



**NEW**

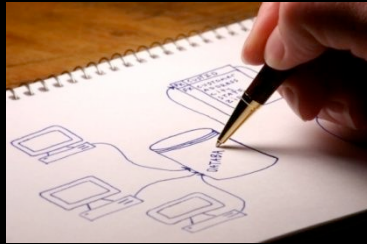
# Cisco Nexus 7000

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# Agenda



## Data Center 3.0



## Nexus 7000 Hardware



## Nexus 7000 Software NX-OS



## Nexus 7000 Management DCNM



## Nexus 7000 Product Positioning

# Data Center 3.0



# Data Centers are Under Increasing Pressure



Collaboration



Empowered User



SLA Metrics



Global Availability



Reg. Compliance

## New Business Pressures



## Operational Limitations

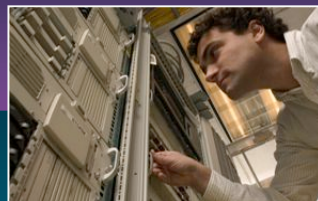
Power & Cooling



Asset Utilization



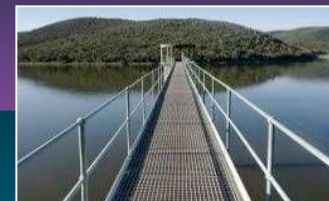
Provisioning



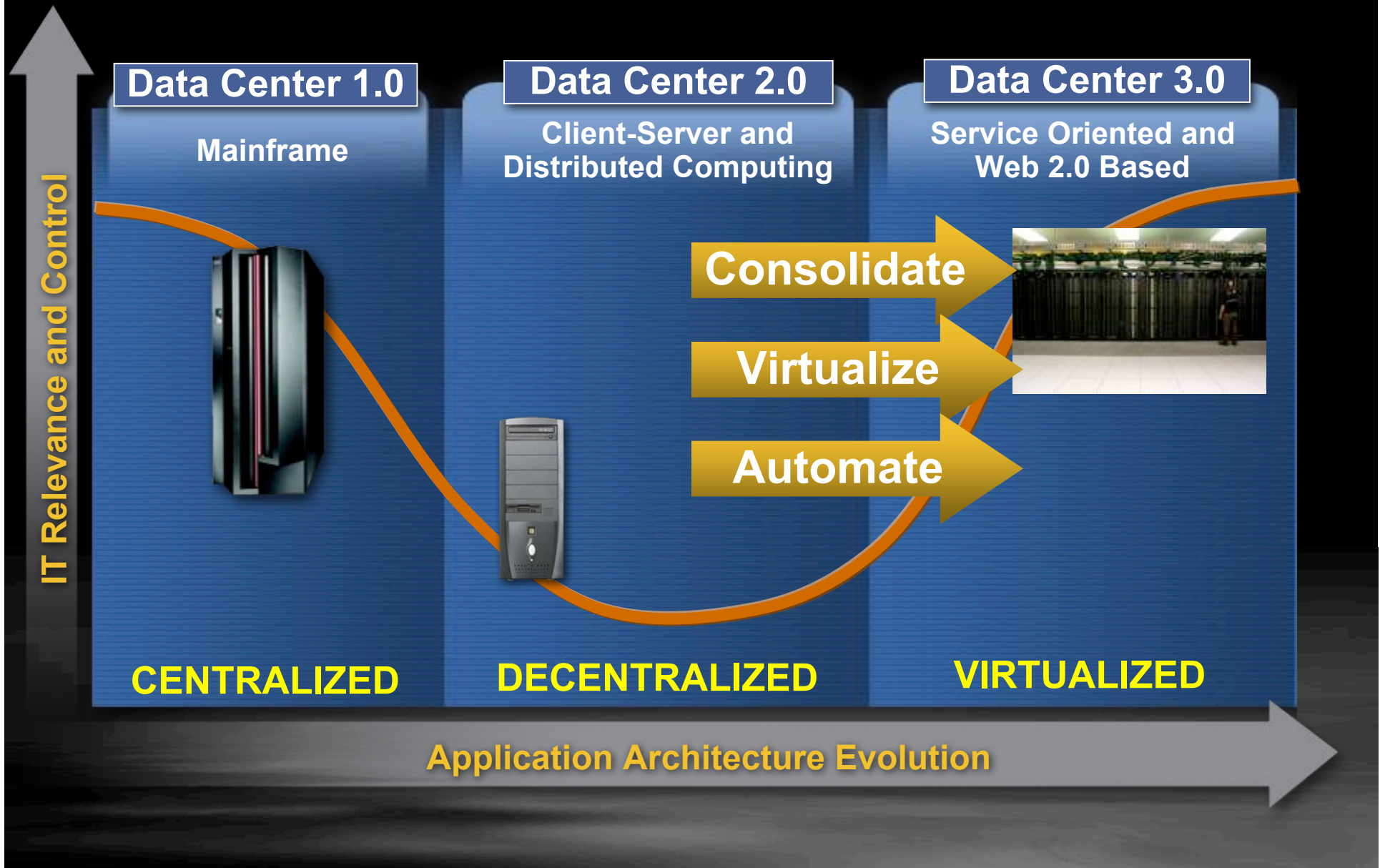
Security Threats



Bus. Continuance



# Data Center and Network Evolution



# Cisco Data Center – Vision, Strategy, Execution

## VISION

## STRATEGY

- ♣ SENSE changes in application demand, facilities, servers, and virtual machines
- ♣ Enable all IT Assets to RESPOND in a coordinated fashion in seconds to change
- ♣ EXTEND the Reach of Data Centers: Consolidate Data Center Networks

## EXECUTION

- ♣ Virtual Data Center Infrastructure: Servers, Storage, Networks, Network Services
- ♣ Unified Fabric and I/O
- ♣ Data Center Class Platforms
- ♣ Service Orchestration Systems
- ♣ Deep Application Intelligence: Message-Flow-Packet

Cisco  
**Orchestrates**  
Virtual IT

# Introducing Cisco Nexus Family: The Network Platform for Data Center 3.0

Over 1513 Patents  
