

NEC Dynamic IT infrastructure

INNOVATION AND RELIABILITY FOR A PERFORMING DATACENTER

Global Solution Provider

- Servers & Storage
- Virtualization
- Business Continuity
- Dynamic Datacenter



NEC, a global IT solutions provider

LEVERAGE YOUR INVESTMENT WITH NEC SERVICES AND SOLUTIONS

NEC aims to provide optimal solutions for its customers. Innovation is the key to ongoing success. Our company has been at the cutting edge of research and development in its field for over a century.

BUSINESS CONTINUITY
GREEN IT
DATA CENTER
SOFTWARE
SERVERS
DESKTOP
SOLUTIONS
STORAGE
INNOVATION
VIRTUALIZATION
UNIFIED COMMUNICATION
SIMPLICITY
SCALABILITY

Through a 100% indirect distribution model relying on value added resellers, NEC provides comprehensive end-to-end IT solutions for all size businesses.

In the increasingly complex world that is developing around us, NEC is playing an important role in creating the innovations that shape our lives.

Striving to find solutions to the various challenges faced by consumers in their daily and business lives, NEC upholds that working and thinking together with the customer is the key to success. Through this continuous process, NEC strengthens its own technology and know-how resulting in customized solutions that achieve ever-higher levels of customer' satisfaction. Hence, our global slogan "Empowered by Innovation" represents our relentless desire to innovate not only the lives and businesses of our customers, but also society as a whole.

Companies today have to focus on new IT challenges such as virtualization, consolidation, business continuity and energy efficiency to reduce their Operating Expenditure (OPEX) with a rapid Return on Investments (ROI). On the other hand Datacenter solutions such as SaaS, IaaS, DaaS are fully part of CIO investigations. Thanks to its Dynamic IT Infrastructure approach that includes software solutions and the Express5800 server line, NEC provides to its customers complete and comprehensive solutions, adapted to each requirement.

From tower servers for small entities, performing and power saving racks to management software specifically designed for Datacenters, NEC demonstrates its capability to lead the innovation in IT to address new challenges.



NEC SERVER, STORAGE & SERVICES SOLUTIONS

NEC Express5800 Server Solutions

Leveraging a rich heritage of Mainframe and Supercomputer development, NEC's Express5800 Server Family delivers innovative features that address today's complex IT Infrastructure computing needs - with a track record of award winning performance and breakthrough features.

- Enterprise Servers
- Fault Tolerant Servers
- Blade Servers
- Rack Servers

NEC Storage Solutions

The new NEC M-Series range and the D-Series range consist of storage arrays which provide a unique scalable SAN solution for medium and large businesses. This storage infrastructure solution allows for growth without interrupting operations. This range available in both Fibre Channel and iSCSI configuration, provides an affordable high performance solution to small and medium size businesses.

NEC Solutions & Services

Today's IT systems are at the heart of business development, and play a major role in their competitiveness and financial stability. NEC helps companies and institutions develop innovative solutions that meet unique needs and are employed in diverse markets. Driven by a customer-centered philosophy, we adhere to open standards. Based on a solid experience, NEC provides your infrastructure with a personalized service adapted for your everyday needs whilst providing a continuing performance at an optimal level. NEC has opted for the best ratio of cost, simplicity and performance.

The complete NEC portfolio tends towards Business Continuity

DISASTER RECOVERY SOLUTION

- Detect system failures in event of disaster / Failover over Wan
- Geographical resiliency

NON STOP SYSTEMS SOLUTIONS

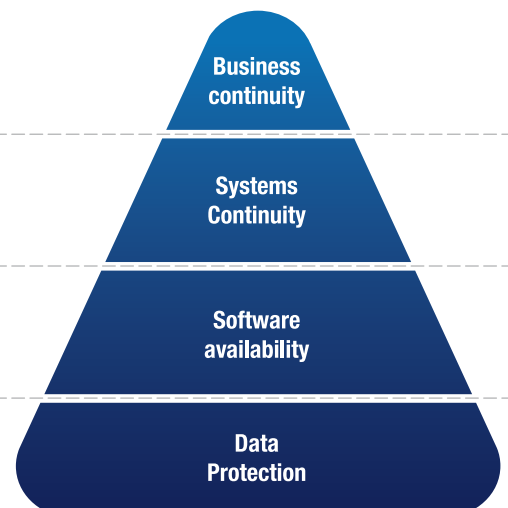
- Detect unexpected system failure / No stop no loss
- Local resiliency

