinum Level (94%) high-efficiency power supplies w/ PMBus
Cooling System	4x 4cm heavy duty counter-rotating fans	4x 4cm heavy duty counter-rotating fans	4x 4cm heavy duty fans with PWM fan speed control
Form Factor	1U rackmount chassis (25.4" depth)	1U rackmount chassis (25.4" depth)	2U rackmount chassis (28.5" depth)

14U Rack Information

- Switches / Networking
 - SGE-G24-RG4 - 1U Rackmount 24 port Gigabit Ethernet Switch
 - 24 ports RJ45 copper (includes 4 SFP Combo Ports) for 1G Ethernet
 - Managed L3/L2 with Industry Standard CLI and Web-GUI for management
 - ACM-SGE-G25 - Dual-port 10G Ethernet Uplink Module with SFP+ Connector
- PDU
 - APC PDU 208V L6-30 Plug/ (14) IEC 320 C13 Connectors (APC6P7911A)
- Rack Construction
 - Supports 19" rackmount servers with regular square mounting holes, casters, front/rear doors
- Form Factor
 - 21.65"W x 37.4"D x 30.64"H (55cmW x 95cmD x 77.3cmH)

Full 14U Rack Hadoop Solution

- SRS-42UL63-HADP-TL (3 Name Nodes, 36 Data Nodes, 10 GbE SFP+ Networking)

Covers 90+% of End Users

of Hadoop Users



Server Designs

- Custom
- High Density
- Enterprise Applications
- SSD
- GPU



Eg., SYS-HDT0-27126332-HADP



- Custom
- High Density
- 12-18 x 3.5" HDD Per U
- Enterprise Applications
- SSD
- GPU



Turn Key Certified Pilot Cluster Kits

Pilot Kit - Configuration:

**Ethernet Switch:
(10G Uplink
Capability)**

1G Ethernet Switch
SSE-G24-TG4 1U 24 port

Management Node:

Management Node
SYS-5017C-URF-MGMT2-HADP

**Name Node/
Job Tracker/
Resource Manager:**

Name Node – 64GB
SYS-HNW0-15026364-HADP

**Secondary
Name Node:**

Name Node – 64GB
SYS-HNW0-15026364-HADP

2 Data Nodes:

Data Node – 6 x 1TB 32GB
SYS-HDT0-27126332-HADP 2UTwin

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Data Node – 6 x 1TB 32GB
SYS-HDT0-27126332-HADP 2UTwin

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Data Node – 6 x 1TB 32GB
SYS-HDT0-27126332-HADP 2UTwin

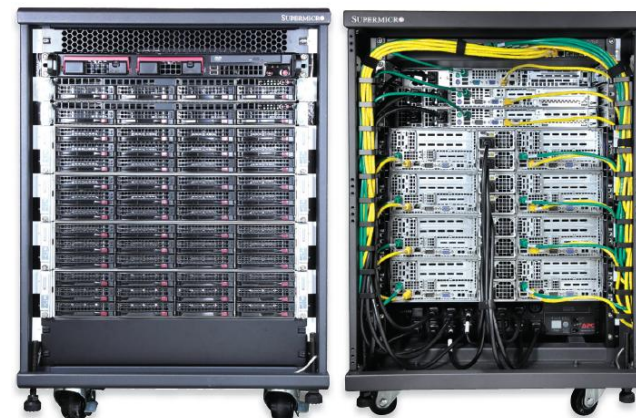
2 Data Nodes:

Data Node – 6 x 1TB 32GB
SYS-HDT0-27126332-HADP 2UTwin

L6-30A Plug PDU

11 Node Pilot

- 48 TB
- 3.5" SATA
- 120 Cores
- 48 Spindles
- 384 GB Memory
- Occupy 14U



Hadoop Kit # **SRS-14UL63-HADP-TL**

Building Block Nodes for Hadoop

● 815 Name Node / Job Tracker / Resource Manager / Journal Manager

- Dual Six Core Xeon
- 4 x 3.5" 15k HDD
- Hot Swap HDD, PSUs
- On Board IPMI Remote Management
- 93% Efficiency PMBus PSUs