Pending/Issued on Data  
Center Technologies

Over \$1B in Overall Data  
Center Research  
and Development

Transport  
Flexibility

Cisco® Nexus  
Delivers a Unified  
Fabric and I/O for  
the DC

Cisco Nexus Consists  
of Multiple Products  
with a Data Center  
Class OS



Cisco  
Nexus



Operational  
Continuity

Infrastructure  
Scalability

# Critical Infrastructure for Data Center 3.0



## Unified Fabric and I/O Interfaces

Enables storage, Ethernet, IP, and HPC traffic to converge to a single network

Lowers overall data center power draw



## Cisco® Nexus Switching Platforms

Multi-Terabit platform with ops-centric design

Delivers unified fabric and I/O deployments

Designed for the most stringent availability needs



## NX-OS Operating System

First multi-protocol DC-class operating system

Virtualized control plane and scalable design sets new standard for usability



## Data Center Network Manager

Builds on Cisco Fabric Manager to extend L2, L3, Fibre Channel, and unified fabric management

Provides end-to-end systems visibility

# Cisco Nexus 7000 Series Data Center Class Switches



- ♣ Zero Service Disruption design
- ♣ Graceful systems operations
- ♣ Integrated lights-out management

- ♣ Lossless fabric architecture
- ♣ Dense 40GbE/100GbE ready
- ♣ Unified fabric

- ♣ Virtualized control and data plane
- ♣ 15Tb+ switching capacity
- ♣ Efficient physical and power design

