NEC Express5800/320Fc

NEXT-GENERATION FAULT TOLERANT SERVER

- Up to 99.999% continuous availability
- Supports both one or two Dual-Core Quad-Core Intel Xeon CPUS
- Customer Replaceable Modules

HIGH AVAILABILITY FOR PLANNED AND UNPLANNED DOWNTIME OF MISSION CRITICAL APPLICATIONS

Empowered by Innovation NEC

NEC's fourth-generation Express5800/320Fc Fault Tolerant (FT) server is the first in the industry to deliver lockstep support for the latest Intel® CPU technology–supporting low voltage operation of Dual-Core and Quad-Core "top bin" performance of the Xeon® 5300 series processor.

With fully redundant modules running in lockstep, the 320Fc FT series delivers the utmost in high availability through protection of memory and processing state. This allows organizations of any size to realize the highest levels of availability and system integrity, with the added benefit of operational simplicity.

Enhanced features:

- Increased logical memory capacity to 24 GB for applications and virtualization
- Front side bus (FSB) speed enhancement (1333 MHz)
- PCI-X and PCI Express I/O expansion
- Choice of SAS or SATA internal disk support, as well as certified support for NEC and third-party external storage subsystems

Continuous Availability —Up to 99.999% Uptime

Equipped with fully redundant and hot-swappable components including redundant memory, processors and I/O subsystems—the Express5800/320Fc achieves up to 99.999% continuous availability. The complete line of NEC Express5800 series of servers delivers the highest performance available with Intel Quad-Core and Dual-Core Xeon processors. Unlike conventional Intel-based server solutions that are not fully redundant, NEC's FT redundant server architecture eliminates single points of failure and isolates hardware failures immediately. This process saves significant troubleshooting time and helps to preserve memory and processor status.

Availability	Total Accumulated Outage per/yr.	# of 9's
90%	More than 1 month	1
99%	Just under 4 days	2
99.9%	Just under 9 hours	3
99.99%	Just under 1 hour	4
99.999%	A little over 5 minutes	5

The Express5800 offers Active Upgrade,™ a feature that eliminates the need to disrupt server operations to conduct essential software maintenance on the Windows® Server platform. Active Upgrade enables non-stop server operation while performing software maintenance that often removes other servers from operation for several hours.

System Integrity

Since the FT system involves continuous checking of all instructions and I/O operations in lockstep, the system provides an unsurpassed level of system integrity. Transient hardware errors that would be normally passed to the operating system and application layer are isolated proactively and transparently to improve the operational stability and system integrity. The result is that there is no loss of memory state or corruption of data in the event of a system error.

Operational Simplicity

With the support of leading operating system and virtualization providers, the 320Fc FT implements redundancy at the hardware level, reducing failures to notifications and indicator light status. This approach significantly reduces the complexity associated with other forms of high availability such as clustering systems, and has the added benefit of simplifying system management and recovery operations, since administration and configuration is performed as a single-system view.

Simplified deployment and operation, remote monitoring, standard application support and software license savings, Active Upgrade technology and continued operation in the event of hardware failure, all make the NEC Express5800/320Fc FT deliver the utmost in operational savings. NEC's FT server provides uncompromised operational savings.

Key Features

- Microsoft® Windows Server® 2003 Enterprise Edition R2 (32-bit edition)
- Red Hat® Enterprise Linux™ Advanced Server (64-bit edition)
- Single or dual logical 2.0 GHz Dual-Core or 2.66 GHz Quad-Core Intel® Xeon® processors for high-speed performance
- ExpressCluster® SRE for application monitoring and restarting, and seamless disaster recovery
- Remote monitoring software and service for extensive "lights out" computing
- Compact 4U footprint saves space in either rackmount or tower configuration
- Internal support for up to 1.5 TB of enterprise-class SAS or SATA storage
- Simplified disaster recovery between FT servers over LAN or WAN with NEC ExpressCluster software integrated

Operational Savings

NEC is able to deliver high availability at substantially reduced operational costs. Since the NEC FT is a single system it only requires one operating system and one application software license. Compared to cluster systems, the FT is a turnkey solution with rapid and easy system deployment and application set up. It doesn't require the administrative resources typically associated with clustering systems for upgrades and maintenance. This lowers administration costs and improves availability. It also results in productivity improvements by avoiding unplanned hardware outages. All of these factors result in a reduced Total Cost of Ownership (TCO).

