

White paper

FUJITSU Integrated System PRIMEFLEX for Egenera PAN



PRIMEFLEX for Egenera PAN is a pre-defined, validated and pre-tested reference architecture combining servers, storage, network connectivity as well as infrastructure and optional cloud management software. The infrastructure solution automates essential IT management tasks, reduces the time required to implement new IT projects and at the same time improves service level agreements through embedded high availability and disaster recovery mechanisms for both physical and virtual workloads.

Content

Datcenter and CIO challenges	2
FUJITSU Integrated System PRIMEFLEX	2
FUJITSU Integrated System PRIMEFLEX for Egenera PAN	2
PRIMEFLEX for Egenera PAN - Reference Architecture	4
Server Infrastructure	4
PRIMERGY Blade Servers	4
PRIMERGY Rack Servers	5
PRIMERGY Scale-out Servers	5
Storage Infrastructure	5
FUJITSU Storage ETERNUS DX Series	5
NetApp FAS8000 Series	6
Networking Concept	7
PAN Manager Software	8
Resource Discovery & Server Definition	8
Virtual Machine Management	10
Secure Multi-tenancy	11
High Availability	11
Flexible Disaster Recovery	12
Domain Management	13
Conclusion	14



Datacenter and CIO challenges

Lots of datacenters had issues with power, space and cooling capacities, assets and uptime that negatively impact business operations. As consequence these IT organizations have delays in application rollouts, a disrupted ability to provide services to customers and are forced to spend unplanned budget for operational expenses. Caused due Big Data, analytics workloads as well as the Internet of Things and the associated massive data growth, datacenters have a rising demand on performance and scalability. For this reason, a majority are turning to server virtualization and private/hybrid cloud infrastructures to meet service levels. Along with that demand comes the burden of protecting data since in the meantime almost all business-and mission-critical processes depend on IT. The failure of important systems in the datacenter can directly impair the business activity of a company and result in lost sales.

Surveys also consistently confirm that users complain of the slow implementation of additional computing and storage capacities in response to growing needs, coupled with functionality issues and higher-than-anticipated costs. For many data centers, IT infrastructure and operations have reached a breaking point; incremental improvements no longer work.

For this reason IT departments spend a great deal of time and money on the design, purchase, configuration, integration, optimization and protection of IT infrastructures. Rather than “do-it-yourself” assembled from components provided by multiple vendors, organizations around the globe are rapidly adopting converged infrastructure models that delivers pooled resources in an integrated platform; a platform that combines compute, network, storage, virtualization and management capabilities.

FUJITSU Integrated System PRIMEFLEX

With PRIMEFLEX, Fujitsu is empowering organizations to accelerate their business expansion, eliminate complexity and reduce risk by enabling the faster deployment of more powerful data center technologies. FUJITSU Integrated System PRIMEFLEX is a pre-defined, pre-integrated and pre-tested combination of servers, storage, network connectivity and software. While management software is mandatory, depending on the use case, software for virtualization, automation and orchestration, as well as databases and applications may be optionally included.

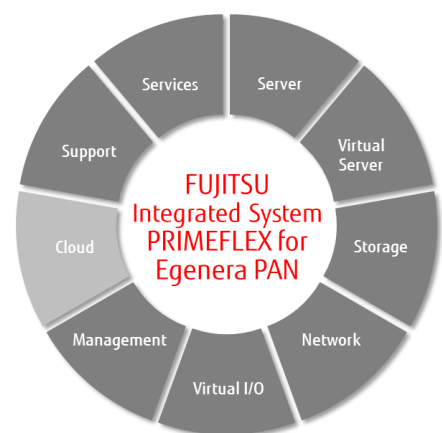
PRIMEFLEX encompasses factory-installed solutions which are ready-to-run and reference architectures which can be easily adjusted to customer-specific requirements. Along with its reference architectures, Fujitsu makes detailed configuration and installation descriptions available as a standard. Optional deployment and integration services ensure a smooth integration into the on-site environment. To ensure simplified operation and maintenance of PRIMEFLEX solutions, Fujitsu provides support on solution level, and further data center services including managed services and hosting.

FUJITSU Integrated System PRIMEFLEX for Egenera PAN

PRIMEFLEX for Egenera PAN offers such an integrated solution and merges all required hardware resources, virtualization and management capabilities with operating systems and virtualized applications throughout the enterprise. Thus, individual products and software components are melting together into a solid unit. Additionally included failover and disaster recovery capabilities further improve service levels with a single automated recovery plan for physical and virtual virtual servers.

The Egenera PAN Manager software integrates server, network, and storage resources, and provides the management capabilities necessary to deploy applications in minutes. The integrated solution automatically and reliably keeps those applications running, even in the face of spikes in demand, system failure, or or site disaster. The result is a datacenter infrastructure that responds to changing demands while delivering the highest level of business resilience.

PRIMEFLEX for Egenera PAN eliminates the requirement to maintain server information on local storage devices. Instead, operating system images, network names, and addresses are stored in an XML profile, and then invoked when the server is booted.



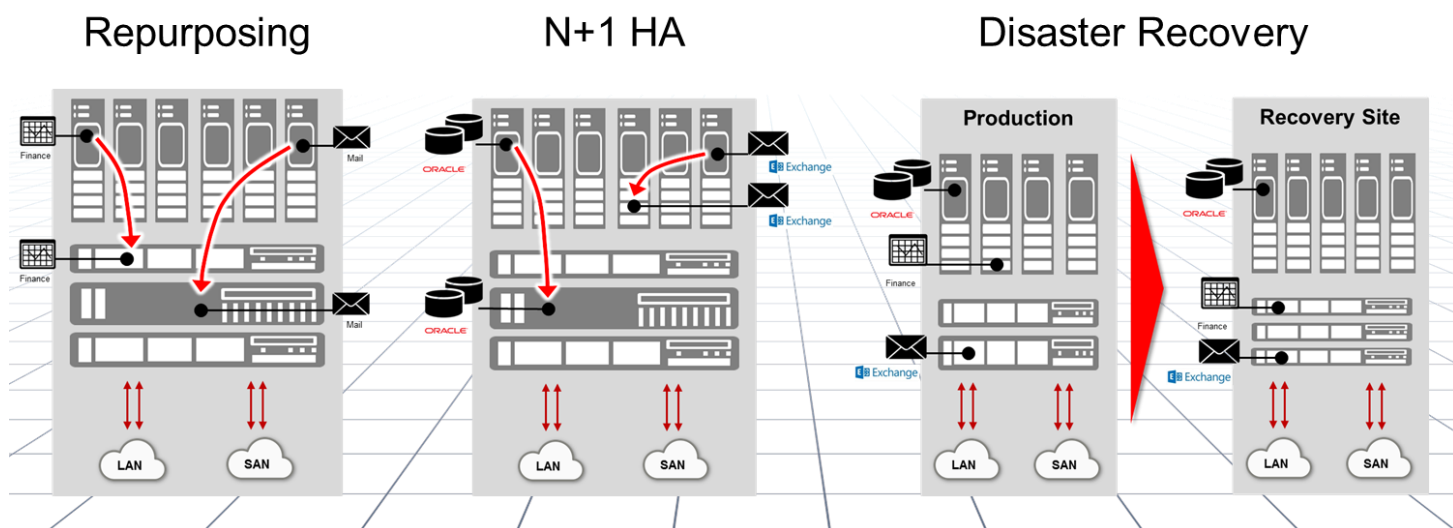
I/O virtualization capabilities are used to create logical paths between servers and their storage and network resources. For this reason, there is no need to cable, configure, and manage an HBA and NIC for each server. Servers can be rapidly deployed and provisioned, and applications can be moved quickly to alternate servers without investing the time and resources to manually keep hardware and software in synch. In this way it is possible that compute resources can be used to satisfy an application specific peak workload at a specific time, and at a different point of time, the same resources could be used for a different purpose as the application will be moved to a another server.