CLUSTERING SOLUTIONS

- Detect unexpected software process terminations / Failover
- Geographical resiliency

BACKUP & STORAGE SOLUTIONS

- D2D2T technologies, Storage and Data scalability
- Local resiliency



ENTRY LEVEL SERVERS TO ANSWER DAY TO DAY NEEDS

This range is part of the NEC strategy, which is to offer innovative solutions to enable energy consumption to be reduced and to minimize the environmental impact of information technologies within each business.

GENERAL PURPOSE SERVERS

NEC's GPS server range allows each company to

- increase its efficiency and productivity by including more powerful and scalable servers with an improved performance of 40% to 130% compared to previous generations.
- reduce the energy consumption and management costs by up to 30%.
- reduce the complexity of the infrastructure using simplified remote administration



Moreover, NEC benefits from a great deal of experience with super computers and mainframes, which has enabled us to offer high quality, reliability and high performance in these servers.

NEC FLEXPPOWER SOLUTION

This all-in-one infrastructure server embeds up to 6 blade servers, up to 14 disks and network switches in a single enclosure ensuring high availability with its complete components redundancy. It is designed for small and medium-sized companies which are looking for a cost-effective consolidation infrastructure solution that reduces energy expenditure by 30%



NEC SIGMABLADE

The new NEC SIGMABLADE range consists of three versions of blade servers and high density chassis, embedding from 8 to 16 blades (SIGMABLADE M or H). NEC SIGMABLADES are an effective solution to solve consolidation and maintenance problems.

NEC SigmaSystemCenter provides a unified management of physical and virtual infrastructure: from installation to maintenance, providing manual or automated advanced operations features (provisioning, alarms, high availability plan etc. ..)

Characteristics

- High-density and space savings
- Scalable systems
- Energy saving
- Simplified cabling
- Simplified Administration



SERVER VIRTUALIZATION





REDUCE OPERATIONAL COSTS (OPEX) WITH SERVER VIRTUALIZATION.


In order to face new IT challenges linked to political, economic and environmental aspects (financial crisis, mergers and acquisitions, competitiveness, CO2 impact), NEC offers a very pragmatic approach around virtualization technologies designed to make your business more agile, more efficient and more cost effective.

NEC proposes virtualization solutions for SMB and Large accounts, from simple to complex architectures.

NEC IT Platform provides you with a set of solutions:







- Packaged offering, To optimize costs and opt for simplicity.

SERVER VIRTUALIZATION NEEDS	YOUR CHOICE
<ul style="list-style-type: none"> • Optimize your existing Window servers environment • A cost-effective solution • A full integration with Microsoft System 	 FlexHyperV 
<ul style="list-style-type: none"> • All-in-One VMware infrastructure • Advanced virtualization features • Optimal flexibility • High availability 	FlexvServer  
<ul style="list-style-type: none"> • Customized infrastructure servers, storage, blades and management software to address high availability requirements and automation of operational tasks for optimum agility. 	

CUSTOMIZED VIRTUALIZATION NEEDS	YOUR CHOICE
<ul style="list-style-type: none"> • High performance • Maximum Density • Agility • Scalability • High availability • Multi-site 	

DESKTOP VIRTUALIZATION

HVD (Hosted Virtual Desktops) should represent 40% of the installed base of desktops by 2013 (Source IDC in February 2009) due to great benefits providing the user a new ease of use of their work environment more flexible and more mobile, providing the CIO better agility while reducing OPEX. It is indeed for IT managers a way to increase the security of their information system, to offer its users a high level of service (high availability), to reduce expenses related to maintenance and administration of the PCs to focus on its business applications to be an actor in the overall performance of the company.

