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**Virtualization Beyond the Data Center
A Holistic Approach
Sep 8, 2009**

Roger Karlsson



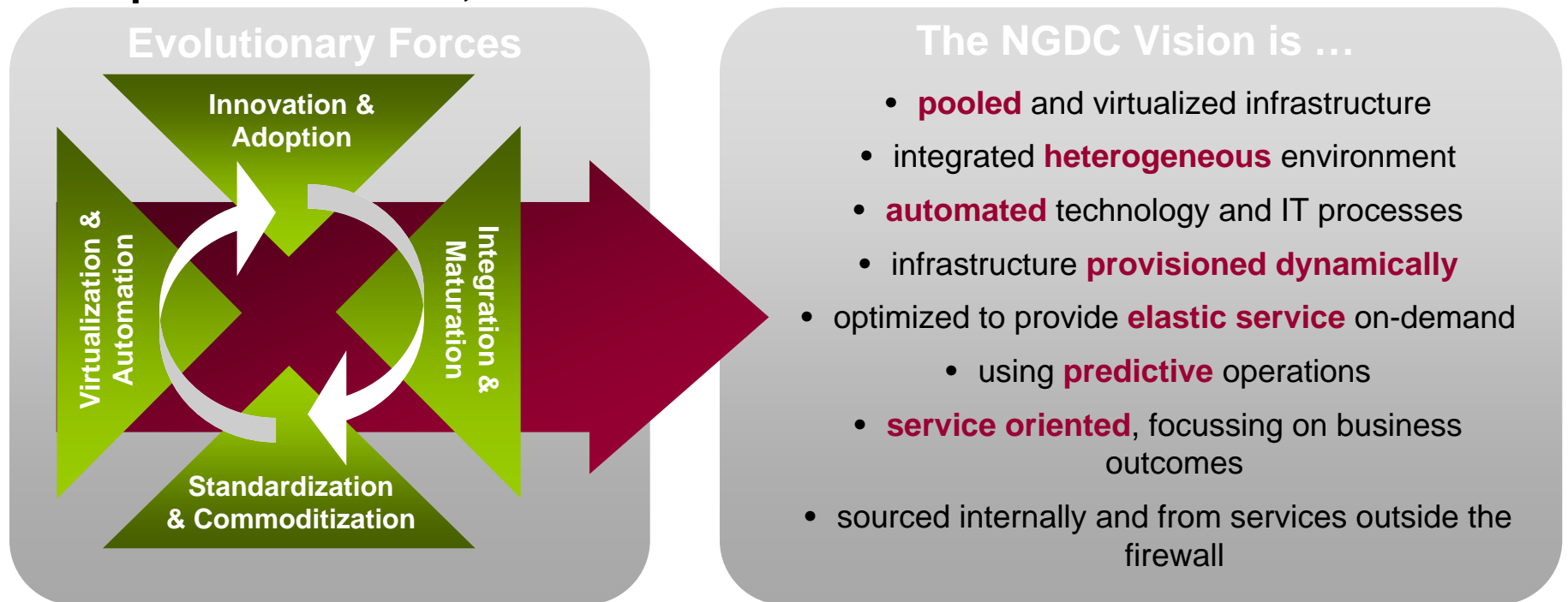
Agenda

- The Next Generation Data Center
- For a change: Let's NOT talk about servers
- Brothers in Arms – an example
- The Next Step
- Cisco & Accenture