SYS-HNW0-15026364-HADP

SYS-HNWX-19026364-HADP (10G SFP+)



● 827 2UTwin Data Nodes

- Dual Six Core Xeon
- 6 x 3.5" HDD per node
- 2 Nodes in 2U = 6 HDD per U
- On Board IPMI Remote Management
- Hot Swap Nodes, HDD, PSUs
- 94% Efficiency PMBus PSUs

SYS-HDT0-27126332-HADP

SYS-HDTX-27126332-HADP (10G SFP+)



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GPU / Xeon Phi



MicroCloud



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Storage



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Software



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Building Block Nodes for Hadoop

● FT4 FatTwin Data Nodes

- Dual Six Core Xeon
- 8 x 3.5" HDD per node
- 4 Nodes in 4U = 8 HDD per U
- On Board IPMI Remote Management
- Hot Swap Nodes, HDD, PSUs
- 95% Efficiency PMBus PSUs

SYS-HDF0-24126332-HADP

SYS-HDFX-24126332-HADP (10G SFP+)



SYS-F627R3-R Series (Rear View)



● 826 2U Data Nodes

- Dual Six Core Xeon
- 12 x 3.5" HDD
- On Board IPMI Remote Management
- Hot Swap Nodes, HDD, PSUs
- 94% Efficiency PMBus PSUs

SYS-HDD0-26126332-HADP

SYS-HDDX-26126332-HADP (10G SFP+)



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High Density Hadoop Solutions

Cost Effective, High Density DataNode

- ❖ 1U, Front I/O
- ❖ Dual Intel Xeon CPU or Single Intel Xeon CPU
- ❖ Up to 16 DIMM, 512GB memory
- ❖ **12 x 3.5" HDD per node**
- ❖ 2 additional PCI-E Gen 3 slots
- ❖ 10GbE onboard option
- ❖ High efficiency 650W power supply



SYS-6017R-73(T)HDP+



SSG-5017R-iHDP

High Density Hadoop Solutions

FatTwin = Best Performance / Watt / \$ / ft²

- ❖ 4 nodes in 4U, Front I/O
- ❖ Dual Intel Xeon CPU (F617H6-FT(PT)L+) or Single Intel Xeon CPU (F517H6-FT)
- ❖ Up to 16 DIMM, 512GB memory
- ❖ **12 x 3.5" HDD per node**
- ❖ 2 additional PCI-E Gen 3 slots
- ❖ 10GbE onboard option
- ❖ High efficient 1620W redundant power supply
- ❖ Hot-swappable cooling fans



SYS-F617H6-FT(PT)L+
SYS-F517H6-FT



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Partners Certified Technology

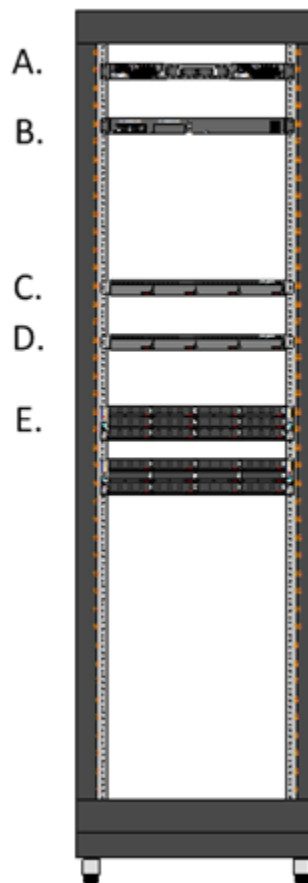
Supermicro Hadoop Pilot Kit

- A. 24-Port 10G SFP+ Switch (SSE-X24S)
- B. 48-Port 1G Switch + 10G SFP+ Uplink (SSE-G48-TG4 w/ AOM-SSE-X2S)
- C. Name Node/Job Tracker (SYS-HNW0-15026364-HADP)
- D. Secondary Name Node/Job Tracker (SYS-HNW0-15026364-HADP)
- E. Data Nodes/2U Twin (SYS-HDT0-27126332-HADP)