Usually an application is bound to specific properties such as host name, IP address or MAC address. In many cases also the application licensing is depending on these properties, so that the license will be invalidated in case some of these attributes are being changed. With PRIMEFLEX for Egenera PAN the application is not aware of that it will be moved to another resource since all interfaces, hardware attributes (e.g. MAC address, WWN) are still working and the licenses are still valid.

To be able to drive datacenter agility and at the same time maximize uptime, the PAN-based solution avoids vendor lock-in, by supporting heterogeneous physical environments, such as selected multi-vendor configuration and a mixed configuration of PRIMERGY blade-, rack- as well as scale-out servers. In addition the integrated system provides the freedom of choice to utilize multiple virtualization technologies, such as PAN Manager's included Virtual Machine Instances (VMI), VMWare vSphere and Microsoft Hyper-V. The Virtual Machine Instances will be provided at no extra license costs and without having an additional management layer - hypervisors will be automatically deployed.

PRIMEFLEX for Egenera PAN supports a robust security model by creating role-based administration and a secure network environment. The PAN is broken into separate Logical PANs (LPANs) that represent a unique collection of physical and virtual resources that are allocated to a set of applications. These computing resources are controlled through role-based administration, providing security between LPAN assignments and server administration. This secure networking domain supports a managed-services model for multiple departments or customers in a single PAN. The combination of security domains and defined user roles allows administrators to both dynamically allocate resources and restrict access to unauthorized users.

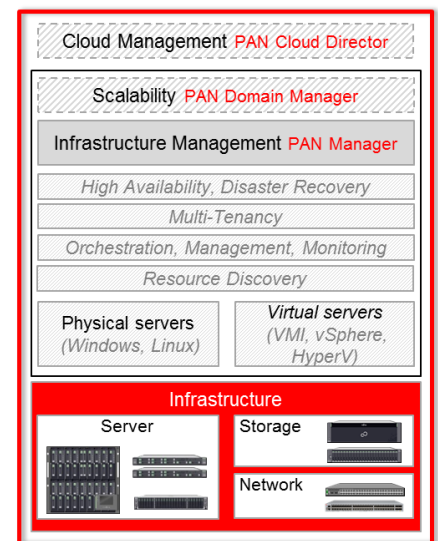
The stateless server environment is the foundation for the embedded high availability and disaster recovery features. The N+1 availability feature lets you allocate one server as backup to multiple production servers. This feature automatically moves applications to alternate physical or virtual servers, either as a result of component failure or the need for more CPU and memory. In the case of a disaster recovery operation, the entire datacenter configuration (or selected portions) will be migrated to a secondary location. Each physical and virtual server configuration will be moved in its entirety, including operating system, hypervisors, and applications. The PAN solution works in combination with supported Fujitsu or 3rd party storage systems to simplify and automate Disaster Recovery solutions for complex environments. In addition, these backup systems can be productively used for non-critical applications or development until such time as recovery is required.



PRIMEFLEX for Egenera PAN - Reference Architecture

FUJITSU Integrated System PRIMEFLEX for Egenera PAN offers a tested, validated and released reference architectures for medium-sized enterprises as well as larger companies that integrates all components to a tailor-made solution for individual usage scenarios, all supported by Fujitsu as a single point of contact (SPOC) for the customer. It enables enterprises to quickly create and benefit from automated, scalable, reliable and self-service infrastructures and transforms static IT environments into agile and reliable IT services. As a result, IT efficiency is radically improved and businesses operate with much greater agility.

- Tested, validated and released IT infrastructure based on customer projects and long-term experiences with ongoing overall solution release processes
- Open platform choice: Ability to use PRIMERGY rack-, blade and scale-out servers providing the opportunity to use preferred platform. Furthermore, well-known products from leading manufacturers such as Brocade, Cisco, Emulex and NetApp can be integrated to protect existing investments and skill sets.
- On-site installation and datacenter integration supported by support matrices, configuration and installation guides
- Maintenance support offerings as well as professional service offerings incl. customer trainings
- Flexibility and choice to easily adapt configuration
- Scalable in capacity, performance and functionality



Server Infrastructure

At a time when the importance of applications and data in supporting your business has never been higher, you need computing power that is fit-for-purpose now and into the future. To meet customer specific requirements in terms of productivity, efficiency and innovation, this means having computing capabilities that align with the service levels demanded by your business lines. FUJITSU PRIMERGY servers provide your company with the most powerful and flexible data center solutions on the market for companies of all sizes, across all industries and for any type of workload. PRIMERGY servers have shaped IT, at every stage, and set new standards in quality, efficiency and agility. By extending PAN Manager from the proven PRIMERGY blade systems (BX900 S2) to PRIMERGY rack (RX200 S8) and scale-out servers (CX400 M1 with CX2550 M1 nodes), customers have the opportunity to use their preferred platform to build an integrated system.

PRIMERGY Blade Servers

FUJITSU Server PRIMERGY BX blade systems are the perfect platform to build a converged infrastructure designed to reduce IT costs, time and efforts. PRIMERGY Blade Servers utilizes a modular architecture and contain in addition to the compute power, all required infrastructure and network components as well as management modules that helps companies to simplify their infrastructure, achieve significant cost reductions and increase flexibility.

The PRIMERGY BX900 S2 has space for up to 18 server and storage blades in a 10U chassis. Thus it's the leader in its class for density in a compact form factor. Fujitsu's Cool-safe™ cooling concept, combined with power supply units certified with 80Plus Platinum and holistic power management, reduce your costs and ensures a more efficient use of energy and cooling capacity. Furthermore the PRIMERGY BX900 S2 provides future-proof connectivity enhancements. Server blades, equipped with CPUs from the latest Intel® Xeon® processor E5-2400v2 / E5-2600v3 product family, offers scalable performance to meet highest requirements of extensive virtualization/ consolidation scenarios for business critical applications on the one hand, and demanding high performance computing applications on the other hand. Packed with advanced features, up to 24 high-speed DIMM slots and flexible 10Gbit/s Universal Converged Network Adapter (UCNA) onboard, the new PRIMERGY server blades provides the highest memory modules density in a dual-socket blade and allows doing more with a two processor server than ever before.