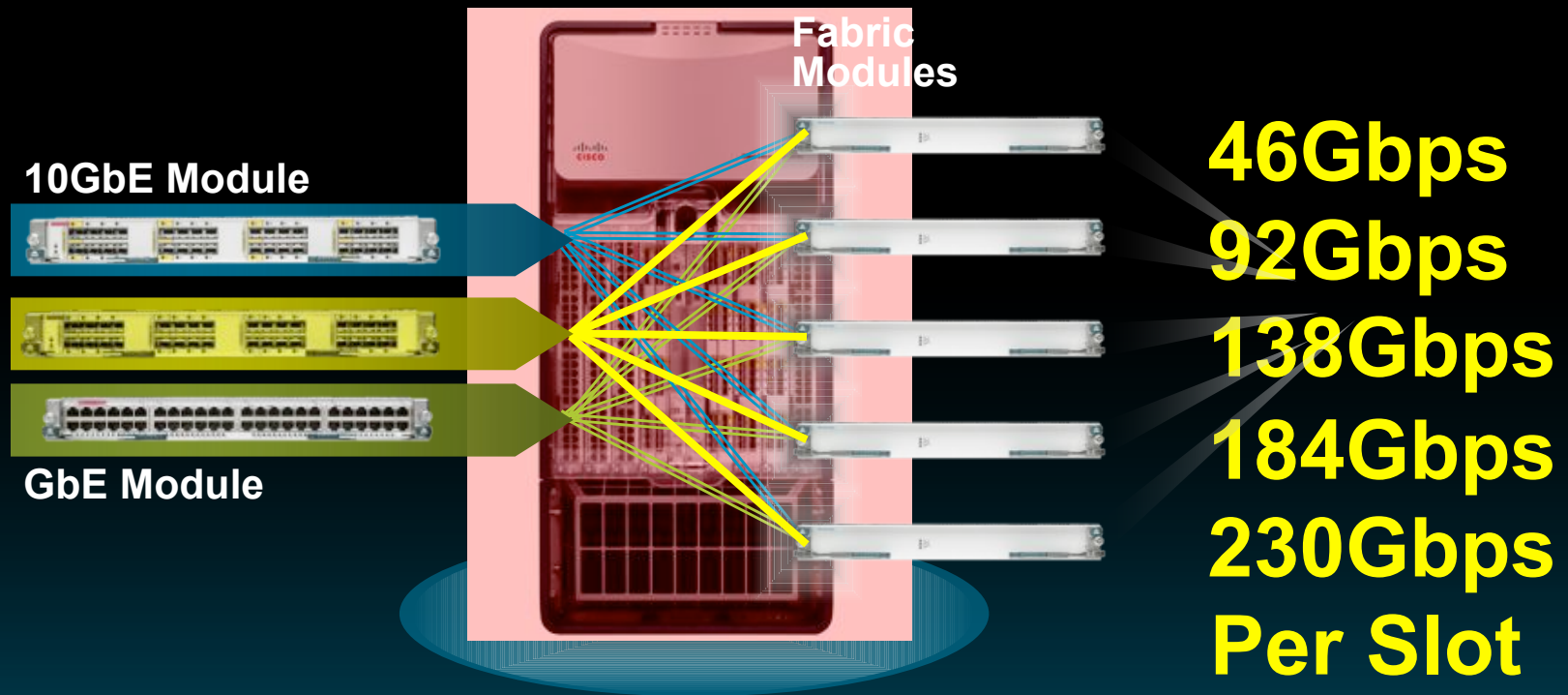
Operational  
Continuity

Transport  
Flexibility

Infrastructure  
Scalability

# 15Tb+ System Performance

## Bandwidth Scales with Each Fabric Module



**Investment Protection and Unified Fabric**

# Cisco Nexus 7000 Series: I/O Modules



**32-Port 10GbE**  
**256-512 Ports / System**



**48-Port 10/100/1000**  
**384-768 Ports / System**

Addresses all DC deployment scenarios—transport flexibility

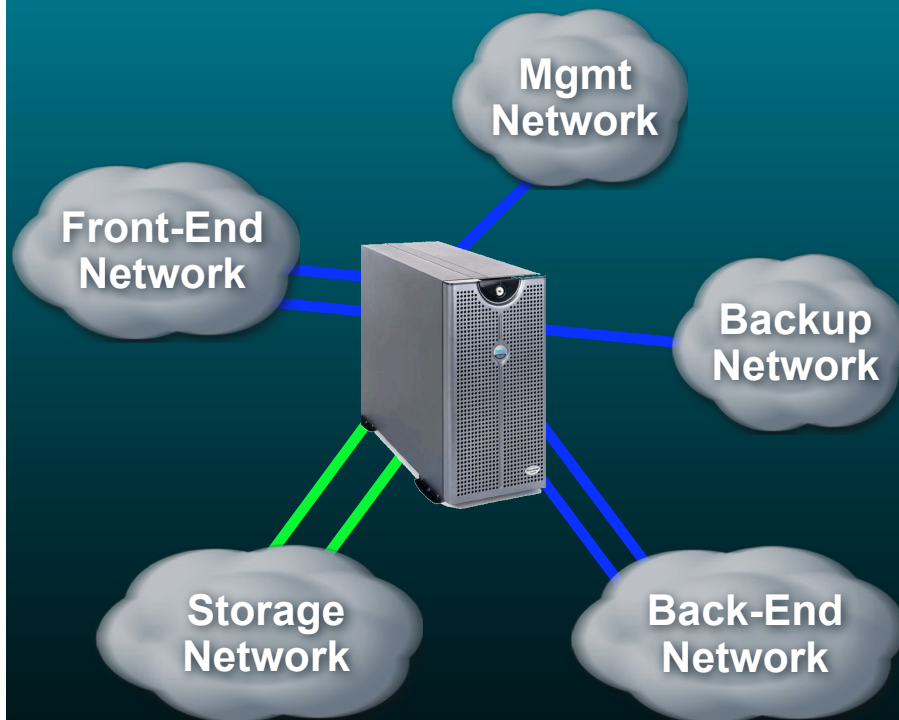
Uses all fabric bandwidth available, efficiently, with no fabric drops

Deterministic latency—fabric self-optimizes frame size under load

Distributed forwarding with large tables for security, QoS, and management

Cisco® TrustSec: wire-rate encryption and Roles Based Security on every port

# Increased Efficiency, Simpler Operations



Unified Fabric and I/O

# Key Benefits of Unified Fabric



**Reduce overall DC power consumption by up to 8%.  
Extend the lifecycle of current data center.**



**Wire hosts once to connect to any network - SAN, LAN, HPC. Faster rollout of new apps and services.**



**Every host will be able to mount any storage target.  
Drive storage consolidation and improve utilization.**



**Rack, Row, and X-Data Center VM portability become possible.**

# Data Center Class Requirements Demand Focused Software Development



## **Zero Service Disruption Design**

Enables Nexus to unify the data center fabric

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## **Virtual Device Contexts**

Overcomes administrative barriers to consolidation

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## **Graceful Process Restart**

