

“nGrid”

Mr. Alan Woo
CTO, NewMedia Express
alan@newmediaexpress.com



What is “nGrid” ?

- June 2008
- “nGrid” is one of the consortium awarded by IDA under the CFC (call-for-collaboration) to rollout commercial grid services.

“nGrid” consortium lead

NewMedia Express



- Managed hosting service provider
- SGNIC accredited registrar (.sg Domain)
- APNIC member
- BGP4 Multihome Network (AS38001)
- Peers with NTT, China Telecom, Starhub, PacNet & SingTel.

“nGrid” consortium members

- Fujitsu Asia Pte Ltd 
Hardware vendor & System integrator
- 1-Net Singapore Pte Ltd 
Data Centre & SaaS Provider
- Microsoft Singapore 
SaaS Provider
- Advanced ERP Pte Ltd
SaaS Provider

“nGrid” - Grid Engine ?

- nGrid is NOT a grid engine.
- nGrid is an infrastructure that is based on “Virtualization” technology to enable grid computing applications or SaaS applications to co-exists in the single hardware environment.

Server is NOT an asset

- Server hardware & software purchase is NOT an asset, it is a expenses.
- Short lifespan 2-3 years.
- Server runs 24 x 7 in a data centre, translate to high running cost.
- Old server is NOT energy efficient. Low processing power, even if using the same amount of electricity.

On Demand Computing

- Purchase compute or storage resource when needed
- No high upfront cost
- No minimum commitment
- Flexible billing, pay per use
- High availability and scalability

Sample Usage (1)

- 3 month of development project
- 10 developer
- 8 hour a day, 5 day a week usage
- Provision server for 9am – 6pm, Monday – Friday
- Software licensing subscription, pay per User licensing.

Sample Usage (2)

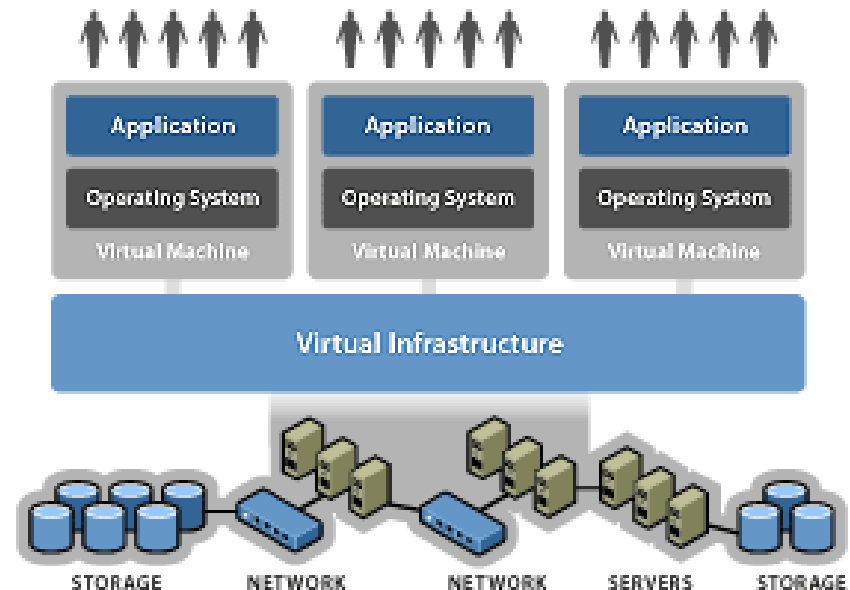
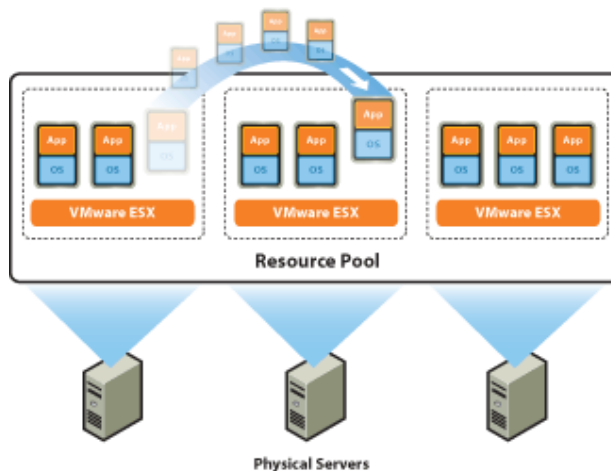
- Required to convert 1 million page of TIFF document to PDF format
- Required 20 Processor Cores & 1000GB Storage.
- To be complete in 1 weeks
- Faster time to market

“nGrid” - Virtualization

- Server Virtualization
 - Fujitsu Blade Server + VMware
- Network Virtualization
 - Cisco 6500 core switch with modular service module
- Storage Virtualization
 - NetApp FC, ISCSI, CIFS, NFS

“nGrid” - VMware Platform

- Support Linux or Windows OS
- Manage distribution of resources
- VMotion (Live Migration)
- High Availability, DRS



“nGrid” - Compute Resources

- Fujitsu Blade Server
- 200 CPU Cores, Low Voltage Intel Xeon Processor 2.33Ghz
- 400GB RAM
- Redundant Power Supply, Management Module, Network Module



“nGrid” - Storage Resource

- NetApp Dual Controller Storage Sub-system
- Up to 420 Disks
 - 28 x 300GB FC Disk
 - 28 x 750GB SATA Disk
- FC, ISCSI, CIFS, NFS Protocol
- High Availability
- Fully redundant configuration



