

IBM System Storage N series N3150 Models A15 and A25 offer enterprise-class iSCSI and NAS storage

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At a glance



IBM® System Storage® N3150 is an entry-level system using internal SATA disk technology that replaces the traditional second-tier systems. It is a 2U, high-density system containing up to twelve internal disk drives. External disk storage expansion units can also be attached for up to a total of 60 spindles. The maximum capacity of the system is 180 TB of physical storage.

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

Overview

IBM System Storage N3150 consists of single-node (Model A15) and dual-node (Model A25) (active-active) base units. Both models are designed to provide fast data access, simultaneous multiprotocol support, expandability, upgradability, and low maintenance.

Model 2857-A15

N3150 Model A15 is designed to provide a single-node storage controller with HTTP, Common Internet File System (CIFS), Network File System (NFS), and Internet Small Computer System Interface (iSCSI) support via optional features. The N3150 Model A15 is a 2U storage controller that must be mounted in a standard 19-inch rack. Model A15 can be upgraded to a Model A25, however, this is a disruptive upgrade.

Model 2857-A25

N3150 Model A25 is designed to provide identical functions as the single-node Model A15, but with the addition of a second processor control module (PCM) and the Clustered Failover (CFO) licensed function. Model A25 consists of two PCMs

that are designed to provide failover and failback function, helping improve overall availability. Model A25 is a 2U rack-mountable storage controller.

Key prerequisites

IBM System Storage N series N3150 requires NFS, CIFS, or iSCSI protocol function.

Planned availability date

December 7, 2012

Description

Both IBM System Storage N3150 models are designed to provide:

- High data availability and system-level redundancy to help address the needs of business-critical and mission-critical applications
- Single, integrated architecture to support concurrent block I/O and file serving over Ethernet infrastructures
- High throughput and fast response times for database, email, and technical applications
- Twelve Serial Advanced Technology Attachment (SATA) Serial Attached SCSI (SAS), or solid state disks (SSD) (via optional features)
- Support for both block I/O via iSCSI and file I/O via CIFS, NFS, HTTP, and FTP protocols
- Support for a maximum of 60 disk drives for up to 180 TB of physical storage capacity
- Up to 6 GB of random access memory (per node)
- Two onboard SAS ports (per node)
- Upgrade capability from Model A15 to Model A25

N3150 storage controllers support the EXN3000 SAS/SATA storage expansion unit and the high-density EXN3500 SAS storage expansion unit.

These N series models are designed to provide fast data access, simultaneous multiprotocol support, expandability, upgradability, and low maintenance. Additional functions, such as snapshot, mirroring, and business continuance capability, are available through optional licensed features.

N3150 storage controllers are designed to interoperate with products capable of data transmission in the industry-standard iSCSI, CIFS, and NFS protocols. These include IBM System p® , IBM System i® (NFS only), IBM System x® , and IBM System z® (NFS only) servers.

Model A15 is designed to provide a single-node storage controller with iSCSI, NFS, and CIFS support via optional features. This model is a 2U rack-mountable storage controller.

Model A15 includes:

- 2U, standard 19-inch rackmount enclosure
- One 1.73 GHz Intel™ dual-core processor
- Up to 6 GB random access ECC memory
- Four integrated Gigabit Ethernet RJ45 ports
- Two SAS ports
- One serial console port

- One integrated Remote LAN Management (RLM) port
- Redundant hot-swappable, auto-ranging power supplies and cooling fans

Model A15 may be upgraded to a Model A25, however, this is a disruptive upgrade.

Model A25 is designed to provide identical functions as the N3150 Model A15, but with the addition of a second PCM and the CFO licensed function. Model A25 also supports a maximum of 60 drives. The two PCMs are designed to provide failover and fallback functions, helping improve overall availability. Model A25 is a 2U rack-mountable storage controller.

Model A25 includes:

- 2U, standard 19-inch rackmount enclosure
- Two 1.73 GHz Intel dual-core processors
- Up to 12 GB random access ECC memory (6 GB per controller)
- Eight integrated Gigabit Ethernet RJ45 ports
- Four SAS ports
- Two serial console ports
- Two integrated Remote LAN Management (RLM) ports
- Redundant hot-swappable, auto-ranging power supplies and cooling fans

N3150 storage controllers can attach a maximum of two EXN3000 SAS/SATA or EXN3500 SAS storage expansion units.

The EXN3000 storage expansion unit is a 4U rack-mountable disk enclosure containing 5, up to a maximum of 24, SAS or SATA disk drives. The supported disk drives are:

- SAS: 300 GB, 450 GB, and 600 GB physical capacities
- SATA: 500 GB, 750 GB, 1 TB, 2 TB, and 3 TB physical capacities

The EXN3500 storage expansion unit is a 2U rack-mountable disk enclosure containing 5, up to a maximum of 24, 2.5-inch, small form factor (SFF) SATA disk drives. The supported disk drives are:

- SAS: 450 GB, 600 GB and 900 GB physical capacities

The maximum raw storage capacity of the N3150 system is determined by the maximum number of disk drives supported and a maximum physical storage limit (in TB). Both limits must be honored.