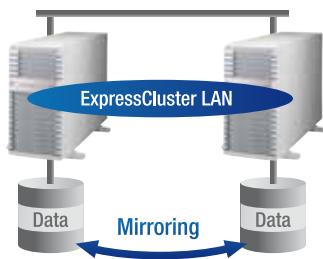
DESKTOP VIRTUALIZATION NEEDS	YOUR CHOICE
<ul style="list-style-type: none"> • Virtualization appliance • Simplicity and Flexibility • On demand Scalability • Unmatched pricing to replace PCs 	 
<ul style="list-style-type: none"> • Performance and Efficiency • Advanced management features • All in one solution • Application virtualization 	FlexvClient  
<ul style="list-style-type: none"> • Integrated solution • Advanced multimedia features • Advanced management for large scale deployments • Energy efficiency • High availability 	 

BUSINESS CONTINUITY

Businesses today cannot afford to have systems that are not up and available, especially during peak working hours. The planning, design and implementation of an NEC Business Continuity solution will ensure that critical systems and data are available when needed.

Business continuity approach

High Availability NEC Mirrored Software Cluster



Uptime: 99.9%-99.99%
Downtime: 1-9hrs/yr
Hardware Availability: 99.99%
Software Availability: 99.99%
Scope: LAN

- Local high availability for transactional systems
- Synchronous data integrity
- Full software redundancy

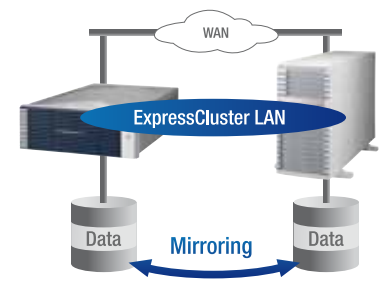
Continuous Availability NEC Mirrored Software Cluster



Uptime: 99.999%
Downtime: 5 min/yr
Hardware Availability: 99.999%
Software Availability: N/A
Scope: Local Only

- Redundant hardware operates as a single server
- Lockstep failover for hardware
- Hot-swap server modules

Continuous Availability + Disaster Recovery Mirrored Software & Redundant Server WAN Cluster



Uptime: 99.9%-99.999%+
Downtime: 5 min/yr, plus disaster recovery
Hardware Availability: 99.999%
Software Availability: 99.999%
Scope: WAN

- System disaster recovery
- Synchronised data integrity
- Low bandwidth and long distance WAN support

Fault Tolerant

Deploying a highly available IT system and reducing acquisition and operational costs. IT managers need to offer their customers, internal or external, a level of unprecedented service with reduced budgets. High-availability technologies are numerous (Cluster hardware and software, fault tolerance hardware and software) but more often uneven in terms of acquisition costs and administrative complexity. NEC has opted for the best ratio of cost, simplicity and performance by offering a complete range of solutions.

NEC's Fault Tolerant servers achieve up to 99.999% system uptime or approximately five minutes of annual downtime.

"Hardware failure is the most common reason for unplanned downtime," said Matt Eastwood, group Vice President, Enterprise Platforms, IDC. "Unplanned downtime can cost millions per hour, and can result in lost lives, loss of business, and SLA fines. Fault tolerant servers offer improved continuous protection against hardware failures and provide enterprises with a critical solution to these challenges."

The Fault Tolerant server is the only solution that can offer a total security with non stop business, no loss of any transaction in case of hardware failure. This has to be compared to a physical or virtual cluster where the application will crash in case of hardware failure and where at least 5 to 10 minutes will be necessary before recovery. Last but not least the Fault Tolerant server requires no on site technical skill and is also provided with a remote, non intrusive monitoring service by NEC.

FAULT TOLERANT FEATURES

- High system performance
- Built-in High Availability technology
- No loss of transactions, no loss of Data
- 100% standard components redundancy
- Support of virtualization technologies (VMware, Parallels)
- Water cooling to reduce noise level



Applications High Availability and Disaster Recovery with NEC ExpressCluster

NEC's award-winning ExpressCluster is an integrated high availability and disaster recovery software providing 99.99% availability with fast recovery and continuous protection of business critical applications and data. ExpressCluster enables easy to deploy and cost effective continuity solutions for any application and provides enhanced failure detection at user level for industry standard database and email systems such as MS SQL, Oracle DB, IBM DB2, MySQL, MS Exchange, Sendmail, etc.

Moreover, ExpressCluster is the only solution on the market being able to secure virtualized environments at all levels (Hypervisor level to secure the virtual machine and application level to secure the application inside the VM). ExpressCluster provides a single administration console to manage physical and virtual environments (Windows, Linux, VMware, Citrix, HyperV).



