50,000 seat VMware View based Desktop deployment on Cisco UCS

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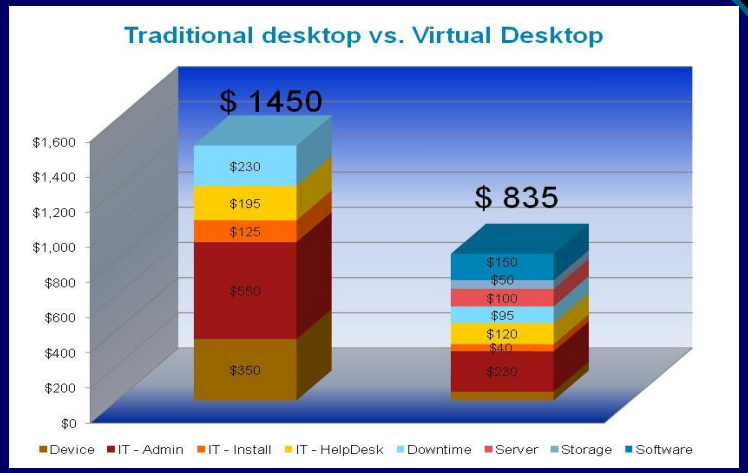
Desktop Virtualization overview
Business Case and Implementation Challenges

Motivation for Desktop Virtualization

- Desktop Virtualization at Tipping Point
  - Desktops and data are secure in datacenter
  - Manage from a central location
  - Reduced Cost (Lowers TCO)
  - End user profile is changing, mobile users, remote office users
  - Customer confidence growing
  - Acquisition cost dropping
  - Technology is ready
  - Disruptive event: Windows 7 migration



Challenges implementing Enterprise class Virtual Desktop Solutions

- Performance and Scalability
  - User Experience: Can I guarantee same QoS for each and every user
  - Implementing few desktops is easy but can I do it for my enterprise
- Capacity of underlying infrastructure in a datacenter
  - Is my server/network/storage ready?
  - Can we guarantee the SLA in a cost effective manner?
  - Data Center security: How can I bring desktops and keep other apps secure
- Manageability
  - Paradigm shift: Managing desktops in VMs vs Managing physical desktops

Cisco UCS Solution for Desktop Virtualization

Unique benefits due to key UCS technologies

UCS Service Profiles

- **UCS Manager constructs pools, Templates and policies allows rapid server provisioning**
- Various user type can be mapped to specific server pools based on user profiles
- Various policies like boot from SAN, makes provisioning OS simpler
- UCSM allows QoS policies to be set right from the server adapter

UCS Extended Memory

- **Windows 7 has a large memory footprint; scaling Win 7 requires large memory**
- UCS extended memory technology makes it possible for high bandwidth (1333MHz) memory access even with four times more DIMM slots on a two socket architecture
- Larger memory footprint desktops makes B250-M2 ideal for VDI deployment

Virtual Interface Card ("Palo")

- **Cisco VIC simplifies Network management in the hypervisor**
- Using VN-Link in hardware the number of network management points can be reduced by an order of magnitude
- Provides low latency and high bandwidth for applications

Unified Fabric (FCoE)

- **Unified Fabric with high I/O bandwidth helps in scaling data intensive work loads**
- Wire once infrastructure for bandwidth and not for connectivity
- Eliminates multiple adapters, cables and switches to scale the infrastructure, reduces power in the Data Center.