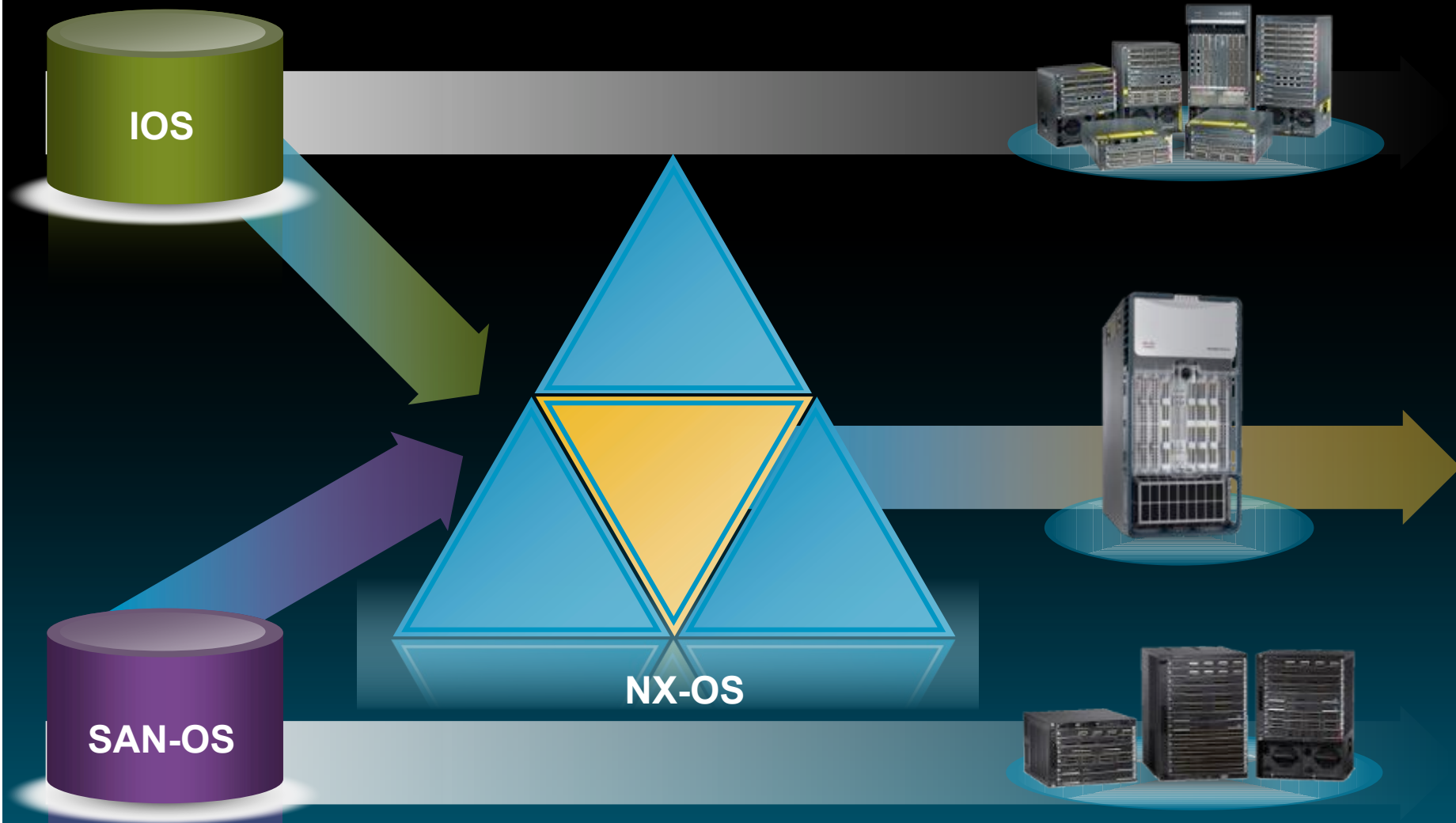
Self heals faster than networks can converge

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## **Graceful System Operations**

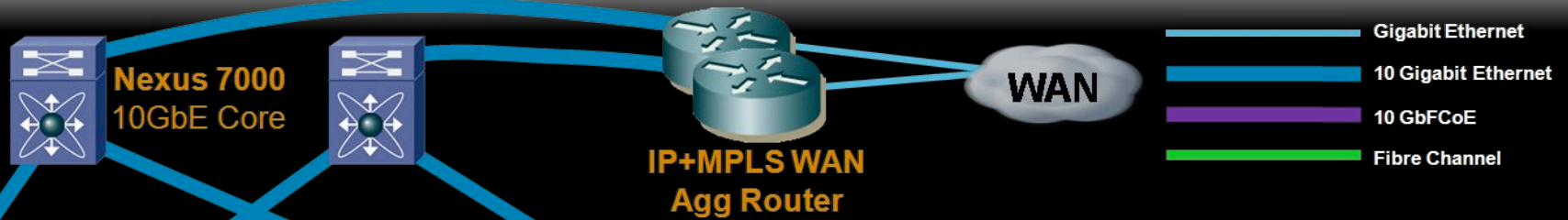
Enables simplified operations and links all protocol layers