NEC storage solutions for continuous protection

NEC offers a wide range of storage solutions — from the latest enterprise M-Series SAN, to datacenter-class enterprise systems and the next-generation grid storage system — all designed to respond to the storage challenges that businesses face today.

Built on NEC's proven technologies, our storage products enable businesses to manage data more effectively. Whether it is the latest SAN or the revolutionary grid storage system, our storage solutions deliver higher data resiliency, superior scalability, simplified operations, and a lower TCO through NEC's innovative technologies. The NEC D-Series range and the new M-Series range consist of several models of storage arrays : The D3-10, D4-30, D8-30XX, M100 and MX00.

D8 Series adopts building block architecture for the first time in the industry while having the functions and performance of high-end class storage. Non-disruptive upgrade from small-scale to large-scale is available. The M-Series range benefits from unique dynamic pool functions which enables on «the spot» capacity expansion.



Services - 24/7

Based on NEC's extensive customer knowledge, we have designed a full range of complementary services and solutions for all of IT needs. NEC ensures thorough pre and post sales support : -Comprehensive consulting services- Custom factory configuration and remote monitoring.

- On-site installation
- Dedicated customer support centres
- Customised levels of on-site support



DATACENTER

Technologies such as SaaS, DaaS, IaaS are becoming increasingly more appealing to CIOs when considering how to get the best performance and value for money from their IT investments. Existing service providers and traditional VARs need to prepare for the next generation of IT services. NEC has focused its strategy to address the challenges faced by Datacenters by providing Dynamic Datacenter solutions with consistent hardware and software to significantly improve the power efficiency and reduce the customer OPEX. NEC has also developed a consistent NEC Partner Ecosystem; a set of turnkey solutions that enables companies to implement private cloud services and existing service providers and traditional VARs to provide these high value public cloud services to their customers.

Datacenter platforms

ECO CENTER

Eco center is the perfect solution for virtualization farms mixing performance and energy saving. Design helps companies save:

- 50% of energy compared to a standard server rack
- 50% of space in order to reduce datacenter foot print
- 50% of weight in order to ease moves mobility and reduce overall weight

The in rack datacenter concept optimizes the vertical integration of servers, storage and networking. In addition to this, NEC has developed a complete solution including applications and network switches in order to provide an evolutionary cloud platform - ideal for hosting providers entering the SaaS market.

With the integration of the NEC SigmaSystemCenter the ECOcenter optimizes the power efficiency by effectively managing all of the physical and virtual servers.

The NEC ECOcenter is the perfect example of NEC Innovation which enables organizations to invest in technology in line with their corporate responsibility and eco policies.

- Low Energy consumption and less material used
- Longer Life Cycle of solution and components
- Management time reduced



iModel

The imodel is the ideal solution for hosters and web farms especially those running Linux environments. Design is aligned with the same philosophy as Eco Center to help companies to:

- Save 50% of energy compared to a standard racks
- Install 28 servers into a 42U rack limited at 6Kva
- 30% of weight reduction to ease deployments



In addition to reduced component energy consumption and Silver PSU this model offers useful features like:

- Power capping and dynamical management of CPUs and Fans
- Remote administration and updates
- Remote and automatic survey of HDD (whatever the OS)
- Remote Power Consumption reporting
- Wide support of Linux versions (RedHat...Debian...Fedora and more)

This server is the second generation of imodel and has been designed for and with Japanese Hosters and ASP inputs. This server answer Datacenter requirements for:

- Energy Saving
- Manageability
- Reliability
- Flexibility

Datacenter NEC Partner Ecosystem

NEC has developed an ecosystem, of partners and specialists in order to support large companies or medium size Datacenters who :

- Would face constraints while transitioning from standard infrastructure to internal cloud or from ASP to SaaS
- Would like to deliver a complete and comprehensive set of Cloud Computing services

NEC DC3e approach (DataCenter Ecologic, Economic, Evolving)