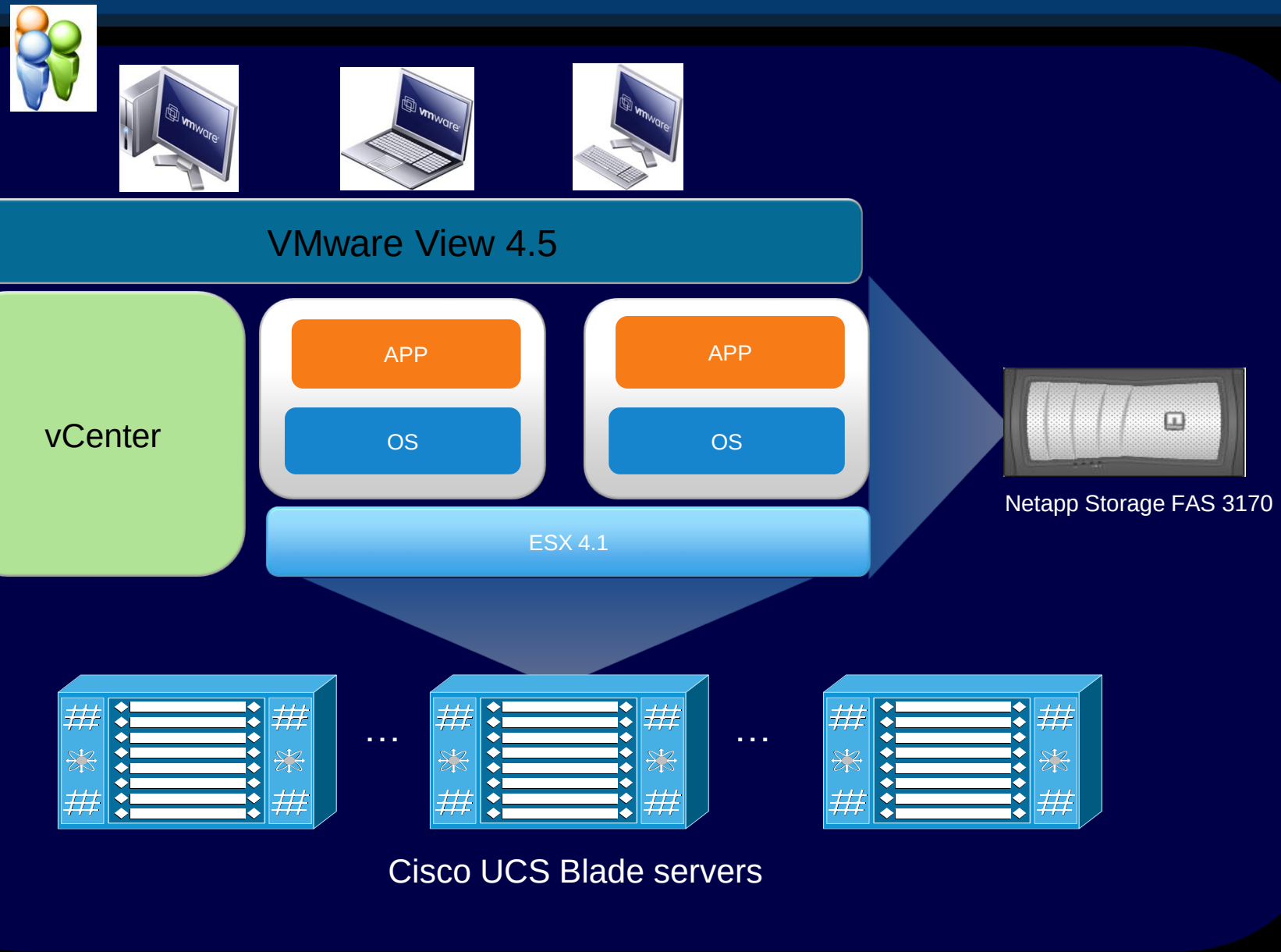
Cisco UCS is an ideal platform for desktop Virtualization

50K-seat VMware View deployment on UCS

Highlights

- Deployment on B200-M1 blade servers
- Create a dynamic and easily expandable virtualization infrastructure
- UCS-M Service profile templates, and Pools crucial for success
- Nexus 5k/Nexus 7k
- 10GE access to Filer
- Win 7 - 1GB
- VMware ESX 4.1/ View 4.5

Architecture diagram (POD)



- 5k Building block
- Scale the servers by adding more chassis to UCS domain
- Scales up to 20 chassis or 512 blades in one domain
- Service profile templates help in deploying new Servers quickly
- NIC templates, vHBA templates make configuration easy
- Central management
- Add storage capacity as you scale
- AD domain needs to scale as well
- Be wary of vSphere, vCenter maximums

