



Brussels, Belgium
April 18th, 2013

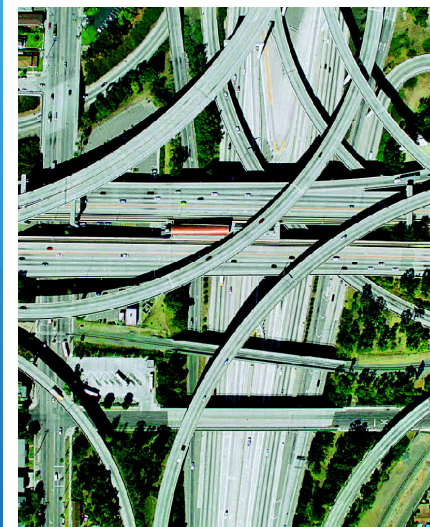
Unified Fabric



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Agenda

Cisco Unified Fabric Approach

Innovative Technologies

The Next Generation Fabric

The IT CHALLENGE

DATA CENTER **INFRASTRUCTURE** AND **ECONOMICS**

Siloed Network,
Compute, Storage
Inefficient Resources
Security Vulnerabilities
Slow, Complex, Expensive
Operations
Application Restraints



The Network Is **Front**
and **Center**

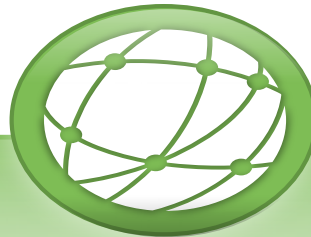
Cisco's Holistic Approach: Unified Data Center

The Platform for Delivering IT as a Service



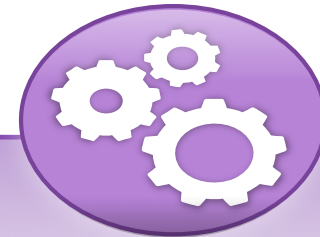
UNIFIED COMPUTING

Modular, Stateless
Computing Elements



UNIFIED FABRIC

Highly Scalable,
Secure Network Fabric



UNIFIED MANAGEMENT

Automated
Resource Management
(Physical and Virtual)

FLEXIBLE

RESILIENT

SECURE

SCALABLE

Cisco Unified Fabric

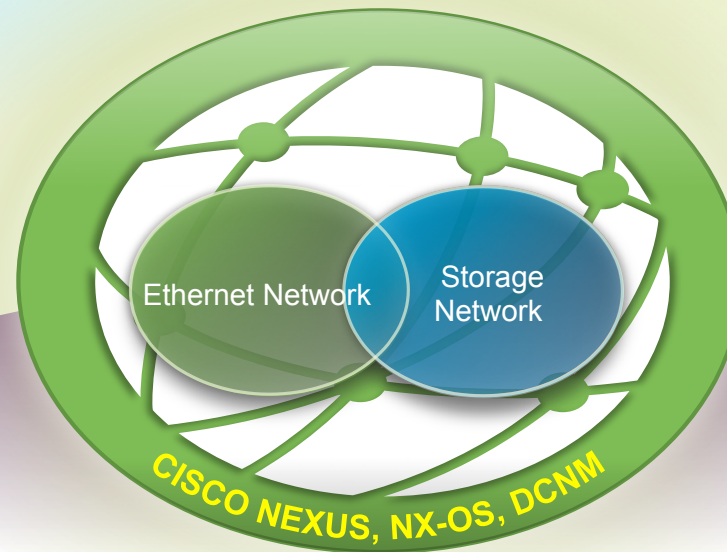
Delivering Architectural Flexibility for All Data Centers

SCALE

Resilient, High Performance
System Scale
Geographic Span

CONVERGENCE

Wire Once for LAN/SAN
Single Point of Management
for LAN/SAN
Device Consolidation



INTELLIGENCE

Seamless VM Networking
Workload Mobility

Secure Separation/Multitenancy
Integrated Application Delivery

When
the





Network Is
UNIFIED

You Get **CONSISTENCY**
Across **Physical, Virtual, and Cloud**

Cisco's Unified Fabric Portfolio



DELIVERING TO YOUR DATA CENTER NEEDS

Financial	MSDC/Cloud	Service Provider	Enterprise
 Low Latency	 Scalability	 Agile Service Delivery	 Private Cloud Automation

Introducing Cisco Nexus 6000 Series

Raising the Bar... Again!

Performance

Highest density line rate, low power per port 10G/40G Ethernet/FCoE switch in the industry!