PRIMERGY Rack Servers

FUJITSU Server PRIMERGY RX rack systems are versatile rack-optimized servers providing best-in-class performance and energy efficiency, and thus form the “standard” in each datacenter. PRIMERGY RX servers deliver approximately 20 years of development and production know-how resulting in extremely low failure rates below market average, and leading to continuous operations and outstanding hardware availability.

The Fujitsu Server PRIMERGY RX200 S8 is a rack server that provides high performance and energy efficiency in 1U space saving housing. Thus, the PRIMERGY RX200 S8 is ideal for virtualization and cloud, small databases as well as for high performance computing thanks to the top performance of the Intel® Xeon® E5 product family. Moreover, the RX200 S8 delivers a great expandability, by supporting up to 1536 GB of memory, eight hard disk drives and cost-saving Modular LAN options to ensure future requirements are met and budgets are saved. Thanks to the highly efficient power supply units with an efficiency rate of 96 % and the new power management this will result in lower operational costs.



PRIMERGY Scale-out Servers

FUJITSU Server PRIMERGY CX scale-out systems are built for cloud computing scenarios, high performance computing, service providers and large server farms. They focus on providing large datacenters with massive scale-out x86 server power while at the same time delivering best economics for server density, energy consumption, heat optimization and lower overall operational costs.

FUJITSU Server PRIMERGY CX400 M1 helps to meet the immense challenges companies as well as research and development institutions are facing. The scale-out system can be perfectly adapted for a wide range of applications thanks to its high degree of modularity. When requirements change, additional server nodes, co-processor cards or hard disks can just be added.

The PRIMERGY CX2550 M1 is a compact server node for the PRIMERGY CX400 M1 enabling highest computing density. It is ideal for cloud, cluster and high performance computing scenarios as well as in dedicated Big Data environments. Combined in a PRIMERGY CX400 M1 multi-node system the servers provide an aggregated scale-out performance of a total of 8 CPUs of the latest Intel® Xeon® processor E5-2600 v3 product family, 64 DDR4 memory DIMMs and up to 24 storage drives in a condensed 2U rack enclosure. With huge performance potential, high energy efficiency and at the same time attractive investment costs the PRIMERGY CX2550 M1 provides great versatility to match even ambitious workloads.



Storage Infrastructure

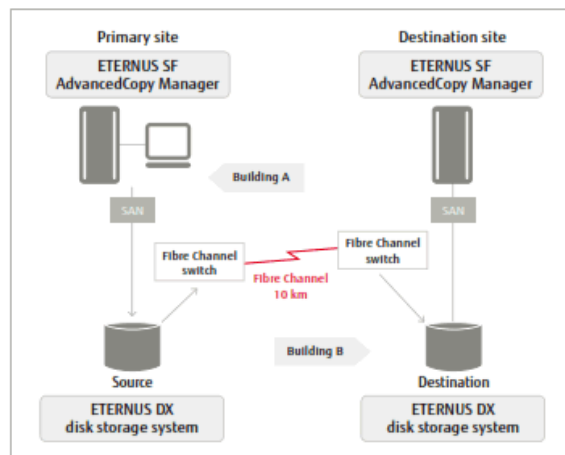
FUJITSU Integrated System PRIMEFLEX for Egenera PAN supports all storage devices certified, qualified, supported by Fujitsu for the corresponding PRIMERGY server used as pNode (e.g. Fujitsu ETERNUS DX and NetApp FAS Disk Storage Systems)

FUJITSU Storage ETERNUS DX Series

Fujitsu ETERNUS DX is a system family based on a consistent design, from the entry-level models to scalable entry-level and midrange systems, and culminating in the high-end storage systems. The ETERNUS DX product family is unique because it addresses the storage demands of all enterprises – from small and medium-sized businesses to large corporations. The entry-level system offers the performance and functionality normally expected of much larger systems, plus remarkable scalability with a capacity of up to 96 terabytes. All key components are configured redundantly and can be replaced even when the system is in operation. This family concept provides storage administrators with very efficient options for coping with growing demands, consolidating storage environments and rationalizing operations and maintenance processes: Thanks to their excellent scalability, ETERNUS DX systems can be enhanced and upgraded from one model level to the next quite easily.

Moreover, various types of hard disks (SAS, Nearline SAS, SSD) can be mixed in one system in order to balance performance and costs while optimally utilizing data center space. Interoperability serves as the basis for flexible centralized and decentralized operation concepts – because data can be replicated and copied between various models.

When it comes to mission-critical data which must be available around the clock, a disaster-proof configuration is an absolute must. But such configurations are expensive and complex – many business enterprises do not feel comfortable managing these environments and simply avoid them. This “strategy” is extremely risky because a worst-case scenario can result in staggering outage costs, severe damage to the company image and even legal proceedings along with liability claims. To prevent this from happening, the ETERNUS DX series offers a number of functions that safeguard businesses against disasters without complexity or high costs. REC (Remote Equivalent Copy) provides a server-less remote mirroring function, which ensures fast recovery if the primary disk storage system is not operational. By using Fibre Channel interfaces, Remote Advanced Copy can provide low-cost remote site support between a primary storage device and a secondary device. Extended Remote Advanced Copy uses a combination of a Fibre Channel switch and WAN converter to cover very long distances over WAN. Replicated data can be located at a remote site hundreds of miles away from the primary site. This provides high security for the protection of critical data from any kind of disaster.



NetApp FAS8000 Series

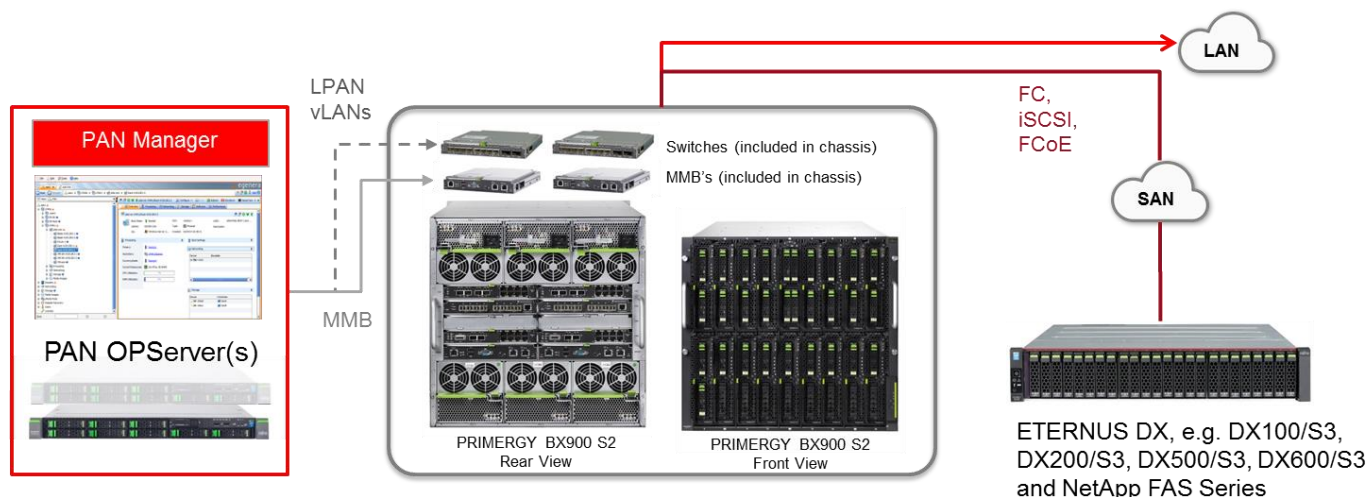
NetApp FAS8000 series storage systems combine a unified, scale-out architecture with leading data-management capabilities. They are designed to adapt faster to changing business needs while delivering on core IT requirements for uptime, scalability, and cost-efficiency.