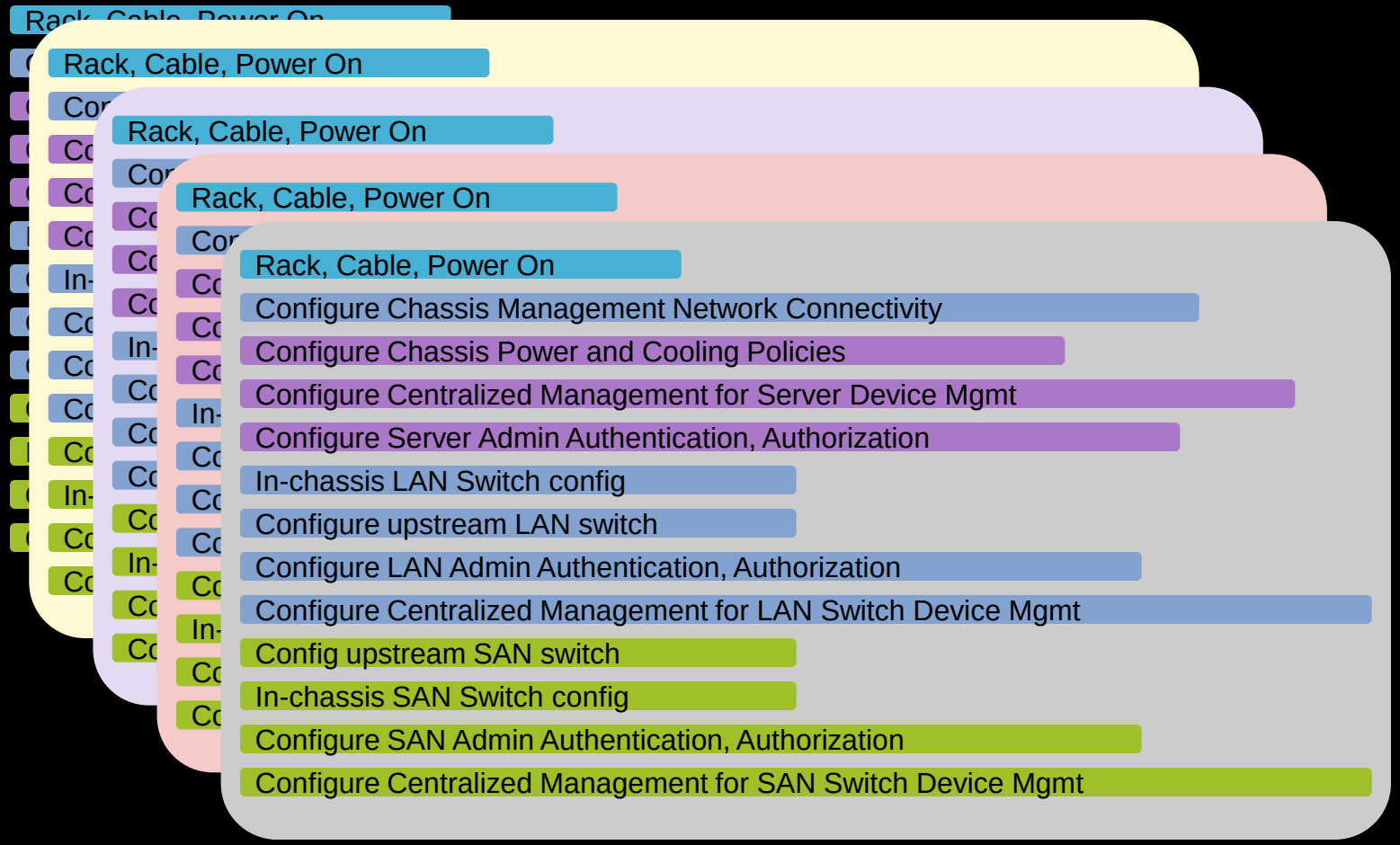
Source: Netapp WP-7108

Rapid Provisioning with UCS

Key to scale and create dynamic infrastructure

Comparison:
New Chassis Installation Before/After UCS

Before UCS



- Repeat full process for **each** new chassis
- Result:
  - **Linear time for adding new chassis**
  - **Scale adds complexity**