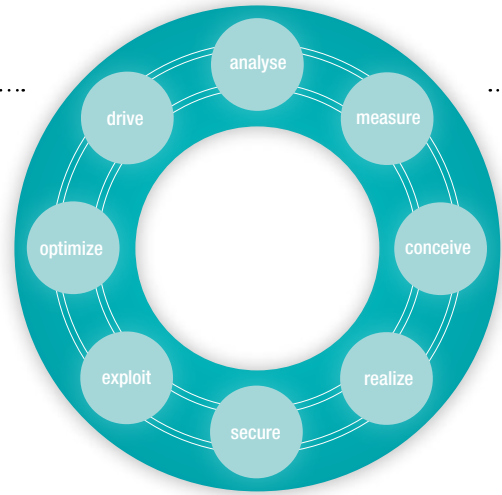
The main competencies of DC3e are:

Creation or optimization of physical buildings

- Security, cooling, electricity, cabling. including new Eco solutions and legal obligations, but also modular cooling systems.

IT strategy or evolution

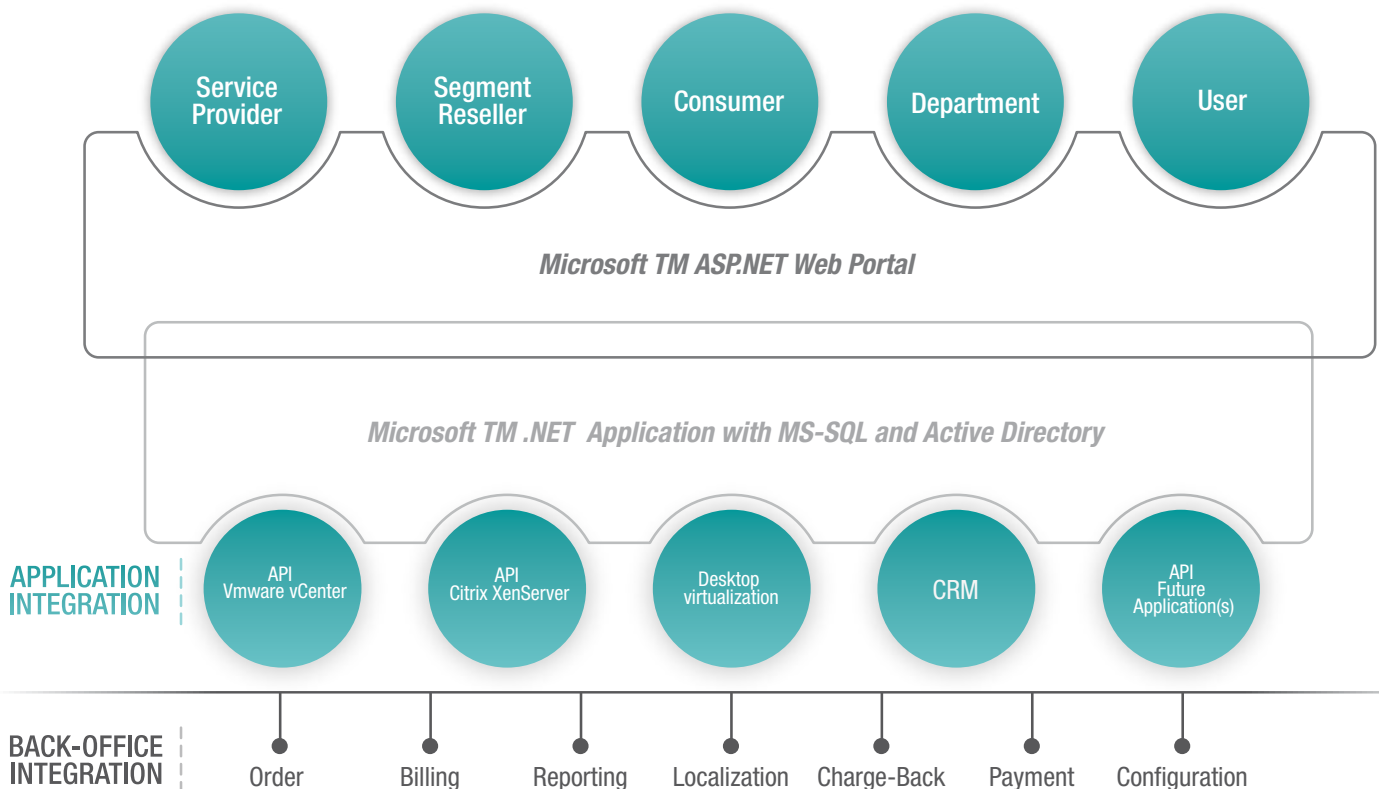
- Transversal process analysis, full architecture optimization, urbanization, migrations, training, maintenance.