For geographically dispersed businesses with remote locations, the NetApp SnapMirror® software may be used as an additional tool to replicate data across your global network simply and reliably. NetApp SnapMirror software replicates data at high speeds over WAN connections. PAN Manager enhances these storage solutions to simplify and automate Disaster Recovery solutions for complex environments. PAN Manager provides a single interface to deliver this. PAN Manager’s Storage Management Plug-In provides vendor independent integration into storage solutions via SMI-S. This reduces complexity associated with the provisioning and management of storage resources. PRIMEFLEX for Egenera PAN simplifies the provisioning of a disk, so it becomes a two-click process. Simply select the storage array from the presented list and associate with the server profile. This is accomplished all under a secure platform using a multi-tenant, role based security model.

Networking Concept

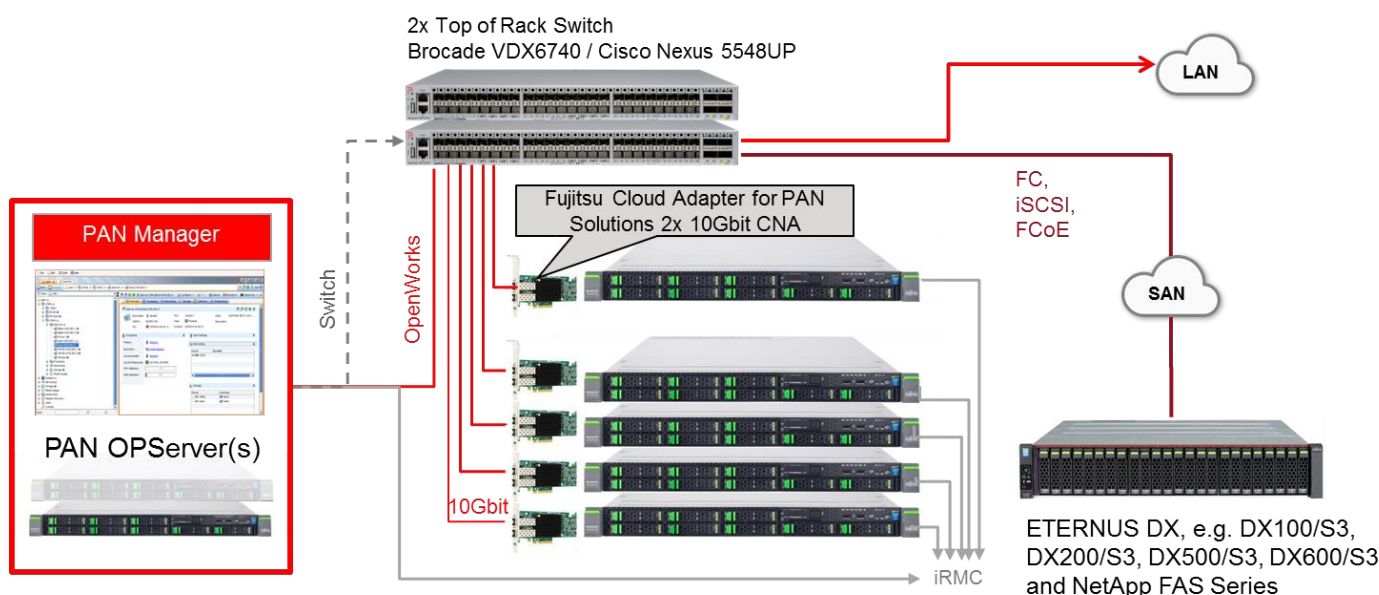
Within the network concept, two different approaches are used: The reference architecture that makes use of the PRIMERGY blade servers, the Connection Blades (PRIMERGY BX Ethernet Switch 10/40Gbit/s 18/8+2) that are installed inside the blade chassis is used. For the reference architecture that incorporate PRIMERGY rack- or scale-out systems, ToR switches from Brocade (Brocade VDX 6740) or Cisco (Cisco Nexus 5548UP) are used.

The PRIMERGY BX Ethernet 18/8+2 switch is an integrated 10 Gbit/s Ethernet connection blade with DCB mode for use in the PRIMERGY BX900 blade server chassis and offers 18 x 1/10 Gbit/s Ethernet down-link port to the midplane for server blade connections. The module comes with 8 x 1/10 Gbit/s Ethernet uplink port and supports OSI Layer 2 functions.



Brocade VDX 6740 Switches are designed to connect data centers with multiple options to meet individual design requirements. This flexible design provides investment protection, giving organizations a single switch that can support varying data center requirements by providing up to 64 1/10 GbE SFP+ ports. Ports on Demand (PoD) enables organizations to activate 24 to 64 ports. The switches offer the option to separate the 40 GbE uplinks into four 10 GbE uplinks via break-out cables.

Cisco Nexus 5548UP is a high-density, rack-unit, 1/10 Gigabit Ethernet switch with 32 fixed Unified Ports on base chassis and one expansion slot totaling 48 ports. The slot can support any of the three modules: Unified Ports, 1/2/4/8 native Fibre Channel, and Ethernet or FCoE with a Throughput of up to 960 Gbps.



PAN Manager Software

The PAN Manager enables IT to provision, manage and protect an IT infrastructure. The software provides powerful management and policy-based automation so that IT can offload routine management tasks, freeing the IT staff and improving the service levels delivered back to the business.

The PAN Manager simplifies datacenter infrastructure and management by creating flexible pools of compute, I/O, networking and storage resources. This makes it simple for administrators to create and deploy exactly the resources needed to support even the most complex, multi-tier applications. Whether that is a full physical server to host a critical database or a virtual server to run a Web application, PAN Manager's VMI technology gives you one click provisioning of both physical and virtual servers – without the need to separately license, pay for and manage a hypervisor. From the PAN Manager GUI, individual resources from these pools can be assigned a profile or "personality". Each profile contains the application configuration and service level requirements. Once that profile has been activated, PAN Manager will actively monitor and automatically manage the infrastructure in order to meet the capacity, availability and response time requirements set by the business.

The result is a datacenter infrastructure that responds to changing demands while delivering the highest level of business resilience.

Resource Discovery & Server Definition

The PAN-based infrastructure solution automatically detects and discovers individual components and transforms these individual parts in flexible, stateless processor, network and memory resources. To create a server definition (pServer), an administrator defines processing capacity for an application, and then associates that capacity with storage and network resources.