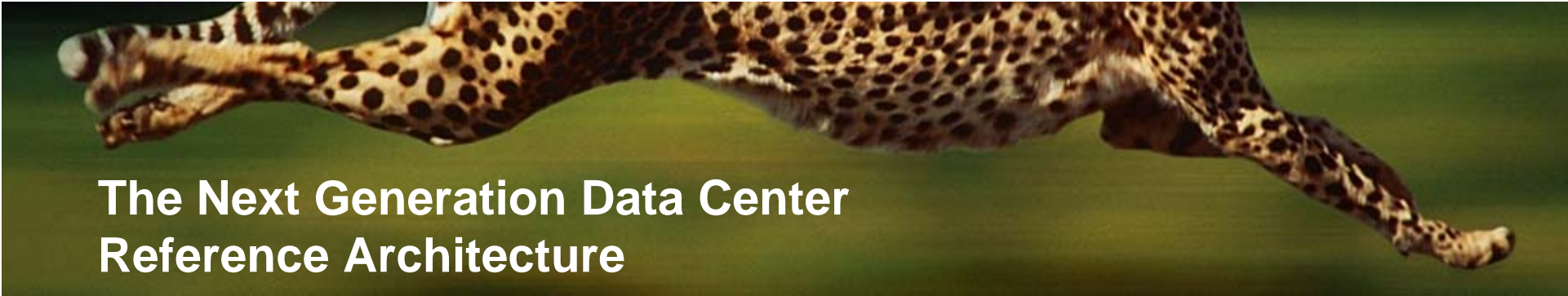


Accenture's Next Generation Data Center Vision

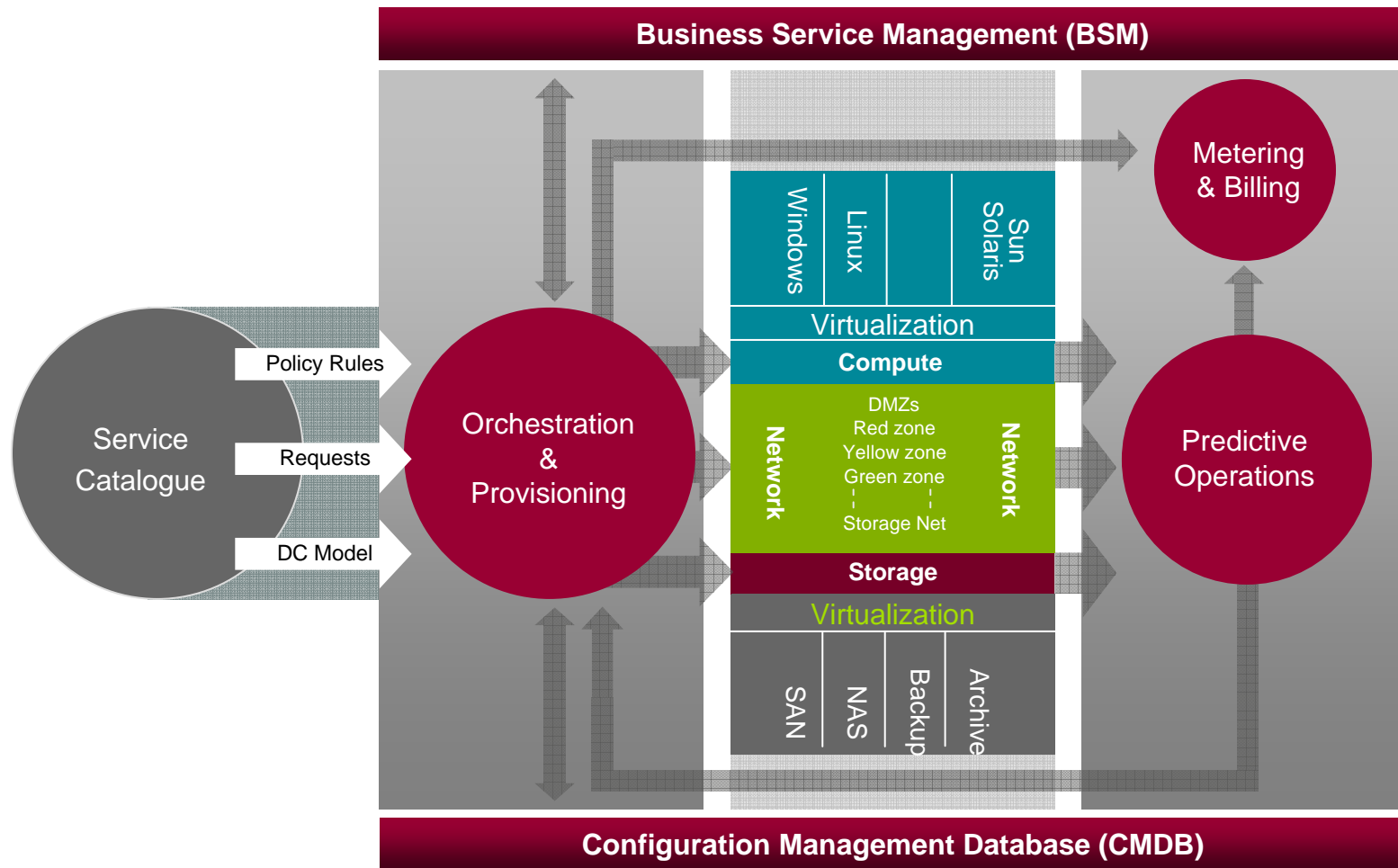
The NGDC is a highly flexible, pooled resource, built on standards based component hardware, software and services