Integrated Layer 2 and Layer 3 feature-set

First 40G FCoE Switch

Versatility

Wide range of deployment options
High density FEX aggregator
Large Scale Fabrics
Leaf-Spine Architecture

Flexibility

Configurable port speeds with true 40GE flows or 4 x 10GE flows
Modularity provides future expansion capabilities

Latency

Low Latency at scale
~ 1 microsecond latency for all ports, cut through switching



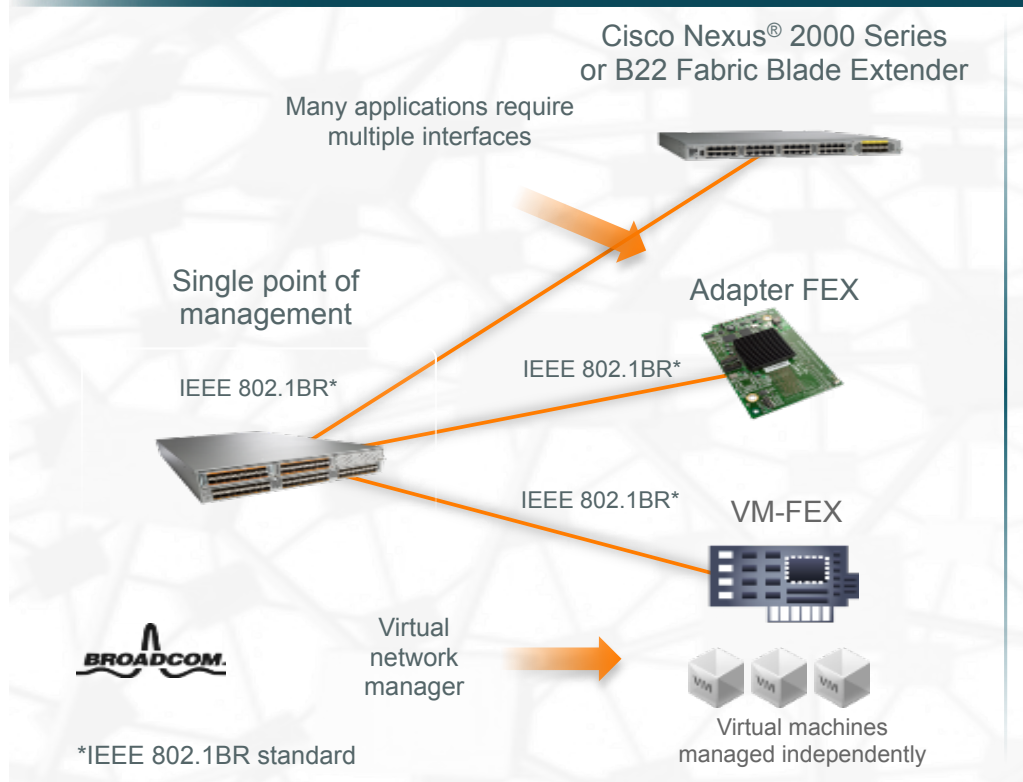
Enables High Performance Networking through Cisco Custom Silicon

Revolutionary Scale – ToR, Server, VM Fabric Extender Technology (FEX)

Scalability

Manageability

Distributed Modular System for Virtual Machine Server Partitioning



ONE NETWORK Virtual switch to physical

- Single point of policy
- Single point of management
- Reduction in cables
- Consistency across rack and blade servers
- Interoperable—standards-based

Unified Ports

Compelling Business Value

CAPEX

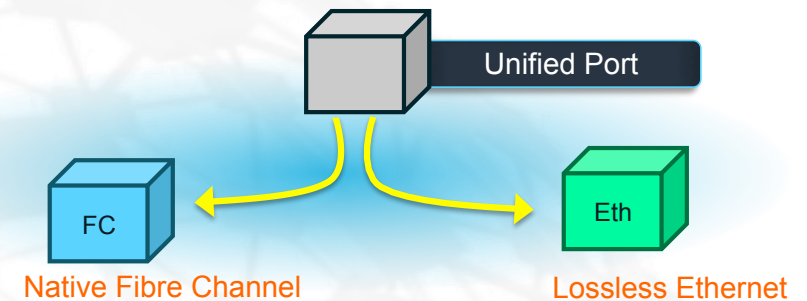
- **Allows repurposing** of any switch port as either Fibre Channel or Ethernet
- **Eliminates CAPEX lock-in** with specific port-types