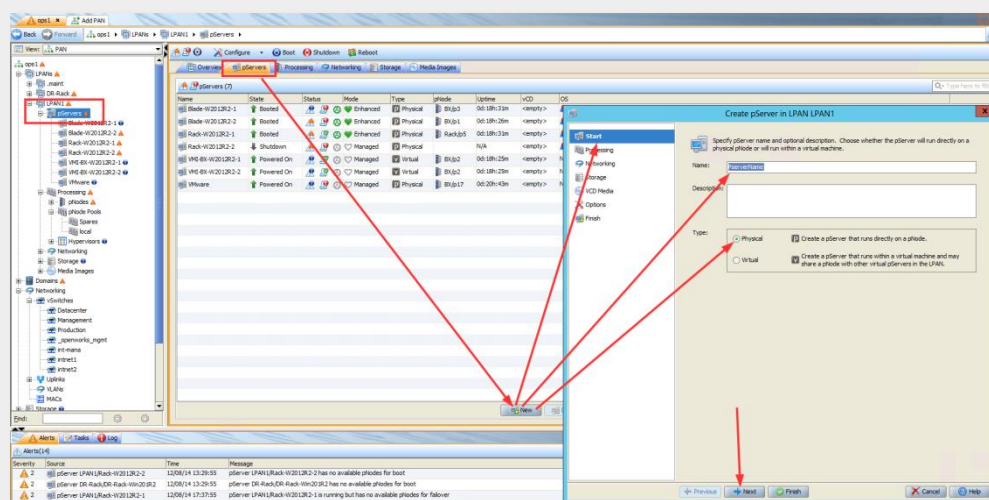
Administrators build server definitions entirely through software that provide functionality traditionally housed in hardware. This architecture eliminates the physical scaling and provisioning restraints of networking individual servers enabling administrators to create, modify and remove I/O communication channels in response to changing business conditions.

This server definition is a portable XML specification of each application service within the PAN. PAN Manager uses the specifications to provision servers and move applications quickly from one server to another, whether physical or virtual. The definition includes the operating system and application images as well as bindings to the application's storage and network resources. To create a pServer, an administrator defines processing capacity for an application, and then associates that capacity with storage and network resources.

With PAN Manager, you can rapidly deploy server definitions on any physical or virtual server. Its wire-once capability enables IT staff to allocate and repurpose servers from the management console, without requiring manual configuration:

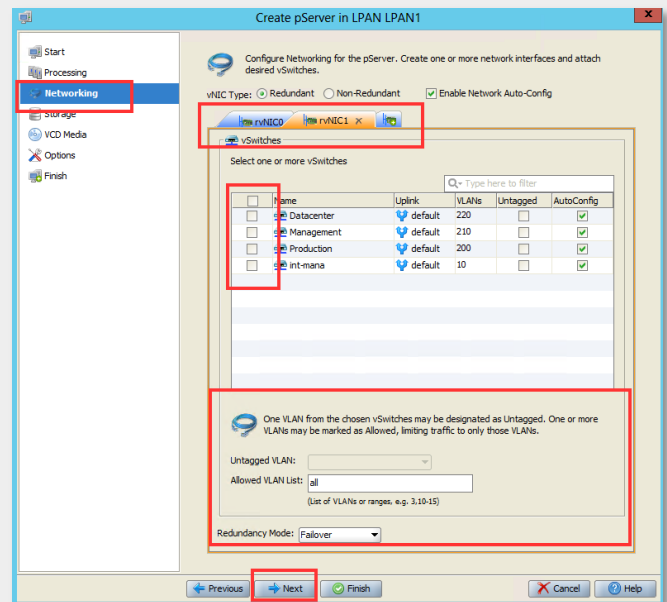
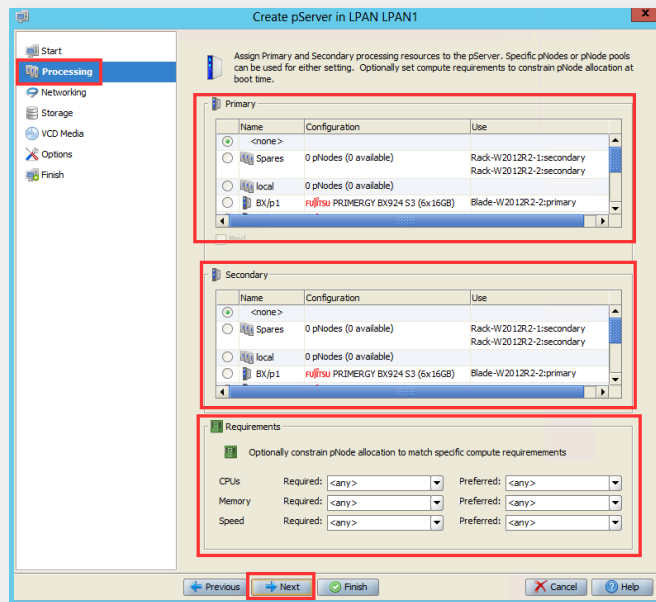
Creation of a pServer (1/4)

- Creation of a pServer is wizard-based.
- Through a user-friendly menu the administrator can easily create a server definition within a few minutes.
- Both types of pServers (physical and virtual) are supported.



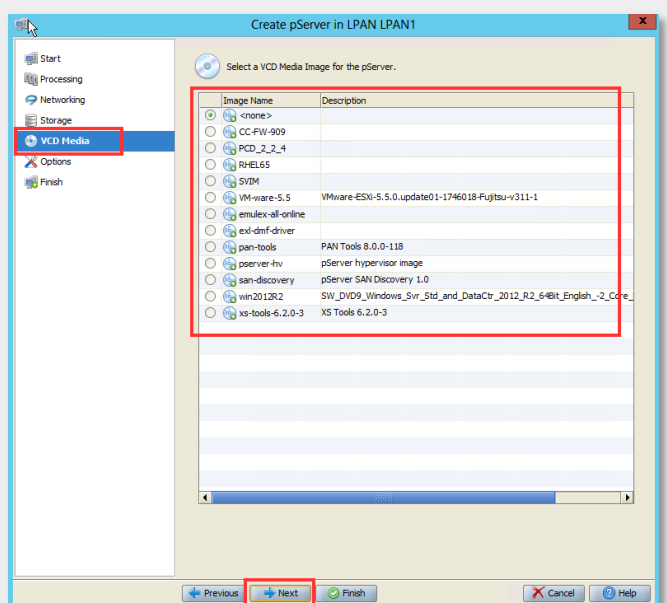
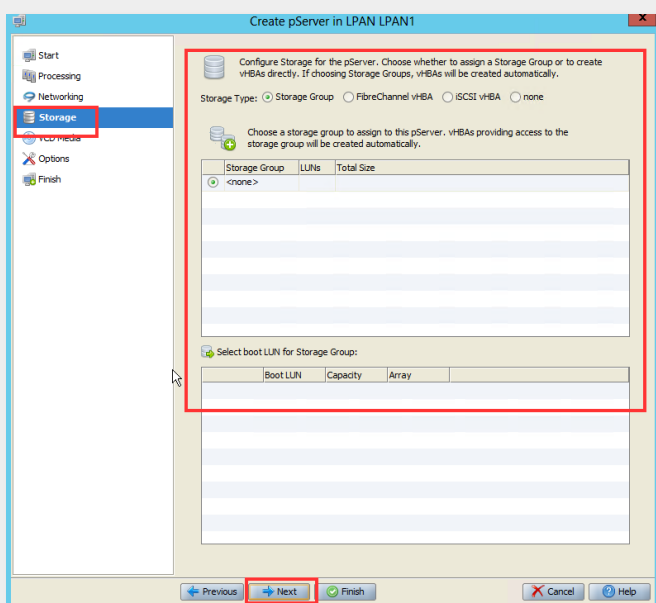
Creation of a pServer (2/4)