The following table describes the maximum supported total physical storage capacity for the N3150 Model A15 and Model A25:

Disk enclosure	Disk drive capacity	Maximum disk drives	Maximum physical capacity
Internal	450 GB SAS disk drives	12	5.40 TB
	600 GB SAS disk drives	12	7.20 TB
	900 GB SAS disk drives	12	10.80 TB
	1 TB SATA disk drives	12	12.00 TB
	2 TB SATA disk drives	12	24.00 TB
	3 TB SATA disk drives	12	36.00 TB
	100 GB SSD disk drives	12	1.20 TB

The following table describes the maximum supported total external physical storage capacity for all N3150 models:

Disk enclosure	Disk drive capacity	Maximum storage enclosures	Maximum disk drives	Maximum physical capacity
EXN3000	300 GB SAS disk drives	2	48	14.40 TB
EXN3000	450 GB SAS disk drives	2	48	21.60 TB
EXN3000	500 GB SAS disk drives	2	48	24.00 TB
EXN3000	600 GB SAS disk drives	2	48	28.80 TB
EXN3000	500 GB SATA disk drives	2	48	24.00 TB
EXN3000	1 TB SATA disk drives	2	48	48.00 TB
EXN3000	2 TB SATA disk drives	2	48	96.00 TB
EXN3000	3 TB SATA disk drives	2	48	124.00 TB
EXN3500	450 GB SAS disk drives	2	48	21.60 TB
EXN3500	600 GB SAS disk drives	2	48	28.80 TB
EXN3500	900 GB SAS disk drives	2	48	43.20 TB

EXN3000 SAS/SATA storage expansion units may share a SAS stack with EXN3500 SAS storage expansion units.

Section 508 of the US Rehabilitation Act

US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Reference information

Refer to Hardware Announcement [112-199](#), dated November 06, 2012 , IBM System Storage N series function authorizations for IBM System Storage N3150.

Product number

Description	Machine	Model	Feature
N3150 Model A15	2857	A15	
N3150 Model A25	2857	A25	
Hardware features:			
1 TB SATA Drive	2857	A15, A25	4020
2 TB SATA Drive	2857	A15, A25	4021
3 TB SATA Drive	2857	A15, A25	4022
100 GB Solid State Disk	2857	A15, A25	4050
450 GB SAS SFF Disk Drive	2857	A15, A25	4100
600 GB SAS SFF Disk Drive	2857	A15, A25	4101
900 GB SAS SFF Disk Drive	2857	A15, A25	4102
600 GB SAS SFF SED Disk Drive	2857	A15, A25	4201
HDD Blank Panel	2857	A15, A25	4099
Licensed Function Indicators:			
Data ONTAP Essentials	2857	A15	A8R0
iSCSI	2857	A15	A8R2
CIFS	2857	A15	A8R3
NFS	2857	A15	A8R4
SnapLock Compliance	2857	A15	A8R5
SnapLock Enterprise	2857	A15	A8R6
Data ONTAP	2857	A15	A8R7
SnapRestore	2857	A15	A8R8
SnapMirror	2857	A15	A8R9
SnapVault	2857	A15	A8RA
FlexClone	2857	A15	A8RB
SnapManager Suite	2857	A15	A8RC
Complete Bundle	2857	A15	A8RD
Data ONTAP Essentials	2857	A25	A8RH

iSCSI	2857	A25	A8RK
CIFS	2857	A25	A8RL
NFS	2857	A25	A8RM
SnapLock Compliance	2857	A25	A8RN
SnapLock Enterprise	2857	A25	A8RP
Data ONTAP	2857	A25	A8RQ
SnapRestore	2857	A25	A8RR
SnapMirror	2857	A25	A8RS
SnapVault	2857	A25	A8RT
FlexClone	2857	A25	A8RU
SnapManager Suite	2857	A25	A8RV
Complete Bundle	2857	A25	A8RW

Host Software:

SnapDrive for UNIX™ - AIX®	2857	A15, A25	8024
SnapDrive for UNIX - Solaris	2857	A15, A25	8025
SnapDrive for UNIX - HPUX	2857	A15, A25	8026
SnapDrive for UNIX - Linux™	2857	A15, A25	8027
SnapDrive for Windows™	2857	A15, A25	8050
ONTAP DSM for Windows MPIO	2857	A15, A25	8052
SnapManager/Oracle - WIN	2857	A15, A25	8129
SnapManager/Exchange - Host	2857	A15, A25	8131
SnapManager/VI - Host	2857	A15, A25	8133
SnapMgr Hyper-V - Host	2857	A15, A25	8135
SnapManager for SAP - win	2857	A15, A25	8140
SnapManager for SQL - Host	2857	A15, A25	8141
SnapManager for Oracle	2857	A15, A25	8143
SnapManager for SAP	2857	A15, A25	8145
SnapManager SharePoint-Host	2857	A15, A25	8147
SM SharePoint Mgmt. Bundle	2857	A15, A25	8149
Single Mbox Recovery 100pk	2857	A15, A25	8150
Single Mbox Recovery 500pk	2857	A15, A25	8151
Single Mbox Recovery 1000pk	2857	A15, A25	8152
Single Mbox Recovery 2500pk	2857	A15, A25	8153
Single Mbox Recovery 5K pk	2857	A15, A25	8154
Single Mbox Recovery 10K pk	2857	A15, A25	8155
Single Mbox Recovery 50K pk	2857	A15, A25	8156
SMBR CA-ARCSERVE Extract wiz	2857	A15, A25	8158
SMBR Tivoli® Tape Extract wiz	2857	A15, A25	8159
SMBR Legato Tape Extract wiz	2857	A15, A25	8160
SMBR NetBackup Extract wiz	2857	A15, A25	8161
SMBR PST Tape Extract wiz	2857	A15, A25	8162
SMBR HP Extract wiz	2857	A15, A25	8163
SMBR Commvault Galaxy Ex wiz	2857	A15, A25	8164
SMBR UltraBac Extract wizard	2857	A15, A25	8165
SMBR Agent for Adv Search	2857	A15, A25	8166
SMBR Content Analysis wizard	2857	A15, A25	8167
SMBR Administrative Server	2857	A15, A25	8168
SMSP Archiver - Host	2857	A15, A25	8186
OnCommand Core	2857	A15, A25	8255