# NX-OS: Purpose Built for the Data Center

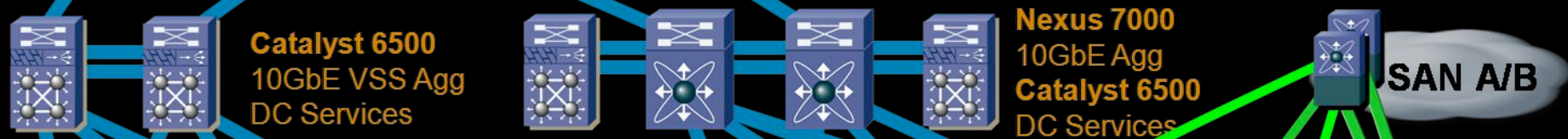


# Data Center 3.0 Infrastructure Portfolio

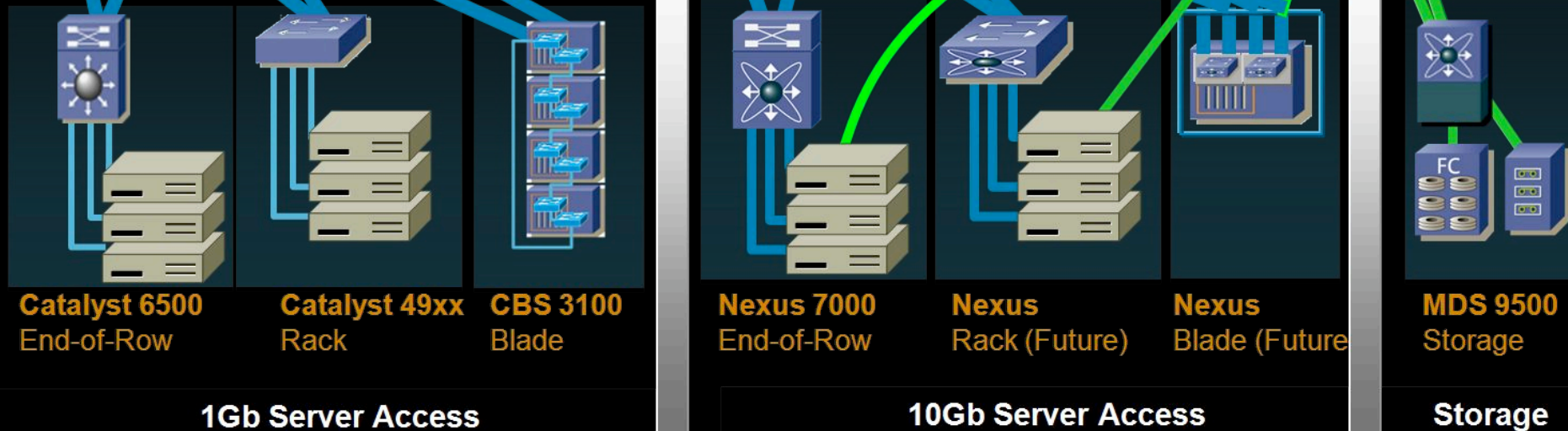
## DC Core



## DC Aggregation

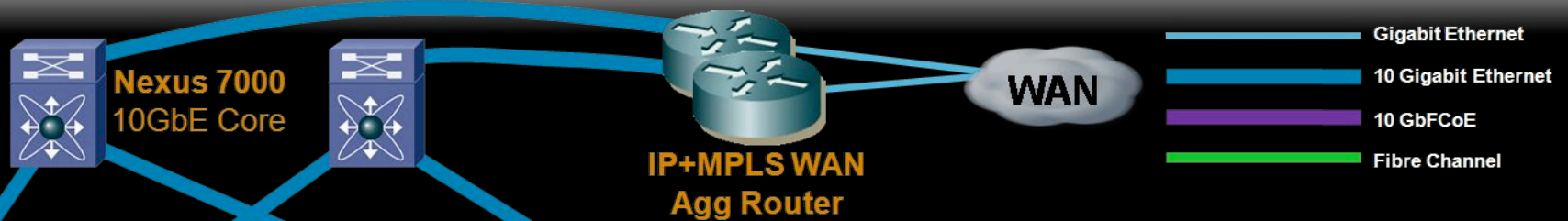


## DC Access

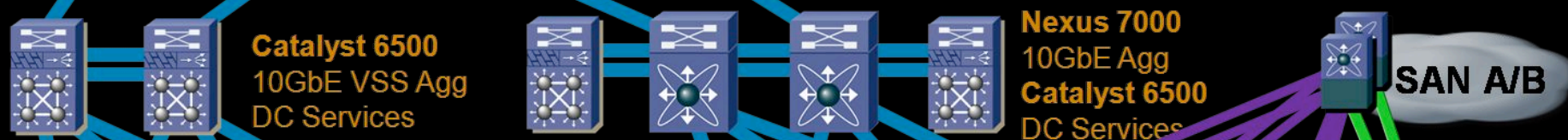


# Data Center 3.0 Infrastructure Portfolio

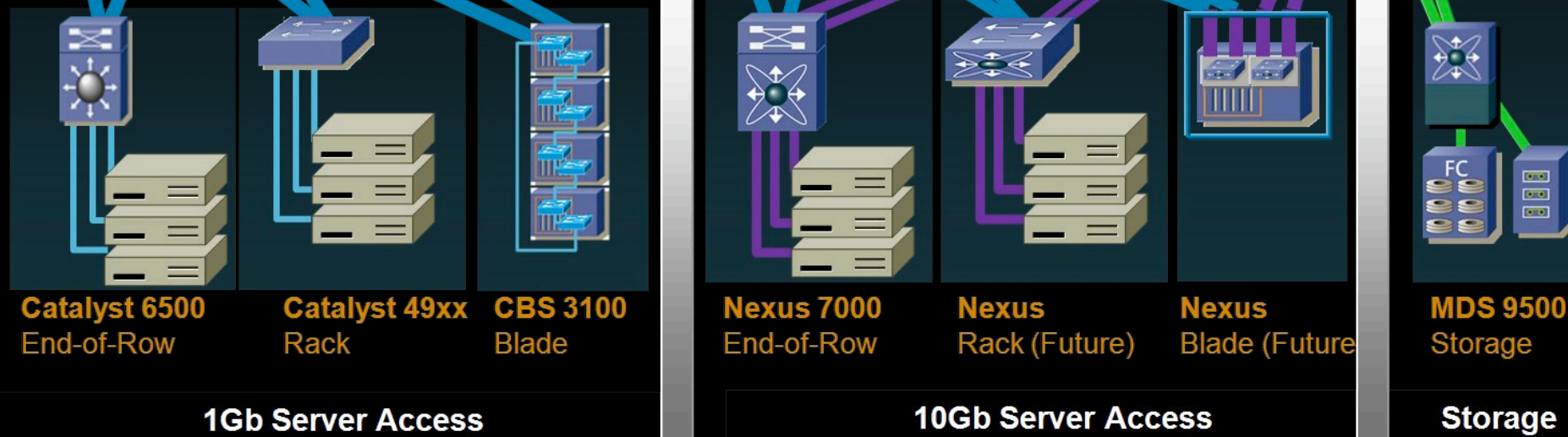
## DC Core









## DC Aggregation



## DC Access



# A Comprehensive Portfolio for Data Center 3.0

<p><b>Unified Fabric Networking</b></p>  <p><b>NEW</b></p> <p>Nexus 7000 Modular Switching System</p> <p>Nexus Rack Switch <i>(future)</i></p> <p>Nexus Blade Switch <i>(future)</i></p>	<p><b>Ethernet Networking</b></p>  <p>Catalyst® 6500 Series</p> <p><b>NEW</b></p> <p>Catalyst Top-of-Rack Switches</p> <p>Catalyst Blade Server Switches</p>	<p><b>Storage Networking</b></p>  <p>MDS 9500 Storage Directors</p> <p>SSM</p> <p>MDS Fabric Switches</p> <p>Blade Switches</p>	<p><b>Application Network Services</b></p>  <p><b>NEW</b></p> <p>ACE Application Delivery Module Appliance</p> <p>Wide-Area Application Services</p> <p>ACE XML Gateway</p>	<p><b>Infiniband Clustering</b></p>  <p>SFS 7000 Infiniband Switch</p> <p>SFS 3000 Infiniband Gateway</p>	<p><b>Data Center Security</b></p>  <p>Firewall Services Module</p>
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<p><b>Data Center Provisioning</b></p>	<p>VFrame Server/Service Provisioning System</p> 
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<p><b>Data Center Management</b></p> <p>Data Center Network Manager– Topology Visualization and Provisioning</p>	<p><b>NEW</b></p>	<p>ANM– Advanced L4-7 Services Module Management</p>
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# Summary



Cisco® Nexus is the network foundation for Data Center 3.0

Cisco is delivering on Data Center 3.0 through continuing innovation in both the Cisco Nexus and Cisco Catalyst® families

Cisco Nexus provides customers with transport flexibility, infrastructure scalability, and operational continuity