NEC SaaS ReadyToGo approach:

Nec provides tools for companies who want to set up Cloud Computing services

- Automatic Billing, ordering, provisioning
- Invoicing management (internal or external)
- Ready to sell DaaS, IaaS, SaaS solutions
- Thiers 1,2,3 model support
- High available and energy efficiency infrastructure
- Datacenter cooling optimization
- Mobile & Dynamic Datacenter





DataCenter Management

SigmaSystemCenter:

Integrated Virtualization Platform Management Software. When a company starts to get a large estate of servers, applications, OS and, virtual environments the optimization of the system becomes increasingly complex. SigmaSystemCenter has been designed to optimize the workload of the servers and save energy by switching off the non used servers.

- Mixed Physical & Virtual Environment Management
- Autonomous Operations
- Hardware Monitoring
- Automatic provisioning
- Integrated VM Management
- Operability and integrity

SSC is delivered in a single package, easy to install and use and offers the best features and options.

SCALABLE SERVER *Express5800/A1080*

The Scalable server is the perfect solution for companies who want to install or migrate their transactional or decision-making databases onto Windows or Linux but want to keep a high level of reliability and performance.

Scalability and Performance

Its modular design and internal I/O and HDD capacity permit to install demanding databases without additional SAN or NAS. It also allows to start with one module to be upgraded step by step according to the database growth.

The conception of the chipset made by NEC offers the best performance score at TPCE and supports different strategies like Hardware partitioning or memory and CPU fusioning for demanding ERP.



Business Security

If a huge database requires power, it also requires a high level of security. That's why NEC has designed the scalable server with RAS features and architecture in order to limit and shorten any downtimes.

- All components (except motherboard and CPU) are hot swap
- A software engine remotely monitors the system and repairs small bugs
- In case of CPU failure the systems degrade and reboot. Competitive systems stop fully
- In case of maintenance the I/O and motherboard are easily swapped
- SAS controller is independent from motherboard and can be replaced quickly
- All raid configurations are supported

Finally the scalable server offer the best performance and security of the market up to 64 cores and 1TB memory in order to support a wide range of SQL data bases and ERP.

UNIFIED COMMUNICATIONS

Increase employee productivity and engagement with new generation tools

The visionary approach of NEC takes its full dimension when it can offer end to end solutions. In the area of unified communications, NEC is able to finally make unified communications accessible to SMBs and large accounts with an unmatched level of availability and provide complete and comprehensive telephony systems.

Thanks to its Fault Tolerant technology and Flexpower, NEC offers a unique and simple solution for Microsoft Exchange and Office Communication Server deployments (only one single standard license is required).

This solution provides the following key benefits:

- Optimized Acquisition cost
- Scalability (up to 2500 users)
- Simplicity
- Unmatched High availability 99.999%

SIMPLE & NON STOP

NEC UNIFIED COMMUNICATIONS

MOCS

Exchange

NEC Fault Tolerant 320Fd v+ Flexpower
Intel Xeon QuadCore Windows 2003 Enterprise 64 bits



All in One **NON STOP**

NEC

- 1 single platform required
- Business continuity
No failover for critical system roles
- License optimization costs
- High scalability



General Purpose Server

- Performance and green efficiency
- Strong reliability
- Unmatched storage scalability

Virtualization

- OPEX reduction
- Server consolidation
- Multimedia user experience with Desktop virtualization

Business Continuity

- Non Stop business
- High performance
- Disaster Recovery Plan
- 1 single solution for physical and virtual environments

Datacenter

- Energy Saving
- Manageability (Physical and virtual systems)
- Reliability
- Space saving

DataCenter Management

- Mixed Physical & Virtual Environment Management
- Autonomous Operations
- Hardware Monitoring
- Provisioning
- Integrated VM Management

Unified Communications

- Optimized Acquisition cost
- Simplicity
- Scalability (up to 2500 users)
- Unmatched High availability 99.999%

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