Power Cords:

PDU Power Cord, 42U Rack	2857	A15, A25	9000
Power Cord, Cont. Europe	2857	A15, A25	9001
Power Cord, UK	2857	A15, A25	9002
Power Cord, Japan	2857	A15, A25	9003
Power Cord, North America	2857	A15, A25	9004
Power Cord, Australia/N.Z.	2857	A15, A25	9005
Power Cord, Switzerland	2857	A15, A25	9006
Power Cord, Argentina	2857	A15, A25	9007
Power Cord, China	2857	A15, A25	9008
Power Cord, Denmark	2857	A15, A25	9009
Power Cord, India/S.Africa	2857	A15, A25	9010
Power Cord, Israel	2857	A15, A25	9011
Power Cord, Italy	2857	A15, A25	9012
Power Cord, N.America 250V	2857	A15, A25	9013
Power Cord, Brazil	2857	A15, A25	9014
Power Cord, Taiwan	2857	A15, A25	9015
Power Cord, Taiwan 250V	2857	A15, A25	9016

Installation:

Plant install in 2101 rack	2857	A15, A25	9201
Field install rack mount kit	2857	A15, A25	9202

Uninstalled code authorization	2857	A15, A25	9550
MES ordering:			
MES Order Indicator	2857	A15, A25	9555
IBM Global Finance Transaction:			
IGF Transaction Indicator	2857	A15, A25	9556
Port/loop counts:			
Number of SAS Stacks	2857	A15, A25	9561
Dual-path Cabling	2857	A25	9563

Model conversions

From Type	Model	To Type	Model	Description
2857	A15	2857	A25	N3150 Model A25

Feature conversions

Type	From	To	Description
2857	A8R0	A8RH	Data ONTAP Essentials
2857	A8R2	A8RK	iSCSI
2857	A8R3	A8RL	CIFS
2857	A8R4	A8RM	NFS
2857	A8R5	A8RN	SnapLock Compliance
2857	A8R6	A8RP	SnapLock Enterprise
2857	A8R7	A8RQ	Data ONTAP
2857	A8R8	A8RR	SnapRestore
2857	A8R9	A8RS	SnapMirror
2857	A8RA	A8RT	SnapVault
2857	A8RB	A8RU	FlexClone
2857	A8RC	A8RV	SnapManager Suite
2857	A8RD	A8RW	Complete Bundle

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM , you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=112-191>

Publications

The following publications are shipped with the product:

Title	Order number
Shipped as hardcopy:	
IBM System Storage N3150 Installation and Setup Instructions	GC27-4216
Shipped on CD-ROM, all above, and	
IBM System Storage N3150, N3220 and N3240 Hardware and Service Guide	SC27-4214

On the web, all above, and:

All of the publications are available on the N series support website

<http://www.ibm.com/storage/support/nseries/>

Publications are only available for download for existing IBM N series customers who have registered their N series products on the N series support site.

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an On Demand Business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

<http://www.ibm.com/services/>

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

<http://www.ibm.com/services/continuity>

For details on education offerings related to specific products, visit

<http://www.ibm.com/services/learning/index.html>

Select your country, and then select the product as the category.

Technical information

Specified operating environment

Physical specifications

- Width: 447.2 mm (17.6 in)
- Depth: 527.04 mm (20.75 in)
- Height: 86.8 mm (3.42 in)
- Weight: 26.4 kg (58.2 lb)

To assure installability and serviceability in non-IBM industry-standard racks, review the installation planning information for any product-specific installation requirements.

IBM System Storage N3150 Model A15/A25
width: 447.2 mm (17.6 in.)
Depth: 527.04 mm (20.75 in.)
Height: 86.8 mm (3.42 in.)
weight: 26.4 kg (58.2 lb)

IBM 2101-N42 rack
width: 65 cm (25.6 in) with side panels
62.3 cm (24.5 in) without side panels
Depth: 109.8 cm (43.3 in) with standard front and rear doors

Height: 201.5 cm (79.3 in)
weight: 215.5 kg (475 lb)
weight: Add 2.3 kg (5.0 lb) for each 2U Rail Kit
weight: Add 4.6 kg (10.2 lb) for each 3U Rail Kit
weight: Add 4.3 kg (9.5 lb) for each standard PDU
weight: Add 6.1 kg (13.5 lb) for each iPDU
weight: Add 35.0 kg (77.0 lb) for each EXN1000 (14 HDD)
weight: Add 35.8 kg (78.8 lb) for each EXN2000 (14 HDD)
weight: Add 44.6 kg (98.3 lb) for each EXN3000 (24 HDD)
weight: Add 22.7 kg (49 lb) for each EXN3500 (24 HDD)
weight: Add 30.0 kg (66.2 lb) for each EXN4000 (14 HDD)

To assure installability and serviceability in non-IBM industry standard racks, review the installation planning information for any product specific installation requirements.

Operating environment

- Temperature:
 - Maximum range: 10° to 40° C (50° to 104° F)
 - Recommended: 20° to 25° C (68° to 77° F)
 - Non-operating: -40° to 70° C (-40° to 158° F)
- Relative humidity:
 - Maximum operating range: 20% to 80% (non-condensing)
 - Recommended operating range: 40% to 55%
 - Non-operating range: 10% to 95% (non-condensing)
 - Maximum wet bulb: 29° C
 - Maximum altitude: 3000 m (10,000 ft.)