Several maturing technologies enable the realization of the NGDC



The Next Generation Data Center Reference Architecture





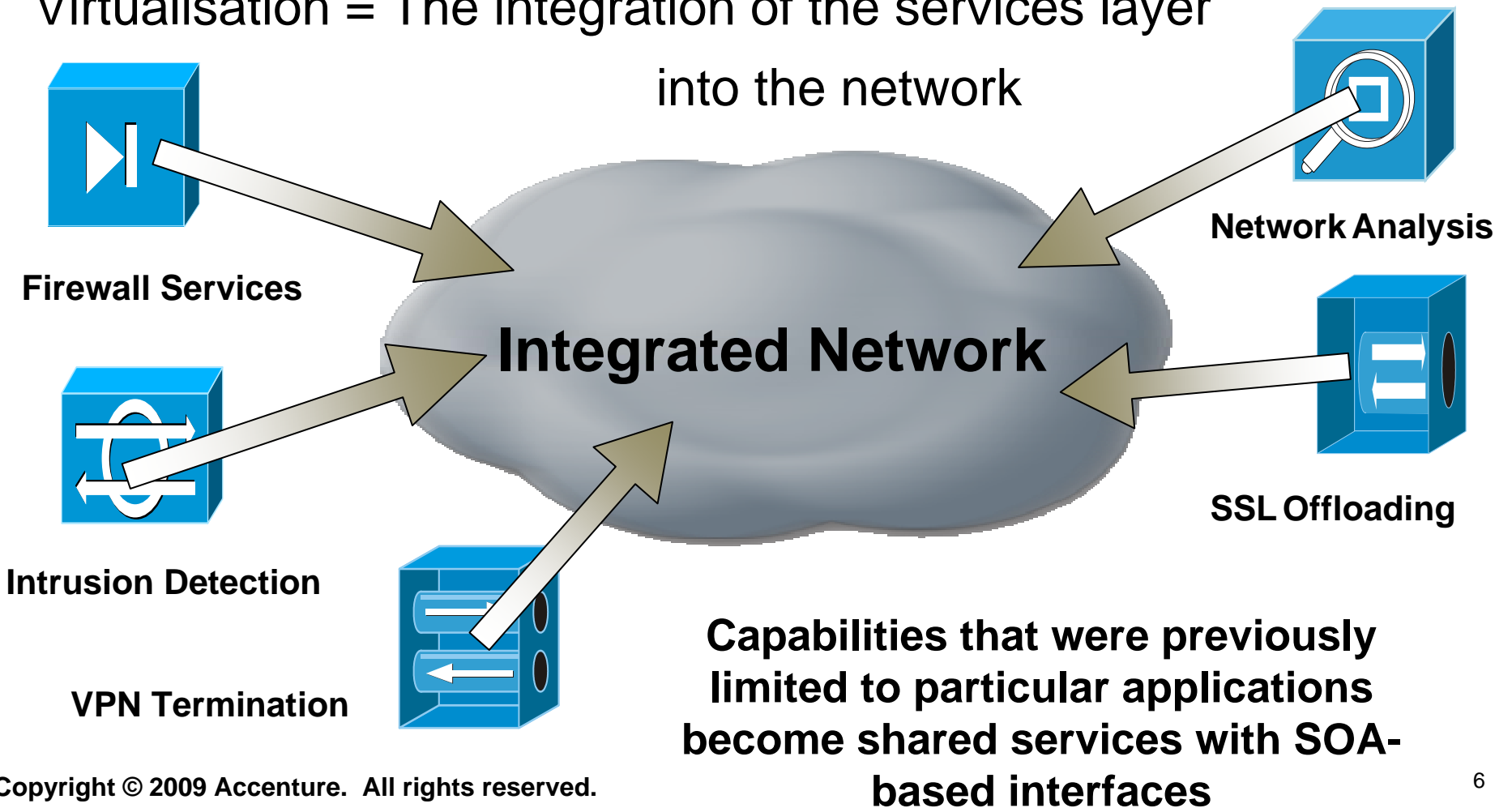
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Network Virtualisation Overview / Ideology