- In the next step the necessary processing resources (pNodes) are assigned.
- Also additional secondary (stand-by) resources can be configured usable for the high availability capabilities
- In the networking section an administrator can define all the networking resources for this dedicated pServer, including server NIC redundancy.
- This setup has implications on the domain switch configuration and for teaming, bonding e.g. for Windows or Linux.



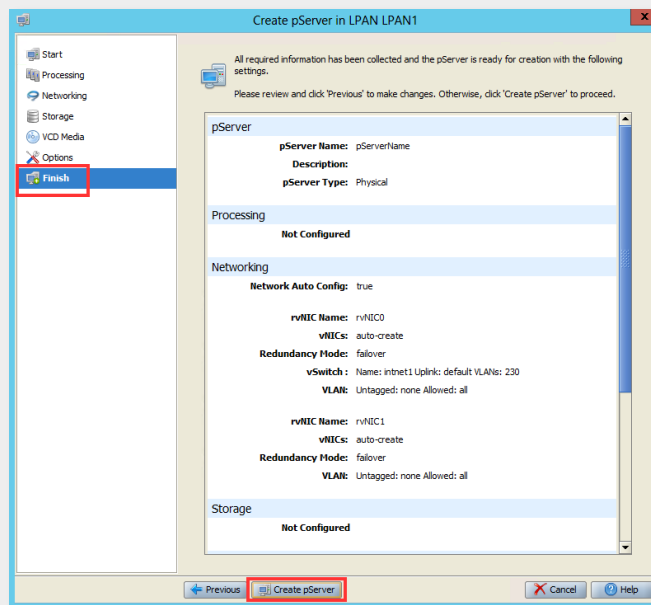
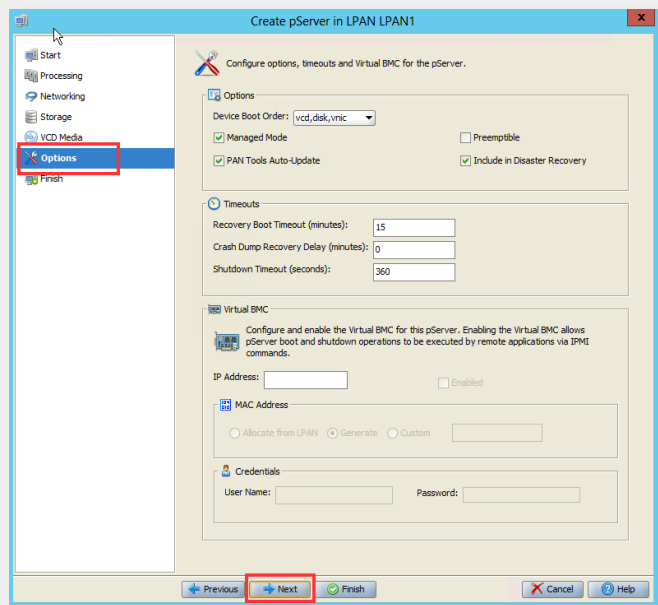
Creation of a pServer (3/4)

- In the storage section a user is able to assign the LUNs that should be connected to that pServer.
- A virtual CD can also be configured for the pServer.
- This can be the installation disk of the operating system and can be easily changed at a later point of time.



Creation of a pServer (4/4)

- In this section a user can define the boot order and/or the virtual BMC.
- Prior to the final creation of the previously configured pServer all parameters and settings are displayed on a single page.
- Press "Create pServer" for creating the server definition.

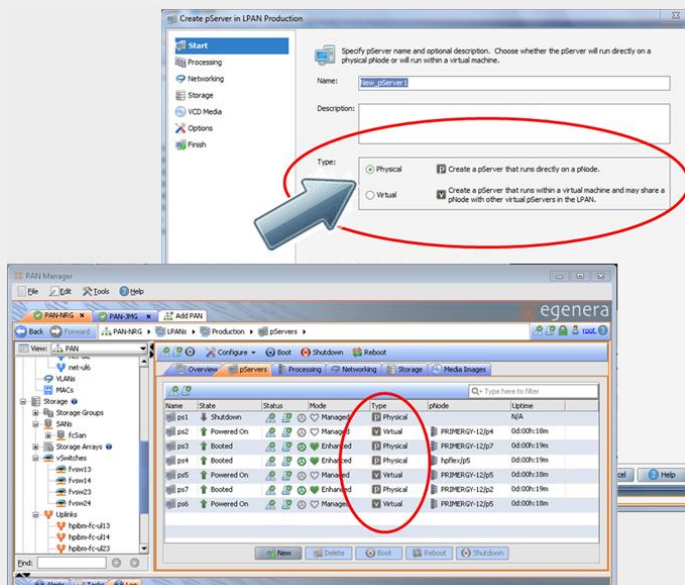


Virtual Machine Management

PAN Manager supports industry-standard server virtualization products from VMware and Microsoft, allowing managing both physical and virtual computing resources with one set of tools and processes. The Virtual Machine Instance (VMI) capability provides the simplest way and most cost-effective way to provision and manage both virtual and physical servers, without the need to install hypervisors or third party management tools for virtual machines. PAN Manager's deep integration with open source XenServer lets users simply choose to allocate a physical or virtual server.

Virtual Machine Management

- When creating the server profile within the PAN Manager server creation wizard select either "physical" or "virtual".
- In case of "virtual", the hypervisor will be automatically deployed.



Secure Multi-tenancy

The PAN architecture enables administrators to segregate processing, networking, storage, DVD and switch resources into secure and separate “containers” called LPANs. An LPAN includes pServers and virtualized network and SAN components that remain logically separated from the other resources of the PAN. Most LPAN resources are exclusive to an LPAN. However some resources, such as DVDs, vSwitches and failover processing blades, may be shared by pServers in multiple LPANs. This optional capability gives administrators access to system-wide resources and allows pServers to participate in networks that span LPANs.

The domains also include users and access permissions, and define the administrative topology of the PAN. Together, the security domains and administrative roles allow users to allocate private and secure resources, and restrict access. Role-based access control secures the domains, which include the PAN and the LPANs. Through PAN management software, predefined administrative roles can be assigned for each domain. The user’s role is chosen based on the type of access needed and to what domain.