Note: Operating at extremes of environment may increase failure probability.

- Wet bulb (caloric value): 2270 Btu/hr
- Maximum electrical power: 100-240 V ac, 8-3 A per node, 50-60 Hz
- Nominal electrical power: 100-120 V ac, 16 A; 200-240 V ac, 6 A, 50-60 Hz
- Noise level:
 - 66 dBA at 1 m at 23° C
 - 7.2 bels at 1 m at 23° C

Hardware requirements

Licensed machine code (LMC)

The N3150 requires LMC 8.1.1, or later. Some N3150 features and functions may not be available or supported in all environments. Current information on supported environments, prerequisites, and minimum operating systems levels is available at

<http://www.ibm.com/servers/storage/nseries>

Current license terms for the machine code provided with this product prohibit transfer of the machine code without approval from NetApp.

Licensed functions

Data ONTAP (feature) is *required* on every N3150 platform. In addition, for dual-node models the CFO function is required; the Data ONTAP Essentials feature includes CFO.

Licensed functions require the selection of N3150 Model A15 or Model A25 features and the acquisition of the corresponding IBM 2870 Model 575 or Model 576, respectively, function authorization features.

Software requirements

Current information on servers, operating systems, host adapters, and connectivity products supported by the N3150 are available at

<http://www.ibm.com/servers/storage/nas>

The required 2870 license features are the same as for the equivalent 2857 Model A15 and Model A25.

Limitations

- The N3150 is supported only in rack installations.
- This product is functional with the System i and OpenPower® platforms. However, on the System i , support is available only on Linux on Power® and AIX partitions, not i5/OS™ .
- Current license terms for the machine code provided with this product prohibit transfer of the machine code without approval from NetApp.

Planning information

Customer responsibilities

Following good safety practice, IBM recommends that three or more people install this product.

Physical configuration and installation planning for the N3150 is a customer responsibility. Information about physical configuration and installation requirements, including equipment, site, and power requirements, can be found in the *IBM System Storage N3150 Series Filer Installation and Setup Instructions* .

A customer-supplied Ethernet cable is required to connect the machine to a server or Ethernet network.

You are responsible for downloading or obtaining from IBM , and installing designated Machine Code (microcode, basic input/output system code (called "BIOS"), utility programs, device drivers, and diagnostics delivered with an IBM machine) and other software updates in a timely manner from an IBM Internet website or from other electronic media, and following the instructions that IBM provides. You may request IBM to install Machine Code changes; however, you may be charged for that service.

Cable orders

SAS Channel cables are required to connect an expansion unit to a N3150 system. Cables can be purchased using expansion unit features.

Installability

Estimated time to unpack an N3150, install it in the rack, and perform a simple discovery and configuration is two hours.

Security, auditability, and control

This product uses the security and auditability features of host hardware, host software, and/or application software to which it is attached.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

Terms and conditions

Volume orders: Contact your IBM representative.

IBM Global Financing

Yes

Warranty period

Three years

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature which replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature is the same as the machine in which it is installed.

Warranty service

If required, IBM provides repair or exchange service depending on the types of warranty service specified for the machine. IBM will attempt to resolve your problem over the telephone, or electronically via an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. If applicable to your product, parts considered Customer Replaceable Units (CRUs) will be provided as part of the machine's standard warranty service.

Service levels are response-time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country-specific and location-specific information.

CRU Service

IBM provides replacement CRUs to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request. CRUs are designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU.

Tier 1 (mandatory) CRU

Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.

Tier 2 (optional) CRU

You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge.

Based upon availability, CRUs will be shipped for next business day (NBD) delivery. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU. You may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following parts have been designated as Tier 1 CRUs:

- AC power cord
- AC power supply
- Disk drive
- Cables
- Memory modules
- Wrap plug
- Operator panel

CRU and On-site Service

At IBM's discretion, you will receive specified CRU service, or IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

Service level is:

- 9 hours per day, Monday through Friday, excluding holidays, next business day response

Warranty service upgrades

During the warranty period, warranty service upgrades provide an enhanced level of On-site Service for an additional charge. Service levels are response-time objectives and are not guaranteed. See the Warranty services section for additional details.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM . You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts.

Maintenance service options

CRU and On-site Service

At IBM's discretion you will receive CRU service or IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose. The following on-site response-time objectives are available as warranty service upgrades for your machine. Available offerings are:

- 9 hours per day, Monday through Friday, excluding holidays, 4-hour average, same-business-day response, IOR
- 24 hours per day, 7 days a week, 4-hour average response, IOR
- 24 hours per day, 7 days a week, 2-hour average response, IOR

Customer Replaceable Units (CRUs) may be provided as part of the machine's standard warranty CRU Service except that you may install a CRU yourself or request IBM installation, at no additional charge, under the CRU and On-site Service level specified above. For additional information on the CRU Service, see the warranty information.

Maintenance services

If required, IBM provides repair or exchange service depending on the types of maintenance service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically, via an IBM website. Certain machines

contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM . You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed. The specified level of maintenance service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country-specific and location-specific information. The following service selections are available as maintenance options for your machine type.

On-site Service

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

Service levels are:

- 9 hours per day, Monday through Friday, excluding holidays, next-business-day response
- 9 hours per day, Monday through Friday, excluding holidays, 4 hour average response
- 24 hours per day, 7 days a week, 4-hour average response
- 24 hours per day, 7 days a week, 2-hour average response

Customer Replaceable Unit (CRU) Service

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), and depending upon the maintenance service offerings in your geography, IBM will ship the replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request.