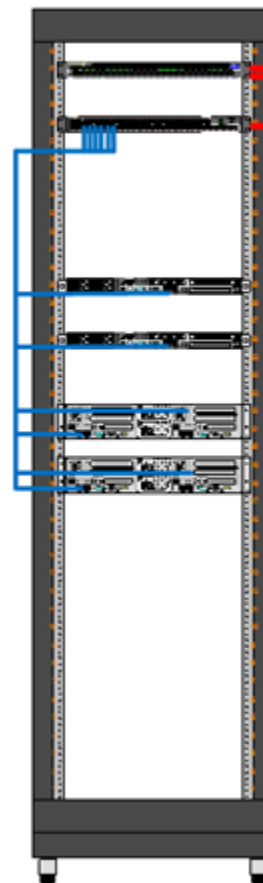
10G Uplink / Fabric
 1G Fabric 1



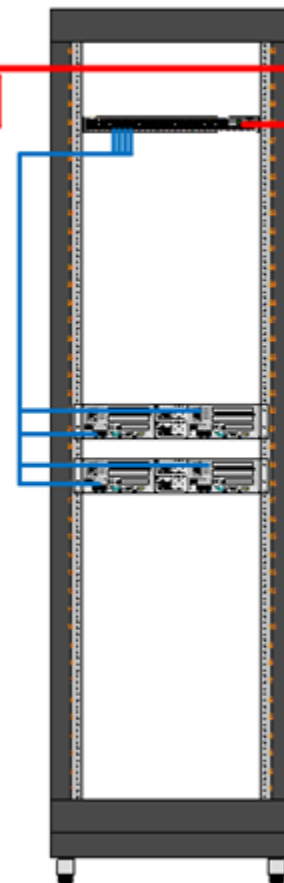
Rack 1 Front View



Rack 1 Rear View



Rack 2 Rear View



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Pre-configured Optimized Hadoop Nodes

Name Node / Job Tracker / Resource Manager / Journal Manager:



815 Name Node – 4 x 15K 64GB
SYS-HNW0-15026364-HADP 1U

Data Nodes:

1TB SATA Drives

2TB SATA Drives



827 Data Node – 6 x 1TB 32GB
SYS-HDT0-27126332-HADP 2U Twin

827 Data Node – 6 x 2TB 32GB
SYS-HDT0-27226332-HADP 2U Twin



825 Data Node – 8 x 1TB 32GB
SYS-HDD0-25126332-HADP 2U

825 Data Node – 8 x 2TB 32GB
SYS-HDD0-25226332-HADP 2U



FT4 Node– 8 x 1TB 32GB
SYS-HDF0-24126332-HADP FatTwin

FT4 Node– 8 x 2TB 32GB
SYS-HDF0-24226332-HADP FatTwin



826 Data Node – 12 x 1TB 32GB
SYS-HDD0-26126332-HADP 2U

826 Data Node – 12 x 2TB 32GB
SYS-HDD0-26226332-HADP 2U



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Hadoop Series Naming Convention

SYS-HDW0-26126332-HADP

H = Hadoop

D = Data Node

N = Name Node

W = X9DWR-F

T = X9DRT-HF

D = X9DRD-7LN4F

F = X9DRFR

0 = Intel

1 = AMD

X = Intel 10G

32 = GB Memory

64 = GB Memory

263 = Xeon E5-2630v2

0 = OS HDD x 4

1 = 1TB HDD

2 = 2TB HDD

15 = 815 - 1U - 4 HDD

19 = 819 - 1U - 4 HDD

24 = 424 - 4UFTwin - 4x8HDD

25 = 825 - 2U - 8 HDD

26 = 826 - 2U - 12 HDD

27 = 827 - 2UTwin - 2x6 HDD

Hadoop Series Naming Convention

Model/Part # Description / Functionality

SYS-HNW0-15026364-HADP	1U Hadoop 815 Name Node 6C E5-2630v2 2.6G 15M 7.2G 80W 64GB MEM
SYS-HDT0-27126332-HADP	2U Hadoop 827 6 1TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM
SYS-HDT0-27226332-HADP	2U Hadoop 827 6 2TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM
SYS-HDD0-25126332-HADP	2U Hadoop 825 8 1TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM
SYS-HDD0-25226332-HADP	2U Hadoop 825 8 2TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM
SYS-HDF0-24126332-HADP	4U Hadoop FT4 8 1TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM
SYS-HDF0-24226332-HADP	4U Hadoop FT4 8 2TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM
SYS-HDD0-26126332-HADP	2U Hadoop 826 12 1TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM
SYS-HDD0-26226332-HADP	2U Hadoop 826 12 2TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM