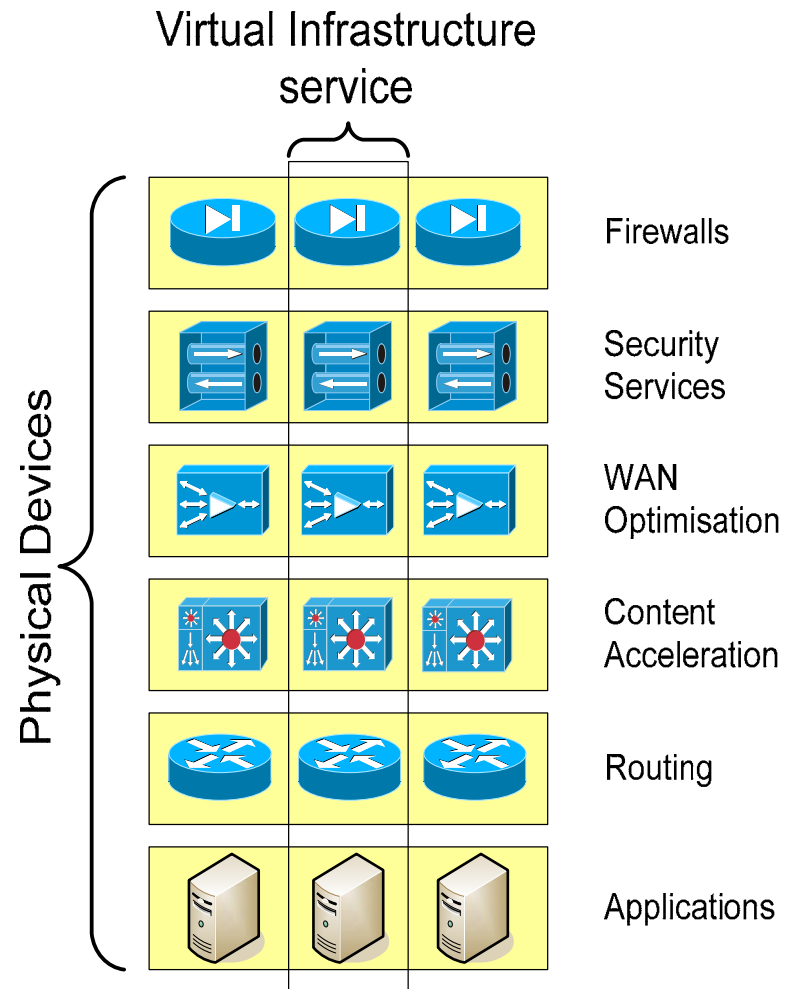
Virtualisation = The integration of the services layer
into the network





Beyond the server

- The natural extension of server virtualisation
- Providing full logical separation between environments
 - Increased security
 - Reduced risk
 - Increased flexibility
- Enhancing DC transformation by reducing costs & risk and increasing flexibility & availability