Based upon availability, CRUs will be shipped for next business day delivery. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM . When return is required, 1) return instructions and a container are shipped with the replacement CRU, and 2) you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

CRUs may be provided as part of the machine's standard maintenance service except that you may install a CRU yourself or request IBM installation, at no additional charge, under any of the On-site Service levels specified above.

Warranty service upgrades

Usage plan machine

No

IBM hourly service rate classification

One

When a type of service involves the exchange of a machine part, the replacement may not be new, but will be in good working order.

Field-installable features

Yes

Model conversions

Yes

Machine installation

Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

Graduated program license charges apply

No

Licensed machine code

This product contains, or is provided together with, code which is licensed to the user, not sold. That code is copyrighted and may be the property of IBM, its supplier(s) or other third parties. You are authorized to use the code to the extent set forth in the applicable license agreement(s) provided with the product. You may also obtain a copy of applicable license agreement by contacting your IBM representative.

Current license terms for the machine code provided with this product prohibit transfer of the machine code without approval from NetApp.

Machines using machine code: 2857-A15 and 2857-A25.

IBM may release changes to the machine code. IBM plans to make the machine code changes available for download from the IBM System Storage technical support website

<http://www-03.ibm.com/servers/storage/support/nas/n3150/downloading.html>

If the machine does not function as warranted and your problem can be resolved through your application of downloadable machine code, you are responsible for downloading and installing these designated machine code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable machine code changes; however, you may be charged for that service.

Educational allowance

A reduced charge is available to qualified education customers. The educational allowance may not be added to any other discount or allowance.

The educational allowance is 15% for the products in this announcement.

Pricing

Product charges

Description	Machine type	Model	Feature number
N3150 Model A15	2857	A15	
N3150 Model A25	2857	A25	
Hardware features:			
1 TB SATA Drive	2857	A15, A25	4020
2 TB SATA Drive	2857	A15, A25	4021
3 TB SATA Drive	2857	A15, A25	4022
100 GB Solid State Disk	2857	A15, A25	4050
450 GB SAS SFF Disk Drive	2857	A15, A25	4100
600 GB SAS SFF Disk Drive	2857	A15, A25	4101
900 GB SAS SFF Disk Drive	2857	A15, A25	4102
600 GB SAS SFF SED Disk Drive	2857	A15, A25	4201

HDD Blank Panel 2857 A15, A25 4099

Licensed Function Indicators:

Data ONTAP Essentials 2857 A15 A8R0
iSCSI 2857 A15 A8R2
CIFS 2857 A15 A8R3
NFS 2857 A15 A8R4
SnapLock Compliance 2857 A15 A8R5
SnapLock Enterprise 2857 A15 A8R6
Data ONTAP 2857 A15 A8R7
SnapRestore 2857 A15 A8R8
SnapMirror 2857 A15 A8R9
SnapVault 2857 A15 A8RA
FlexClone 2857 A15 A8RB
SnapManager Suite 2857 A15 A8RC
Complete Bundle 2857 A15 A8RD

Data ONTAP Essentials 2857 A25 A8RH
iSCSI 2857 A25 A8RK
CIFS 2857 A25 A8RL
NFS 2857 A25 A8RM
SnapLock Compliance 2857 A25 A8RN
SnapLock Enterprise 2857 A25 A8RP
Data ONTAP 2857 A25 A8RQ
SnapRestore 2857 A25 A8RR
SnapMirror 2857 A25 A8RS
SnapVault 2857 A25 A8RT
FlexClone 2857 A25 A8RU
SnapManager Suite 2857 A25 A8RV
Complete Bundle 2857 A25 A8RW

Host Software:

SnapDrive for UNIX - AIX 2857 A15, A25 8024
SnapDrive for UNIX - Solaris 2857 A15, A25 8025
SnapDrive for UNIX - HPUX 2857 A15, A25 8026
SnapDrive for UNIX - Linux 2857 A15, A25 8027
SnapDrive for Windows 2857 A15, A25 8050
ONTAP DSM for Windows MPIO 2857 A15, A25 8052
SnapManager/Oracle - WIN 2857 A15, A25 8129
SnapManager/Exchange - Host 2857 A15, A25 8131
SnapManager/VI - Host 2857 A15, A25 8133
SnapMgr Hyper-V - Host 2857 A15, A25 8135
SnapManager for SAP - win 2857 A15, A25 8140
SnapManager for SQL - Host 2857 A15, A25 8141
SnapManager for Oracle 2857 A15, A25 8143
SnapManager for SAP 2857 A15, A25 8145
SnapManager SharePoint-Host 2857 A15, A25 8147
SM SharePoint Mgmt. Bundle 2857 A15, A25 8149
Single Mbox Recovery 100pk 2857 A15, A25 8150
Single Mbox Recovery 500pk 2857 A15, A25 8151
Single Mbox Recovery 1000pk 2857 A15, A25 8152
Single Mbox Recovery 2500pk 2857 A15, A25 8153
Single Mbox Recovery 5K pk 2857 A15, A25 8154
Single Mbox Recovery 10K pk 2857 A15, A25 8155
Single Mbox Recovery 50K pk 2857 A15, A25 8156
SMBR CA-ARCSERVE Extract wiz 2857 A15, A25 8158
SMBR Tivoli Tape Extract wiz 2857 A15, A25 8159
SMBR Legato Tape Extract wiz 2857 A15, A25 8160
SMBR NetBackup Extract wiz 2857 A15, A25 8161
SMBR PST Tape Extract wiz 2857 A15, A25 8162
SMBR HP Extract Wiz 2857 A15, A25 8163
SMBR Commvault Galaxy Ex Wiz 2857 A15, A25 8164
SMBR UltraBac Extract Wizard 2857 A15, A25 8165
SMBR Agent for Adv Search 2857 A15, A25 8166
SMBR Content Analysis wizard 2857 A15, A25 8167
SMBR Administrative Server 2857 A15, A25 8168
SMSP Archiver - Host 2857 A15, A25 8186
OnCommand Core 2857 A15, A25 8255