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10G SFP+ Hadoop Series Naming Convention

Model/Part # Description / Functionality

SYS-HNWX-15026364-HADP 1U Hadoop 815 Name Node 6C E5-2630v2 2.6G 15M 7.2G 80W 64GB MEM

SYS-HDTX-27126332-HADP 2U Hadoop 827 **6** 1TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM

SYS-HDFX-24126332-HADP 4U Hadoop FT4 **8** 1TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM

SYS-HDDX-26126332-HADP 2U Hadoop 826 **12** 1TB 6C E5-2630v2 2.6G 15M 7.2GT 80W 32GB MEM



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Storage



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Software Complete Rack Solutions

Turn Key Hadoop Cluster Racks



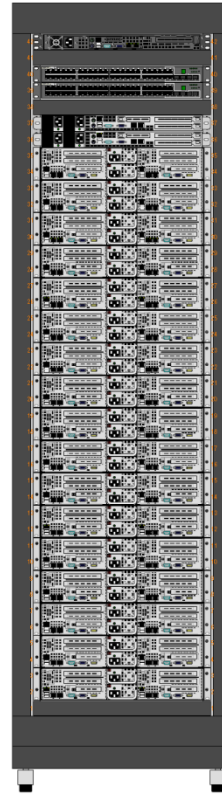
+

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+

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= **ROB**
Return on Byte\$

Optimized
Nodes

Integration

Delivered



FatTwin



TwinPro



SuperBlade



GPU / Xeon Phi



MicroCloud



MicroBlade



Storage



Embedded



Switch



Software



Complete Rack Solutions

10G Turn Key HDFS Hadoop Cluster Racks

Supermicro Bare Metal 42U X9 Hadoop Infrastructure:

SUPER RACK: **SRS-42XL63-HADP-FL** (42U FatTwin DataNodes)

Servers:

1 x Management Node	(1 x SYS-50117C-URF-MGMT2-HADP)
3 x Name/Job Tracker Nodes	(3 x SYS-HNWX-19026364-HADP)
36 x Data Nodes	(9 x SYS -HDFX-24126364-HADP)

Networking:

Data Network	
1 x 48 Port 10G Switch SFP+	(1 x SSE-X3348SR)
IPMI Management Network	
1 x 48 Port 1G Switch	(1 x SSE-G48-TG4 w/ 1 x AOM-SSE-X2S)

Raw HDFS Capacity:

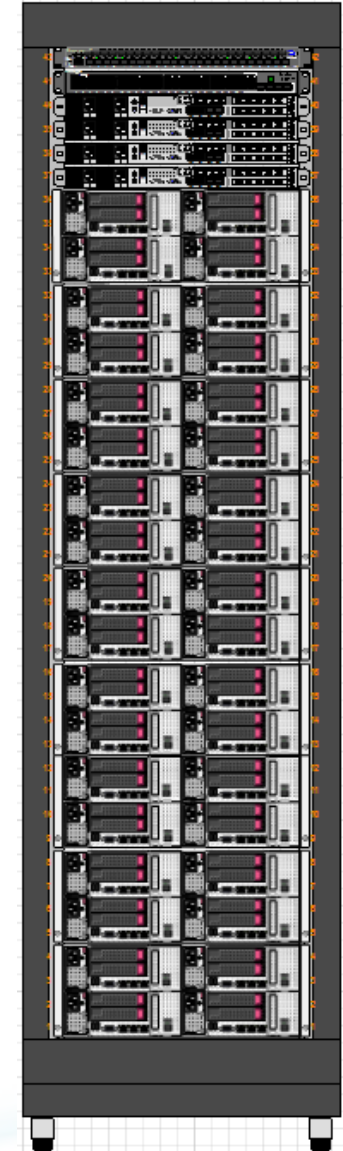
1TB Drives - 288 TB
2TB Drives - 576 TB

PDUs

Cabled / Labeled / Crated

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10G Turn Key HDFS Hadoop Cluster Racks