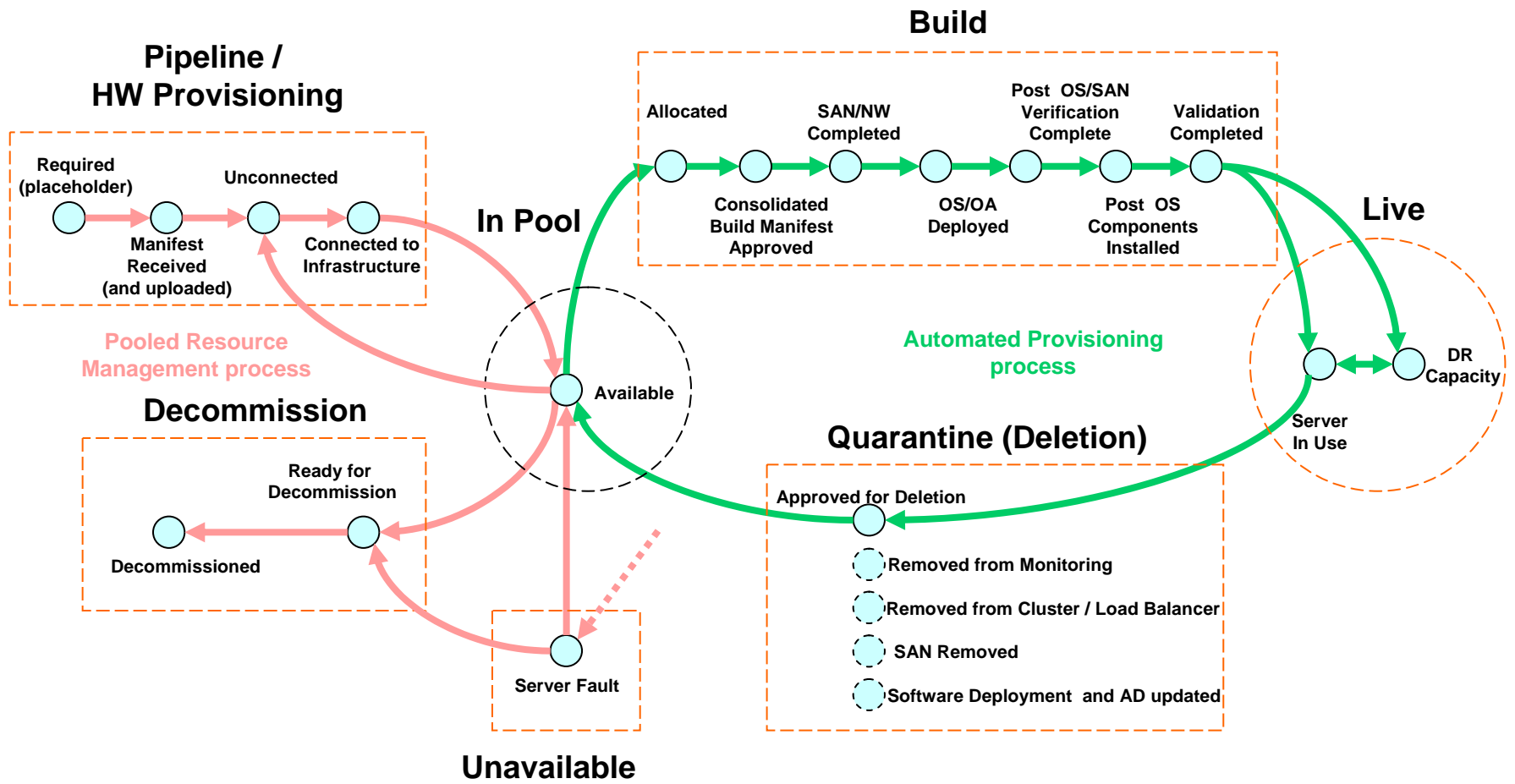


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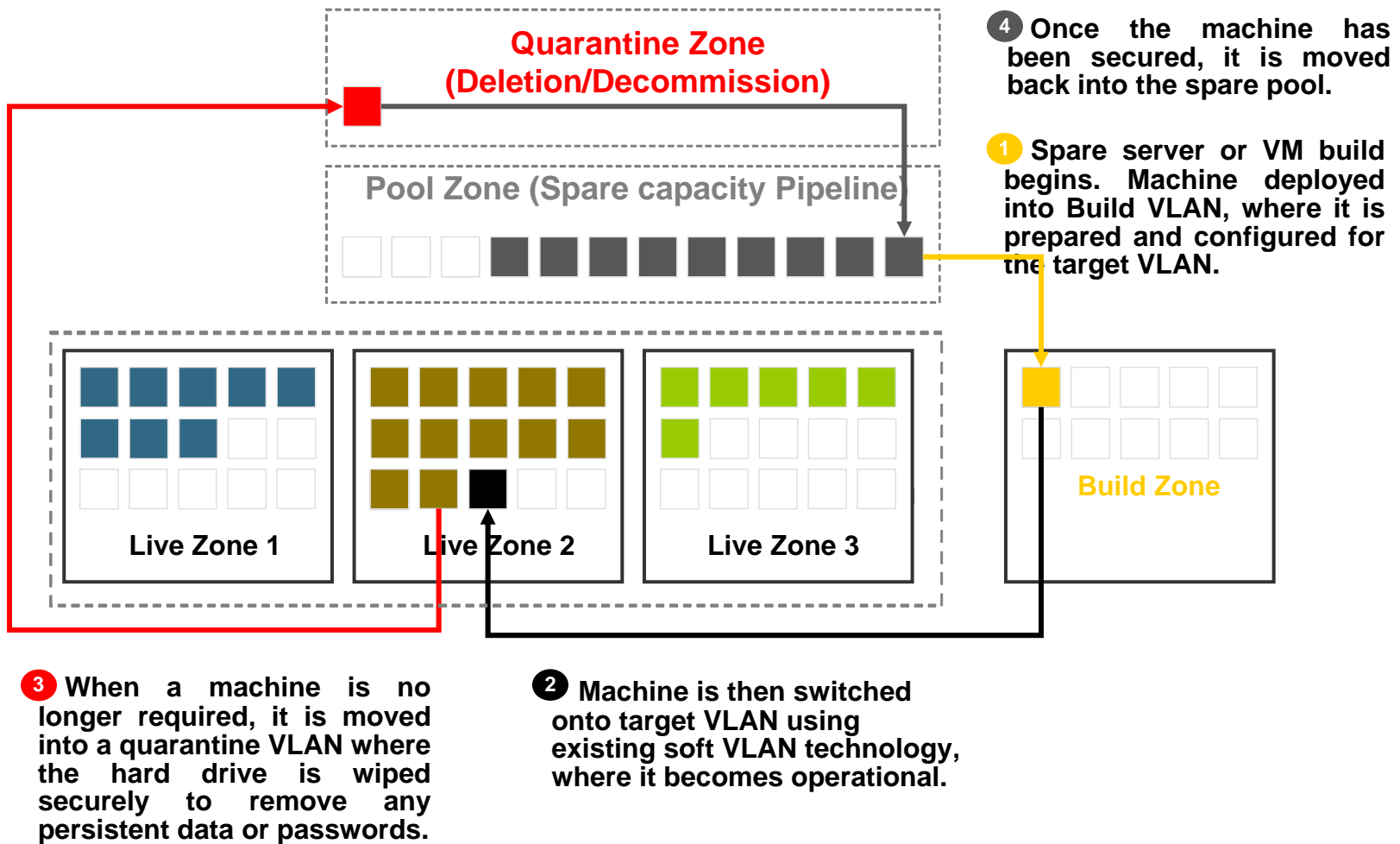
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Establishing a Dynamic Resource Management and Provisioning lifecycle is key

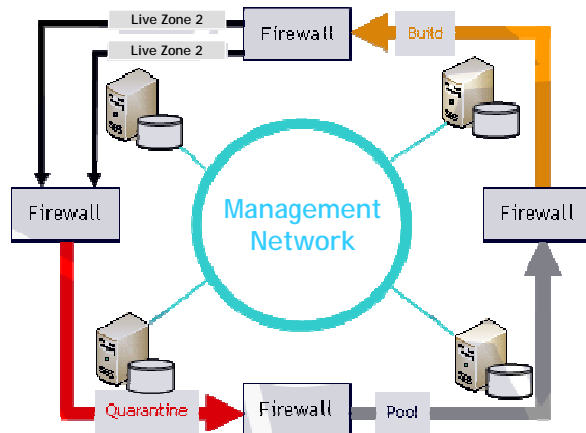


In the Provisioning Lifecycle, resources are logically moved to the network zone representing its state