Power Cords:

PDU Power Cord, 42U Rack 2857 A15, A25 9000
Power Cord, Cont. Europe 2857 A15, A25 9001
Power Cord, UK 2857 A15, A25 9002
Power Cord, Japan 2857 A15, A25 9003

Power Cord, North America	2857	A15, A25	9004
Power Cord, Australia/N.Z.	2857	A15, A25	9005
Power Cord, Switzerland	2857	A15, A25	9006
Power Cord, Argentina	2857	A15, A25	9007
Power Cord, China	2857	A15, A25	9008
Power Cord, Denmark	2857	A15, A25	9009
Power Cord, India/S.Africa	2857	A15, A25	9010
Power Cord, Israel	2857	A15, A25	9011
Power Cord, Italy	2857	A15, A25	9012
Power Cord, N.America 250V	2857	A15, A25	9013
Power Cord, Brazil	2857	A15, A25	9014
Power Cord, Taiwan	2857	A15, A25	9015
Power Cord, Taiwan 250V	2857	A15, A25	9016

Installation:

Plant install in 2101 rack	2857	A15, A25	9201
Field install rack mount kit	2857	A15, A25	9202
Uninstalled code auth	2857	A15, A25	9550

MES ordering:

MES Order Indicator	2857	A15, A25	9555
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Global Finance transaction:

IGF Transaction Indicator	2857	A15, A25	9556
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Port/loop counts:

Number of SAS Stacks	2857	A15, A25	9561
Dual-path Cabling	2857	A15, A25	9563

Description	Mach/Mod/Feat	Plant/ Field install	MES removal	Cabl req.	CSU ¹
1 TB SATA Drive	2857/A15/4020	Both	N	N	Y
2 TB SATA Drive	2857/A15/4021	Both	N	N	Y
3 TB SATA Drive	2857/A15/4022	Both	N	N	Y
100 GB Solid State Disk	2857/A15/4050	Both	N	N	Y
450 GB SAS SFF Disk Drive	2857/A15/4100	Both	N	N	Y
600 GB SAS SFF Disk Drive	2857/A15/4101	Both	N	N	Y
900 GB SAS SFF Disk Drive	2857/A15/4102	Both	N	N	Y
600 GB SAS SFF SED Dsk Drive	2857/A15/4201	Both	N	N	Y
HDD Blank Panel	2857/A15/4099	Field	N	N	Y
Data ONTAP Essentials	2857/A15/A8R0	Both	N ²	N	Y
iSCSI	2857/A15/A8R2	Both	N ²	N	Y
CIFS	2857/A15/A8R3	Both	N ²	N	Y
NFS	2857/A15/A8R4	Both	N ²	N	Y
SnapLock Compliance	2857/A15/A8R5	Both	N ²	N	Y
SnapLock Enterprise	2857/A15/A8R6	Both	N ²	N	Y
Data ONTAP	2857/A15/A8R7	Both ³	N ²	N	Y
SnapRestore	2857/A15/A8R8	Both	N ²	N	Y
SnapMirror	2857/A15/A8R9	Both	N ²	N	Y
Snapvault	2857/A15/A8RA	Both	N ²	N	Y
FlexClone	2857/A15/A8RB	Both	N ²	N	Y
SnapManager Suite	2857/A15/A8RC	Both	N ²	N	Y
Complete Bundle	2857/A15/A8RD	Both ³	N ²	N	Y
SnapDrive for UNIX - AIX	2857/A15/8024	Both	N	N	Y
SnapDrive for UNIX - Solaris	2857/A15/8025	Both	N	N	Y
SnapDrive for UNIX - HPUX	2857/A15/8026	Both	N	N	Y
SnapDrive for UNIX - Linux	2857/A15/8027	Both	N	N	Y
SnapDrive for windows	2857/A15/8050	Both	N	N	Y
ONTAP DSM for windows MPIO	2857/A15/8052	Both	N	N	Y
SnapManager/Oracle - WIN	2857/A15/8129	Both	N	N	Y
SnapManager/Exchange - Host	2857/A15/8131	Both	N	N	Y
SnapManager/VI - Host	2857/A15/8133	Both	N	N	Y
SnapMgr Hyper-V - Host	2857/A15/8135	Both	N	N	Y
SnapManager for SAP - Win	2857/A15/8140	Both	N	N	Y
SnapManager for SQL - Host	2857/A15/8141	Both	N	N	Y
SnapManager for Oracle	2857/A15/8143	Both	N	N	Y
SnapManager for SAP	2857/A15/8145	Both	N	N	Y
SnapManager SharePoint-Host	2857/A15/8147	Both	N	N	Y
SM SharePoint Mgmt. Bundle	2857/A15/8149	Both	N	N	Y
Single Mbox Recovery 100pk	2857/A15/8150	Both	N	N	Y