Supermicro Bare Metal 42U X9 Hadoop Infrastructure:

SUPER RACK: **SRS-42XL63-HADP-TL** (42U 2UTwin DataNodes)

Servers:

1 x Management Node (1 x SYS-5017C-URF-MGMT2-HADP)
 3 x Name/Job Tracker Nodes (3 x SYS-HNWX-19026364-HADP)
 36 x Data Nodes (18 x SYS-HDTX-27126332-HADP)

Networking:

Data Network

1 x 48 Port 10G Switch SFP+ (1 x SSE-X3348SR)

IPMI Management Network

1 x 48 Port 1G Switch (1 x SSE-G48-TG4 w/ 1 x AOM-SSE-X2S)

Raw HDFS Capacity:

1TB Drives - 216 TB

2TB Drives - 432 TB

PDUs

Cabled / Labeled / Crated

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Supermicro, Apache and Cloudera Certified Hadoop Solutions

Apache Hadoop is an opensource software project maintained by the Apache Software Foundation.

<http://apache.org/>

Learn and Download Apache Hadoop:

<http://hadoop.apache.org/>

Cloudera offers a powerful and integrated Big Data platform comprising software, support, training, professional services, and indemnity. This platform, which has open source Apache Hadoop software at its core, allows customers to store, process, and analyze far more data, of more types and formats, and to do so more affordably than legacy technology -- allowing them to "ask bigger questions".



Learn and Download Cloudera's Distribution including Apache Hadoop:

Main Web Page: <http://www.cloudera.com/>

Download Software:

Download Cloudera Standard 4 (Free Edition) and get started.

<http://www.cloudera.com/content/support/en/downloads.html>

Cloudera Hadoop Installation and Configuration Documentation:

<http://www.cloudera.com/content/cloudera-content/cloudera-docs/CDH4/latest/CDH4-Installation-Guide/CDH4-Installation-Guide.html>



Supermicro Certified Hadoop Infrastructure Solutions:

Pre-configured and Cloudera Certified Hadoop Nodes:

www.supermicro.com/hadoop

Pre-configured Cloudera Certified Hadoop Racks:

www.supermicro.com/products/nfo/files/hadoop/Hadoop-Kit-datasheet.pdf

Supermicro Cloudera Partnership and Solution:

<http://www.cloudera.com/content/cloudera/en/partners/partners-listing.html>



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GPU / Xeon Phi



MicroCloud



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Storage



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Switch



Software



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Supermicro, Apache and Hortonworks Certified Hadoop Solutions

Apache Hadoop is an open source software project maintained by the Apache Software Foundation.

<http://apache.org/>

Learn and Download Apache Hadoop:

<http://hadoop.apache.org/>

Founded in 2011 by 24 engineers from the original Yahoo! Hadoop development and operations team, Hortonworks has amassed more Hadoop experience under one roof than any other organization. Our team members are active participants and leaders in Hadoop development; designing, building and testing the core of the Hadoop platform. We have years of experience in Hadoop operations and are best suited to support your mission-critical Hadoop project.



Learn and Download Hortonworks's Distribution including Apache Hadoop:

Main Web Page: <http://hortonworks.com/>

Download Software:

Download Hortonworks Data Platform and get started.

<http://hortonworks.com/products/hdp-2>

Hortonworks Data Platform Installation and Configuration Documentation:

<http://docs.hortonworks.com>



Supermicro Certified Hadoop Infrastructure Solutions:

Pre-configured and Hortonworks Certified Hadoop Nodes:

www.supermicro.com/hadoop

Pre-configured Hortonworks Certified Hadoop Racks:

www.supermicro.com/products/nfo/files/hadoop/Hadoop-Kit-datasheet.pdf

Supermicro Hortonworks Partnership and Solution:

<http://hortonworks.com/partner/supermicro>



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<http://www.supermicro.com>

<http://www.supermicro.com/hadoop>



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