High Availability

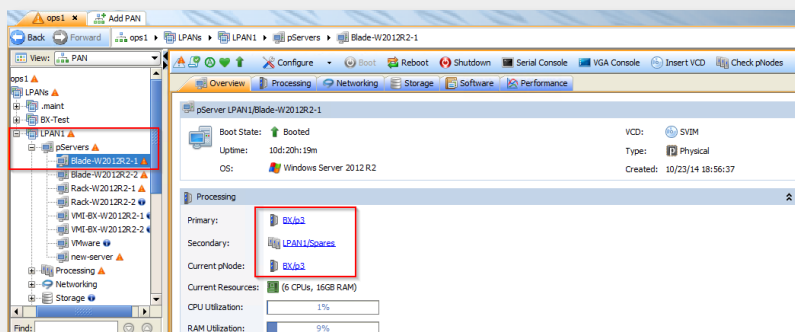
The PAN management software provides high availability support to help minimize downtime for application services.

The software’s failover framework automatically detects pServer failure, detects application failure, selects a backup server node based on the failover policy for the application, restarts the application, and moves connections to the new system.

The PAN provides true N+1 failover, where a single server can act as a backup for any other node in the system. When a pServer fails, PAN management software automatically remaps all configured disk, networking and switch connections to a spare server, which boots into the same identity as the failed resource. Spare servers can be pooled in two ways: a global pool (which can be accessible to all of the LPANs in the PAN) and a local pool on an individual LPAN (which is accessible only to that LPAN). A third failover policy dedicates a specific failover server to an individual pServer within an LPAN.

N+1 High Availability

- In the pServer Overview of the PAN Manager GUI the current settings for primary-, secondary- and current pNode (processing resource) are displayed.
- The secondary pNode will be booted automatically in case of a failure of the primary node.



Flexible Disaster Recovery

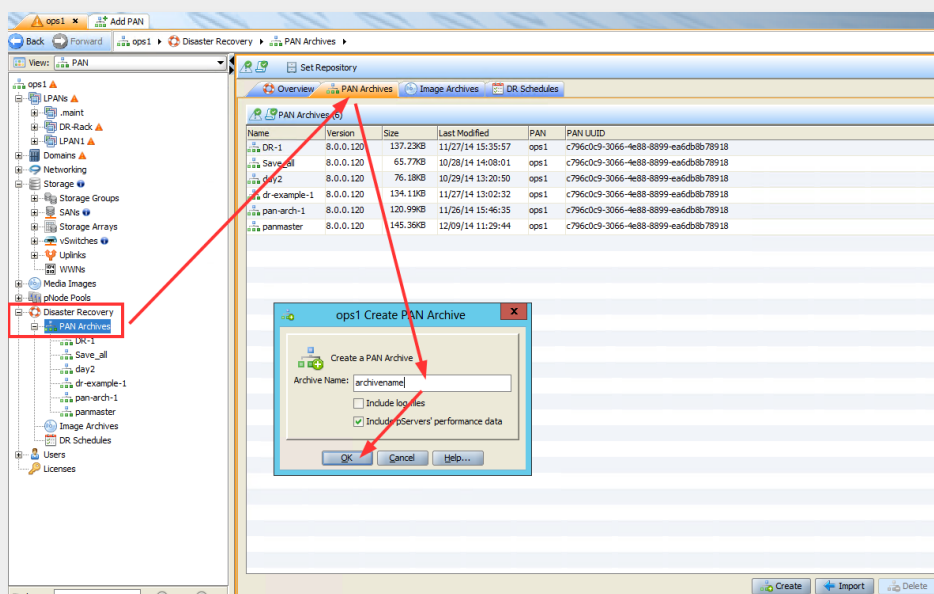
The PAN architecture provides unique capabilities for providing disaster recovery. The PAN configuration and administration characteristics are stored on the SAN in a file called a PAN archive, which allows for the entire PAN configuration or defined portions to shift between sites of processing resources.

In the case of a disaster recovery operation, PAN Manager migrates the entire data center configuration to a secondary location. PAN Manager moves each physical and virtual server configuration in its entirety, including operating system, hypervisors, and applications. This approach lets you construct an N+1 disaster plan whereby a single site can be used as backup for multiple production sites. In addition, these backup systems can be productively used for non-critical applications or development until such time as recovery is required.

Beyond the setup of storage replication on the ETERNUS or NetApp storage system there is no need to reserve and configure the resources beforehand, all this will be done when the failover will be executed, by loading the XML files containing the defined and stored DR policies and archives. Ad-hoc or scheduled DR testing can take place without disruption to the live environment or the need for additional tools. The identical failover processes are followed regardless of the virtualization hypervisor or operating system installed on the compute node. This level of simplicity and automation has made it possible for customers to reduce their run book and DR plan instructions to a few key tasks and to shorten the recovery times to 30-45 minutes for a site.

Creation of PAN archives

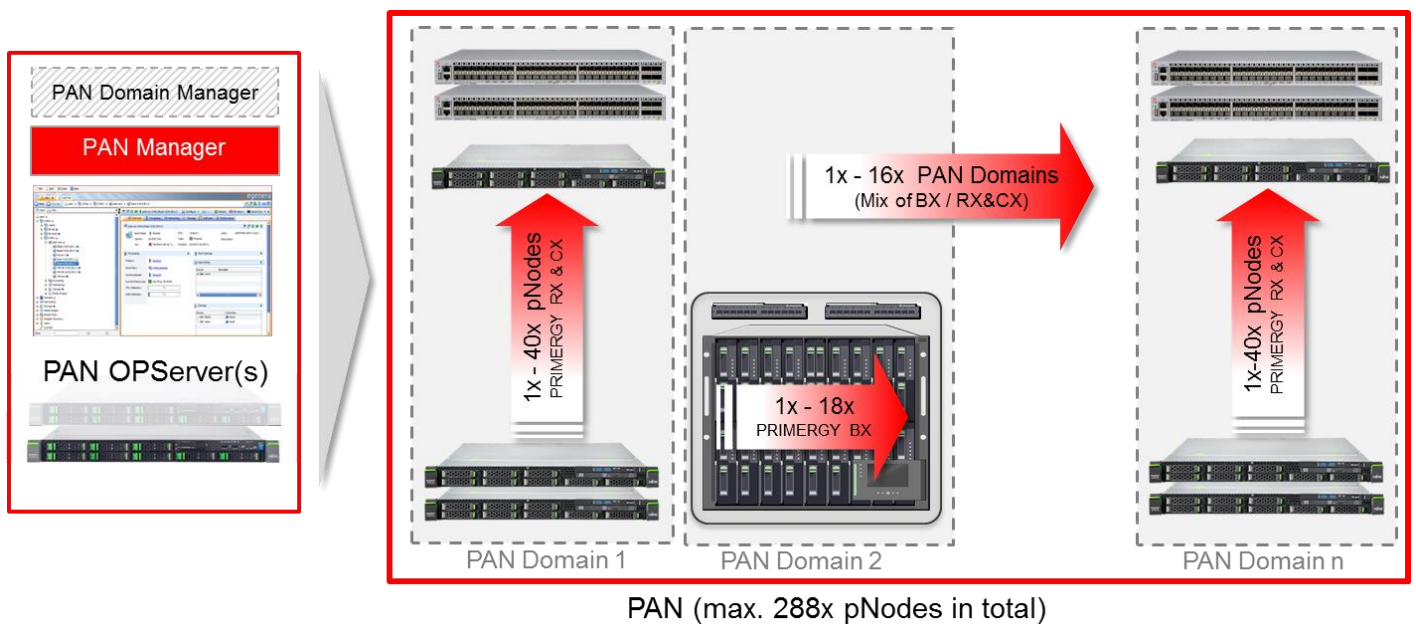
- To save the complete setup of all pServers (XML files) an administrator can create archive within the PAN Manager software.
- In case of a disaster this archive can be loaded on the recovery side.