Single Mbox Recovery 500pk	2857/A15/8151	Both	N	N	Y
Single Mbox Recovery 1000pk	2857/A15/8152	Both	N	N	Y
Single Mbox Recovery 2500pk	2857/A15/8153	Both	N	N	Y
Single Mbox Recovery 5K pk	2857/A15/8154	Both	N	N	Y
Single Mbox Recovery 10K pk	2857/A15/8155	Both	N	N	Y
Single Mbox Recovery 50K pk	2857/A15/8156	Both	N	N	Y
SMBR CA-ARCSERVE Extract wiz	2857/A15/8158	Both	N	N	Y
SMBR Tivoli Tape Extract wiz	2857/A15/8159	Both	N	N	Y
SMBR Legato Tape Extract wiz	2857/A15/8160	Both	N	N	Y
SMBR NetBackup Extract wiz	2857/A15/8161	Both	N	N	Y
SMBR PST Tape Extract Wiz	2857/A15/8162	Both	N	N	Y
SMBR HP Extract Wiz	2857/A15/8163	Both	N	N	Y
SMBR Commvault Galaxy Ex Wiz	2857/A15/8164	Both	N	N	Y
SMBR UltraBac Extract Wizard	2857/A15/8165	Both	N	N	Y
SMBR Agent for Adv Search	2857/A15/8166	Both	N	N	Y
SMBR Content Analysis Wizard	2857/A15/8167	Both	N	N	Y
SMBR Administrative Server	2857/A15/8168	Both	N	N	Y
SMSP Archiver - Host	2857/A15/8186	Both	N	N	Y
OnCommand Core	2857/A15/8255	Both	N	N	Y
PDU Power Cord, 42U Rack	2857/A15/9000	Both	N	N	Y
Power Cord, Cont. Europe	2857/A15/9001	Both	N	N	Y
Power Cord, UK	2857/A15/9002	Both	N	N	Y
Power Cord, Japan	2857/A15/9003	Both	N	N	Y
Power Cord, North America	2857/A15/9004	Both	N	N	Y
Power Cord, Australia/N.Z.	2857/A15/9005	Both	N	N	Y
Power Cord, Switzerland	2857/A15/9006	Both	N	N	Y
Power Cord, Argentina	2857/A15/9007	Both	N	N	Y
Power Cord, China	2857/A15/9008	Both	N	N	Y
Power Cord, Denmark	2857/A15/9009	Both	N	N	Y
Power Cord, India/S.Africa	2857/A15/9010	Both	N	N	Y
Power Cord, Israel	2857/A15/9011	Both	N	N	Y
Power Cord, Italy	2857/A15/9012	Both	N	N	Y
Power Cord, N.America 250V	2857/A15/9013	Both	N	N	Y
Power Cord, Brazil	2857/A15/9014	Both	N	N	Y
Power Cord, Taiwan	2857/A15/9015	Both	N	N	Y
Power Cord, Taiwan 250V	2857/A15/9016	Both	N	N	Y
Plant install in 2101 rack	2857/A15/9201	Plant	N	N	Y
Field install rack mount kit	2857/A15/9202	Plant	N	N	Y
Uninstalled code authoriz	2857/A15/9550	Plant	N	N	Y
MES Order Indicator	2857/A15/9555	Field	N	N	Y
IGF Transaction Indicator	2857/A15/9556	Field	N	N	Y
Number of SAS Stacks	2857/A15/9561	Plant	N	N	Y
1 TB SATA Drive	2857/A25/4020	Both	N	N	Y
2 TB SATA Drive	2857/A25/4021	Both	N	N	Y
3 TB SATA Drive	2857/A25/4022	Both	N	N	Y
100 GB Solid State Disk	2857/A25/4050	Both	N	N	Y
450 GB SAS SFF Disk Drive	2857/A25/4100	Both	N	N	Y
600 GB SAS SFF Disk Drive	2857/A25/4101	Both	N	N	Y
900 GB SAS SFF Disk Drive	2857/A25/4102	Both	N	N	Y
600 GB SAS SFF SED Dsk Drive	2857/A25/4201	Both	N	N	Y
HDD Blank Panel	2857/A25/4099	Field	N	N	Y
Data ONTAP Essentials	2857/A25/A8RH	Both	N ²	N	Y
iSCSI	2857/A25/A8RK	Both	N ²	N	Y
CIFS	2857/A25/A8RL	Both	N ²	N	Y
NFS	2857/A25/A8RM	Both	N ²	N	Y
SnapLock Compliance	2857/A25/A8RN	Both	N ²	N	Y
SnapLock Enterprise	2857/A25/A8RP	Both	N ²	N	Y
Data ONTAP	2857/A25/A8RQ	Both ³	N ²	N	Y
SnapRestore	2857/A25/A8RR	Both	N ²	N	Y
SnapMirror	2857/A25/A8RS	Both	N ²	N	Y
Snapvault	2857/A25/A8RT	Both	N ²	N	Y
FlexClone	2857/A25/A8RU	Both	N ²	N	Y
SnapManager Suite	2857/A25/A8RV	Both	N ²	N	Y
Complete Bundle	2857/A25/A8RW	Both ³	N ²	N	Y
SnapDrive for UNIX - AIX	2857/A25/8024	Both	N	N	Y
SnapDrive for UNIX - Solaris	2857/A25/8025	Both	N	N	Y
SnapDrive for UNIX - HPUX	2857/A25/8026	Both	N	N	Y
SnapDrive for UNIX - Linux	2857/A25/8027	Both	N	N	Y
SnapDrive for windows	2857/A25/8050	Both	N	N	Y
ONTAP DSM for windows MPIO	2857/A25/8052	Both	N	N	Y
SnapManager/Oracle - WIN	2857/A25/8129	Both	N	N	Y