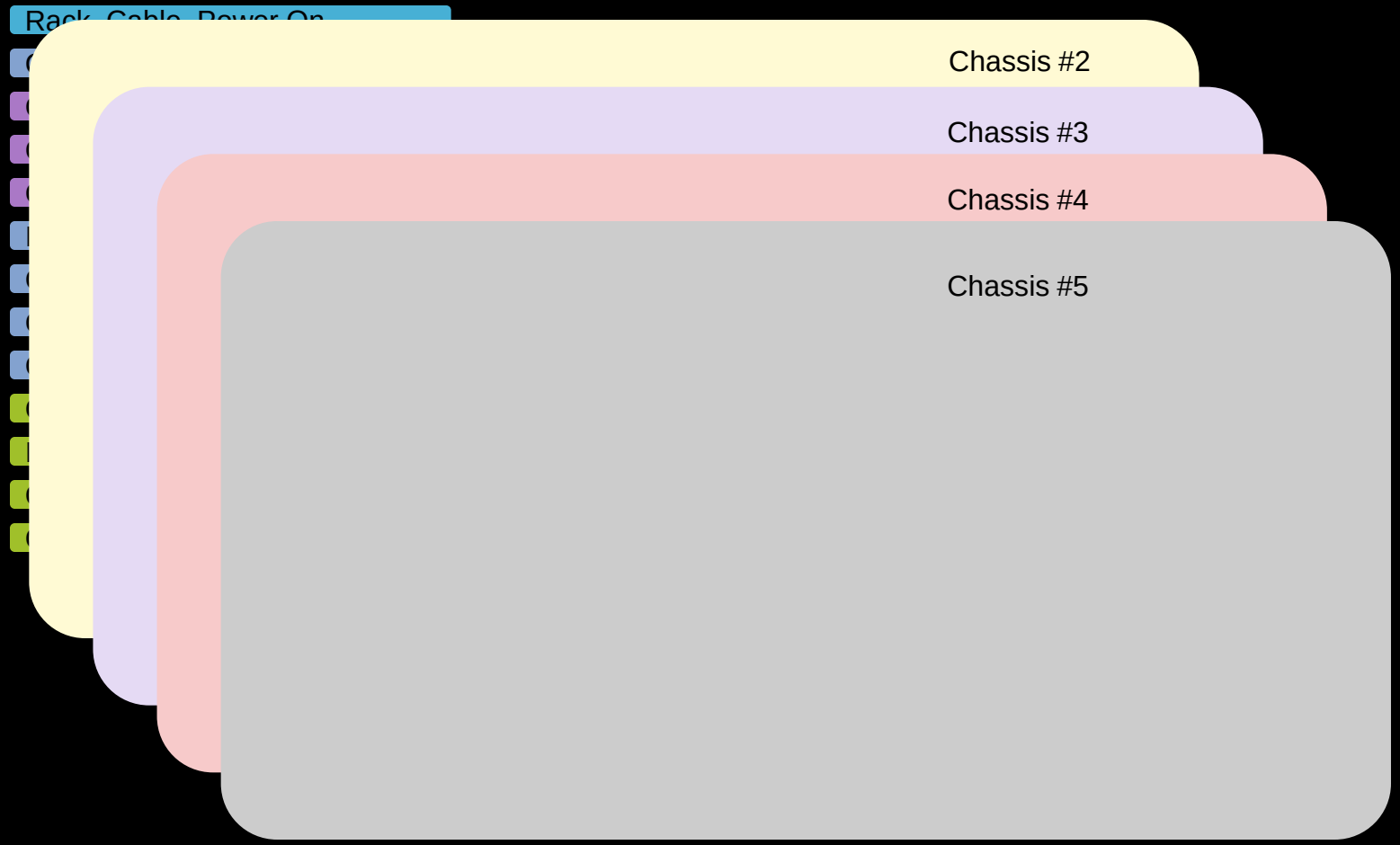
Time taken: 1-2 days

Time taken: 2-4 days

Time taken: 8-10 days

Comparison:
New Chassis Installation Before/After UCS

After UCS



Key Takeaway:
Rapid Provisioning with no extra time

- Full process for **first** chassis
- **Minimized** work for additional chassis
- Result:

  Scale without adding complexity

Time taken: 1-2 days

Summary

UCS – Ideal platform for Desktop Virtualization

- Service profiles templates and pools.
- Different service profiles for different workload or user profiles
- Concepts of pools and templates of UCSM fit nicely with VMware View's idea of Desktop pools
- Unified fabric with high I/O bandwidth helps in scaling data-intensive workloads
- Chassis configured based on bandwidth not just connectivity – Wire once infrastructure

TR-3865, "Building a 50,000-Seat VMware View 4.5 Deployment"

Stay tuned on more Cisco UCS desktop Virtualization solutions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