Rapid System Deployment

The FT supports standard Microsoft and Red Hat operating systems. There is no need to modify the OS or application. This eliminates complexity of conventional HA system deployments (script, failover and recovery operation design, failover test, etc.)

Ample Internal & External Storage Capacity

The 320FC provides ample storage internally with three logical Enterprise SAS or SATA drive bays for a combined maximum capacity of 1.5 TB (with the use of 500 GB SATA hard disk drives). If more space is required, the Express5800/320Fc supports connectivity to a variety of storage options from NEC and other leading storage vendors. NEC's D-Series storage arrays provide 4 to 1500 HDDs of storage and 4 to 128 GB of cache over 4 to 64 × 4 Gbps fibre channel ports, as well as RAID 6 double–parity technology for greater reliability and performance.

Value-Add Software

Active Upgrade™ is a combination of system architecture and software that allows the administrator to perform routine software maintenance with minimal interruption. Active Upgrade technology addresses planned server downtime necessary to install upgrades and enhancements to operating systems, service packs, applications, and system software.

The updating process has much less impact to business operations with Active Upgrade technology by splitting the fully redundant system into two independently running servers, and enabling online upgrades. An innovative approach to address a top concern of IT departments on dealing with the monthly patches issued by Microsoft, Active Upgrade ensures the availability of the Windows OS.

ESMPRO Management Suite is a family of integrated server management SNMP-based tools that enable system administrators to continuously monitor, analyze and manage critical server information and operation throughout the network. ESMPRO enables quick response to critical issues and provides proactive planning and server administration. EXPRESSBUILDER installation software allows for easy setup and system management.

ExpressCluster® Self Recovery Edition (SRE) software monitors the performance of application processes. In the event of an application failure, SRE will restart applications as necessary, or restart the server after a customer–specified number of attempts. Additionally, ExpressCluster delivers simplified disaster recovery by allowing the FT system to provide site level availability and utilize NEC's replication services to deploy a disaster recovery solution simply and easily.

Our Commitment

The NEC reputation is built on more than just technology and innovation. We are also known for the way we work with our clients and the culture of cooperation we bring to each engagement. As a company, we recognize how important it is to communicate openly with clients, listening to their concerns and needs, and then using these as a blueprint for future work.

NEC Corporation of America is a leading technology provider of network, IT and identity management solutions. Headquartered in Irving, Texas, NEC Corporation of America is the North America subsidiary of NEC Corporation. NEC Corporation of America delivers technology and professional services ranging from server and storage solutions, IP voice and data solutions, optical network and microwave radio communications to biometrics security, virtualization and digital cinema solutions. NEC Corporation of America serves carrier, SMB and large enterprise clients across multiple vertical industries.

System Specifications

Available Processors

2 × Quad-Core Intel Xeon X5355, 2×4MB Cache, 2.66GHz, 1333MHz FSB
2 × Dual-Core Intel Xeon 5130, 2×4MB Cache, 2GHz, 1333MHz FSB

Memory

Logical Maximum 24GB Quad-Channel DDR2-667 FB DIMM

Storage

73GB, 146GB, 300GB 15K RPM SAS

250GB, 500GB 7.2K RPM SATA II

Network

2 × 1000 BASE-T

Expansion Slots

3 Slots

2 × Full height (64bit/100MHz)

1 × Low profile1(64bit/133MHz)

External Storage

Supports any attached SAN using NEC-approved HBA cards

Operating Systems

Standard Operating System Support:
Microsoft Windows Server 2003 R2 Enterprise Edition
Red Hat Linux ADV Server for update 4
VMware ESX 3.02ft

Video

AT ES1000 32MB

Form Factor

4U Rack (Tower Conversion Kit is available.)

Removable Media

2 × 24 Slimline CD-RW/DVD Combo

External Interfaces

3 × USB 2.0

2 × D-SUB 9-Pin Serial

1 × 4 Lane ESAS (Optional)

Warranty

1-year standard warranty

9–5 toll-free technical support

72-hour defective CRU replacement

Extended Warranty Coverage (Optional)

24 / 7 toll-free technical support

24 / 7 Alert Monitoring

Next day advanced CRU replacement

Professional Services (Optional)

Installation services

SRE script implementation

Active Upgrade implementation and support

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