SnapManager/Exchange - Host	2857/A25/8131	Both	N	N	Y
SnapManager/VI - Host	2857/A25/8133	Both	N	N	Y
SnapMgr Hyper-V - Host	2857/A25/8135	Both	N	N	Y
SnapManager for SAP - Win	2857/A25/8140	Both	N	N	Y
SnapManager for SQL - Host	2857/A25/8141	Both	N	N	Y
SnapManager for Oracle	2857/A25/8143	Both	N	N	Y
SnapManager for SAP	2857/A25/8145	Both	N	N	Y
SnapManager SharePoint-Host	2857/A25/8147	Both	N	N	Y
SM SharePoint Mgmt. Bundle	2857/A25/8149	Both	N	N	Y
Single Mbox Recovery 100pk	2857/A25/8150	Both	N	N	Y
Single Mbox Recovery 500pk	2857/A25/8151	Both	N	N	Y
Single Mbox Recovery 1000pk	2857/A25/8152	Both	N	N	Y
Single Mbox Recovery 2500pk	2857/A25/8153	Both	N	N	Y
Single Mbox Recovery 5K pk	2857/A25/8154	Both	N	N	Y
Single Mbox Recovery 10K pk	2857/A25/8155	Both	N	N	Y
Single Mbox Recovery 50K pk	2857/A25/8156	Both	N	N	Y
SMBR CA-ARCSERVE Extract Wiz	2857/A25/8158	Both	N	N	Y
SMBR Tivoli Tape Extract Wiz	2857/A25/8159	Both	N	N	Y
SMBR Legato Tape Extract Wiz	2857/A25/8160	Both	N	N	Y
SMBR NetBackup Extract Wiz	2857/A25/8161	Both	N	N	Y
SMBR PST Tape Extract Wiz	2857/A25/8162	Both	N	N	Y
SMBR HP Extract Wiz	2857/A25/8163	Both	N	N	Y
SMBR Commvault Galaxy Ex Wiz	2857/A25/8164	Both	N	N	Y
SMBR UltraBac Extract Wizard	2857/A25/8165	Both	N	N	Y
SMBR Agent for Adv Search	2857/A25/8166	Both	N	N	Y
SMBR Content Analysis Wizard	2857/A25/8167	Both	N	N	Y
SMBR Administrative Server	2857/A25/8168	Both	N	N	Y
SMSP Archiver - Host	2857/A25/8186	Both	N	N	Y
OnCommand Core	2857/A25/8255	Both	N	N	Y
PDU Power Cord, 42U Rack	2857/A25/9000	Both	N	N	Y
Power Cord, Cont. Europe	2857/A25/9001	Both	N	N	Y
Power Cord, UK	2857/A25/9002	Both	N	N	Y
Power Cord, Japan	2857/A25/9003	Both	N	N	Y
Power Cord, North America	2857/A25/9004	Both	N	N	Y
Power Cord, Australia/N.Z.	2857/A25/9005	Both	N	N	Y
Power Cord, Switzerland	2857/A25/9006	Both	N	N	Y
Power Cord, Argentina	2857/A25/9007	Both	N	N	Y
Power Cord, China	2857/A25/9008	Both	N	N	Y
Power Cord, Denmark	2857/A25/9009	Both	N	N	Y
Power Cord, India/S.Africa	2857/A25/9010	Both	N	N	Y
Power Cord, Israel	2857/A25/9011	Both	N	N	Y
Power Cord, Italy	2857/A25/9012	Both	N	N	Y
Power Cord, N.America 250V	2857/A25/9013	Both	N	N	Y
Power Cord, Brazil	2857/A25/9014	Both	N	N	Y
Power Cord, Taiwan	2857/A25/9015	Both	N	N	Y
Power Cord, Taiwan 250V	2857/A25/9016	Both	N	N	Y
Plant install in 2101 rack	2857/A25/9201	Plant	N	N	Y
Field install rack mount kit	2857/A25/9202	Plant	N	N	Y
Uninstalled code authoriz	2857/A25/9550	Plant	N	N	Y
MES Order Indicator	2857/A25/9555	Field	N	N	Y
IGF Transaction Indicator	2857/A25/9556	Field	N	N	Y
Number of SAS Stacks	2857/A25/9561	Plant	N	N	Y
Dual-path Cabling	2857/A25/9563	Plant	N	N	Y

- 1 Customer setup
- 2 The feature can be removed only through a feature conversion transaction.
- 3 The feature is field install only during a model conversion.

Pricing terms

Prices in the following PDF prices link are suggested list prices on day of announcement for the U.S. only. They are provided for your information only. Dealer prices may vary, and prices may also vary by country. IBM list price does not include tax or shipping and is subject to change without notice.

[ENUS-112-191-LIST_PRICES_2012_11_13.PDF](#)

ServicePac prices

For ServiceELECT (ESA) maintenance service charges, contact IBM Global Services at 888-IBM-4343 (426-4343).

Model conversion purchase price

Machine Type 2857 - model conversions

From Model	To Model	Returned Parts
A15	A25	No

Feature conversion purchase price

Feature from	to	Returned parts	Continuous maintenance
A8R0	A8RH	N	Y
A8R2	A8RK	N	Y
A8R3	A8RL	N	Y
A8R4	A8RM	N	Y
A8R5	A8RN	N	Y
A8R6	A8RP	N	Y
A8R7	A8RQ	N	Y
A8R8	A8RR	N	Y
A8R9	A8RS	N	Y
A8RA	A8RT	N	Y
A8RB	A8RU	N	Y
A8RC	A8RV	N	Y
A8RD	A8RW	N	Y

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