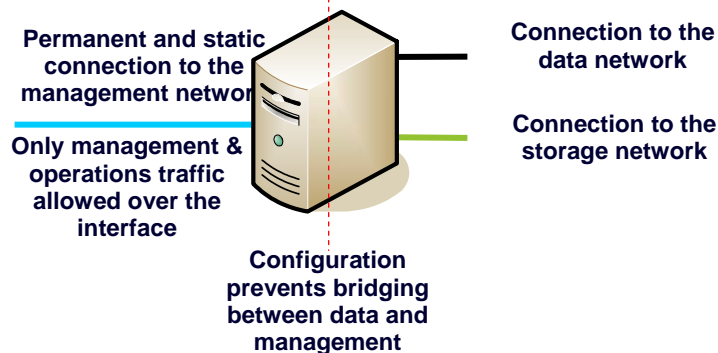
Example of the segregated virtual networks used on the Provisioning Lifecycle

Infrastructure Provisioning Lifecycle



- All server and storage infrastructure would initially enter the shared service via the **POOL** network – a holding area for spare capacity
- When requested the infrastructure components are provisioned into the **BUILD** network for configuration
- When ready for deployment the server components are redeployed into one of the **LIVE** networks. NAS would pass into a storage network of the same security classification
- When no longer required the infrastructure components are moved to the **QUARANTINE** network where data & applications are removed before the components is passed back to the **POOL**
- All networks are separated by firewalls
- A server/NAS is only attached to one of the four network zones at anyone time, in addition to the Management network.

Connection of Servers to the Network



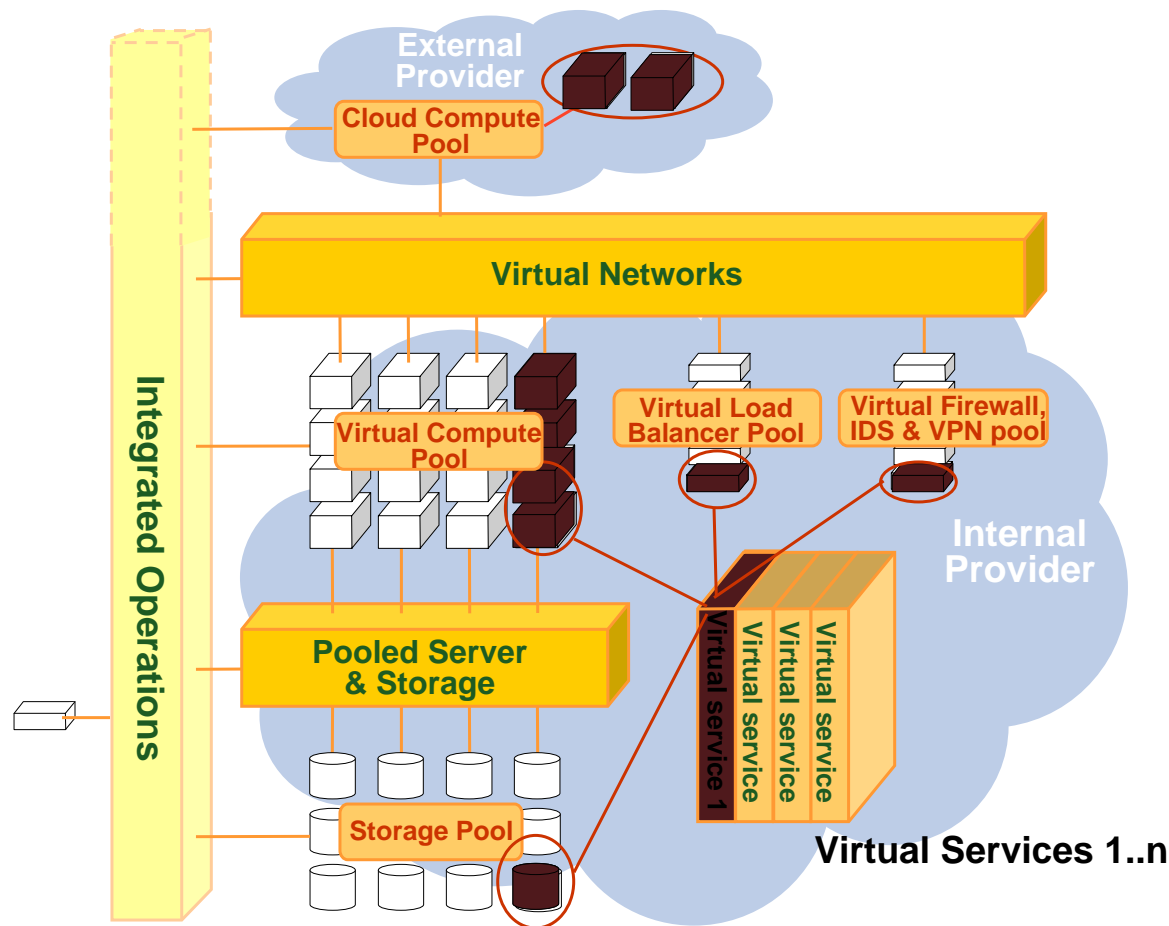
- Each server (virtual or physical) is permanently connected to the management network to allow the provisioning tasks and predictive operations control the deployment of the resource
- Data and storage network interfaces change according to both the security classification of the server and it's location in the provisioning lifecycle (see above)
- A server/NAS is only attached to one of the four network quadrants at anyone time, in addition to the Management network.
- The server does not allow connections between the management and data networks to be bridged