“nGrid” - Network Resource

- Cisco 6509E Core Switch
- 2 x Supervisor Engine 720
- 2 x Firewall Service Module
- 2 x Gigabit Switch Module
- 20Gbps Firewall Throughput
- 720Gbps Backbone
- Fully redundant configuration

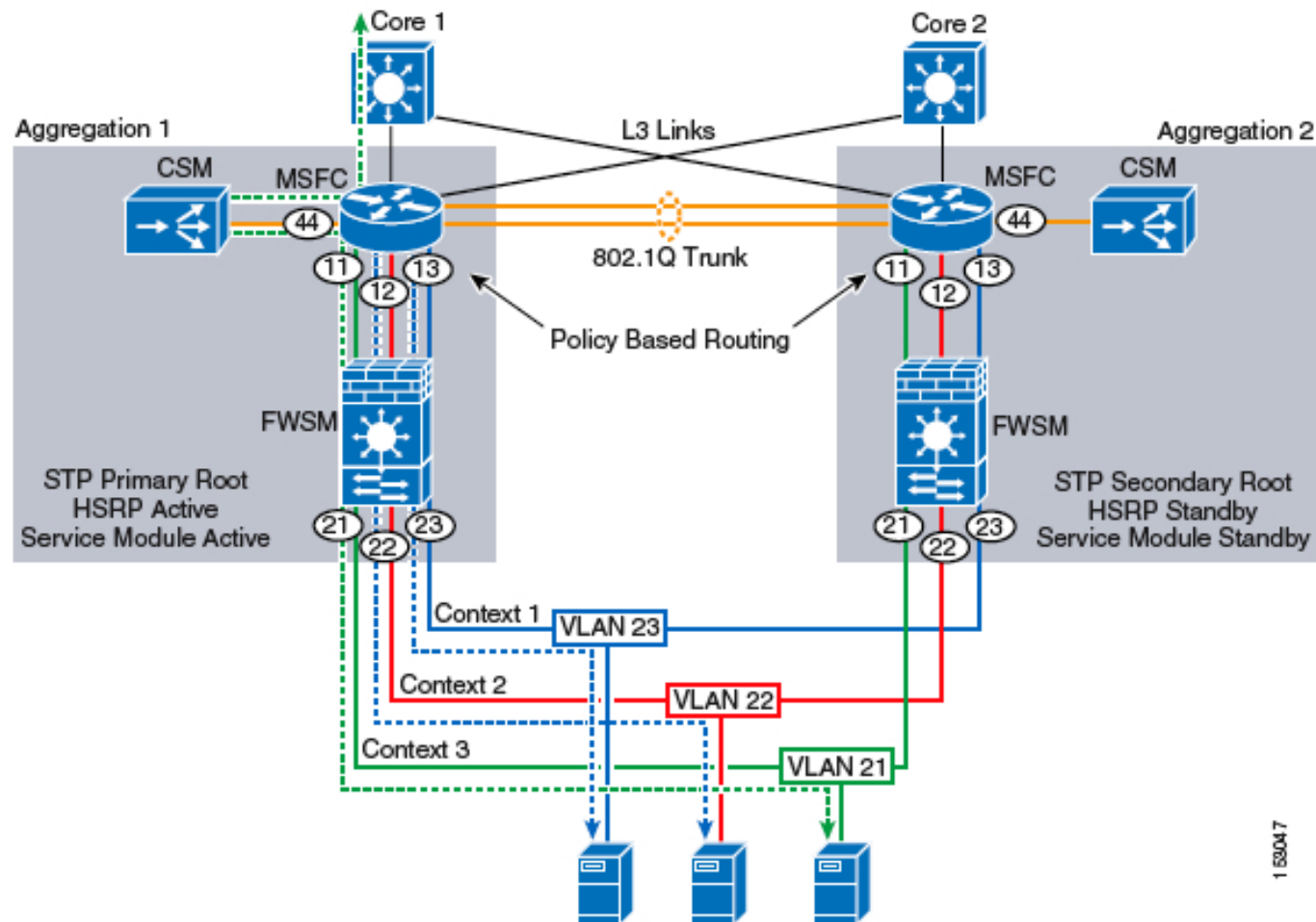


“nGrid” - Network Security

- Cisco Firewall Service Module
- Up to 20Gbps Throughput
- 1 Million Concurrent Connections
- 250 Virtual Firewall
- DoS Protection
- Stateful Inspection Engine



“nGrid” - Network Isolation



Typical Data Centre

- Rack Rental
- Routers, Firewalls, Switches
- Servers
- Storage & Backup
- Microsoft OS Licenses
- x2 for redundancy or high availability configuration

“nGrid” – Virtual Infrastructure

- Built-in redundancy, High Availability ready
- Integrated Router, Switches, Firewall
- Included Microsoft Windows 2003 Server Licensing
- On demand compute resource
- On demand storage capacity
- Managed security services
- Managed snapshot backup

“nGrid” – SaaS Provider (1)

- **Microsoft SPLA**
 - Microsoft Office Suite
 - Microsoft Development Suite
 - Microsoft SQL Server
 - Microsoft Exchange, Sharepoint
 - Microsoft Dynamic (CRM)
- **VMware VSPP**
 - Virtual Infrastructure (ESX server)
 - Virtual Desktop Infrastructure

“nGrid” – SaaS Provider (2)

- **Parallels**
 - Parallels Business Automation
 - Parallels Plesk Control Panel
 - Parallels Virtuozzo Containers
- **Advanced ERP**
 - ERP applications
- **Wired-Media**
 - Ecommerce platform

Thank You

For more information
please visit:

<http://ngrid.sg>