Domain Management

The PAN Manager software supports the common administration of up to four PAN domains. A PAN domain is defined as a pair of PAN Fabric Switches (Brocade VDX 6740, Cisco Nexus 5548UP, or PRIMERGY BX Connection Blade) and the servers connected to those switches. Through additional software, the PAN Domain Manager, up to 16 domains can be administered in a PAN environment.

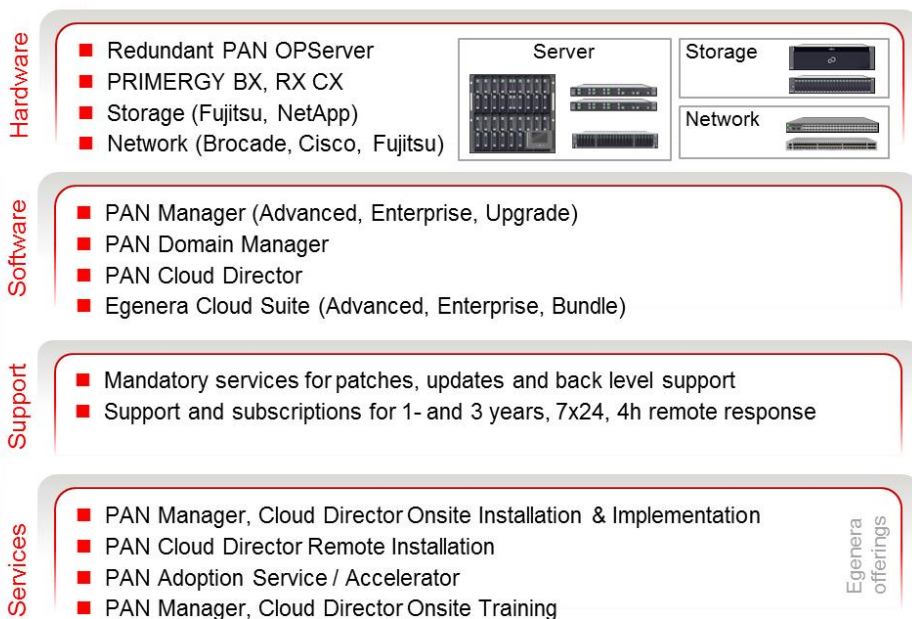
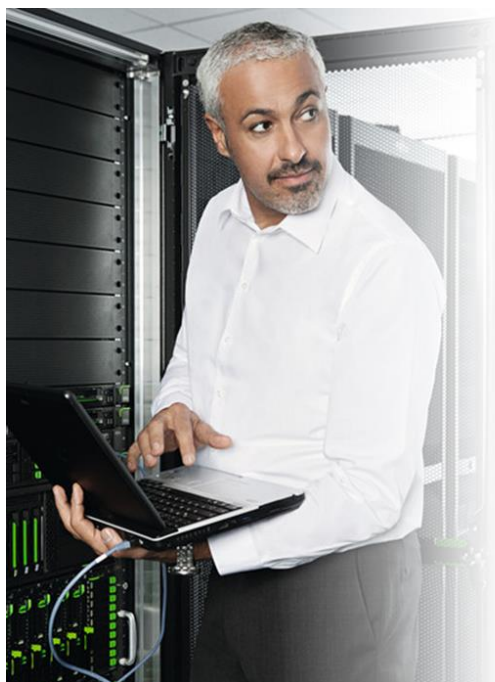
The PAN Domain Manager provides scalability, heterogeneity and advanced storage management technologies and extends the flexibility of PAN Manager to large-scale deployments. This capability enables server profiles to be moved transparently between different platforms, allowing to capitalize on the openness and flexibility of mixed form factors and environments.



Conclusion

Building data center infrastructures for a certain use case can be complex, error-prone and time-consuming. Moreover it requires a deep knowledge of all components involved and their dependencies to each other. Therefore, a do-it-yourself approach entails many risks for businesses. These risks can be avoided by using integrated systems.

FUJITSU PRIMEFLEX for Egenera PAN offers such an integrated system and merges all required hardware resources, virtualization and management capabilities with operating systems and virtualized applications throughout the enterprise. Additionally included failover and disaster recovery capabilities further improves service levels with a single automated recovery plan for physical and virtual servers. The result dramatically lowers capital and operational expenses while providing best-in-class agility and reliability. The solution enables IT to provision, manage and protect IT infrastructures. It provides powerful management and policy-based automation and orchestration with one-click provisioning and optional private/hybrid cloud management, freeing the IT staff and improving the service levels delivered back to the business.



- Pre-defined, validated and pre-tested IT solution with ongoing overall solution release process
- Tailor-made solution for individual usage scenarios, all supported by Fujitsu as a single point of contact (SPOC)
- Open platform choice for servers (PRIMERGY BX, RX, CX), storage (ETERNUS DX, NetApp FAS, network (Emulex, Brocade, Cisco), OS and virtualization
- Orchestration and flexible on-demand capacity: Resources can be configured with only a few mouse clicks across multiple platforms
- Virtual Machine Instance (VMI): Cost-effective way to provision and manage both virtual and physical servers
- Multi-tenancy: Create secure resource pools and share servers between users, reducing capital investments
- High Availability: N+1 hardware redundancy regardless of software workload and without complex clustering products
- Disaster Recovery: Improve reliability and service levels with a single automated recovery plan for physical and virtual servers
- Cloud (private, hybrid) management with easy way to request and consume IT

Contact

Fujitsu Technology Solutions GmbH
Mies-van-der-Rohe-Strasse 8
80807 Munich, Germany
Website: www.fujitsu.com

2015-04-07

Fujitsu ©Copyright 2015 Fujitsu, the Fujitsu logo, are trademarks or registered trademarks of Fujitsu Limited in Japan and other countries. Other company, product and service names may be trademarks or registered trademarks of their respective owners. Technical data subject to modification and delivery subject to availability. Any liability that the data and illustrations are complete, actual or correct is excluded. Designations may be trademarks and/or copyrights of the respective manufacturer, the use of which by third parties for their own purposes may infringe the rights of such owner.