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Service Virtualization in the NGDC



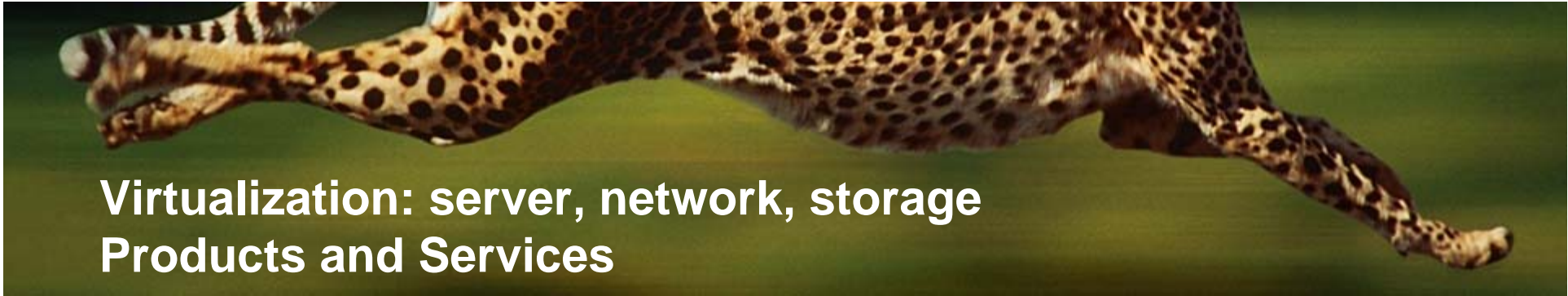
Service Virtualization

- Services are not bound to the physical underlying infrastructure
- Moving further than traditional resource virtualization, service virtualization attempts to encapsulate all the virtualized components of an end-to-end business service and allow them to be managed as a unit
- Provisioning lifecycle used to allocate/de-allocate pooled resources into the Service
- Service no longer limited to traditional boundaries of the internal provider
 - Extends to the Cloud



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Virtualization: server, network, storage Products and Services

Cisco Products

- [MDS 9500 series](#)
- [MDS 9200 series](#)
- [MDS 9100 series](#)
- [MDS Intelligent Fabric Applications](#)
- Nexus 1000v
- Nexus 5000 Series
- Unified Computing System

Services

- SAN Assessment Service
- Director SAN Planning and Design Service
- Fabric SAN Planning and Design Service
- SAN Optimization Service
- Data Mobility Manager & design service
- Data Mobility Manager Support (SASU)
- Server Virtualization Service
- Virtualization Assessment
- Virtualization Accelerator
- Virtual Desktop Infrastructure Service
- Nexus 1000v Services
- **UCS Accelerator Services**

Third Party Products and Services

Storage partners: to test and validate data center and SAN solutions Cisco and Accenture work closely with multiple storage partners: NetApp, EMC, VMware

Virtualization management vendors/products: PlateSpin –Recon / Convert, HP nWorks SPI Monitoring, Zenoss – Management and Monitoring, Hyperformix Capacity Planning, VMware Capacity Planner / VMware Converter



Thank You