OPEX

- **Reduces physical management points** with higher density Fibre Channel and Ethernet available on a common device
- Provides **rapid and seamless transition** from Fibre Channel to Fibre Channel over Ethernet

BUSINESS
AGILITY

- Simplifies the purchasing decision
- Makes port-type decisions a thing of the past
- Allows IT to respond faster to changing business needs



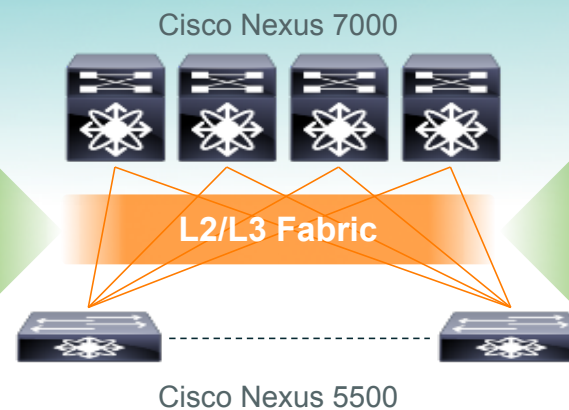
Revolutionary Systems Scale

Cisco FabricPath

Scaling Layer 2 Domains—Available on Cisco Nexus® 7000 and 5000 Series

Layer 2 Strengths

- Simple configuration
- Flexible provisioning
- Low cost



Layer 3 Strengths

- All links active
- Fast convergence
- Highly scalable

USE CASES

- Scalable virtualization pods
- Massively scalable L2 fabric
- L2 interconnect with dark fibre
- High-bandwidth HPC

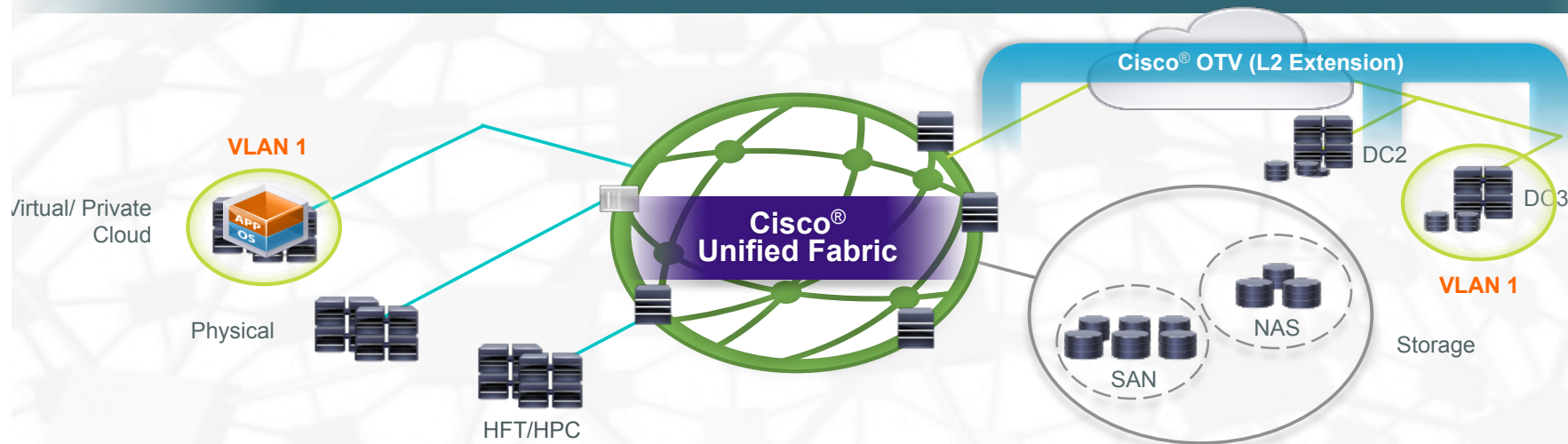
RESULTING IN

- Simplicity
- High resiliency—Eliminate Spanning Tree Protocol (STP)
- Flexibility
- Revolutionary scale—12,000+ 10 GE with Cisco® FEX

Geographic Span

Cisco Overlay Transport Virtualization—OTV

Workload Mobility Across Data Centers/Cloud—Extending L2 over Any Network



USE CASES

- Inter and intra DC connectivity—across L3
- Use all data center capacity
- Back up data center, rapid recovery
- Data center maintenance outage

RESULTING IN

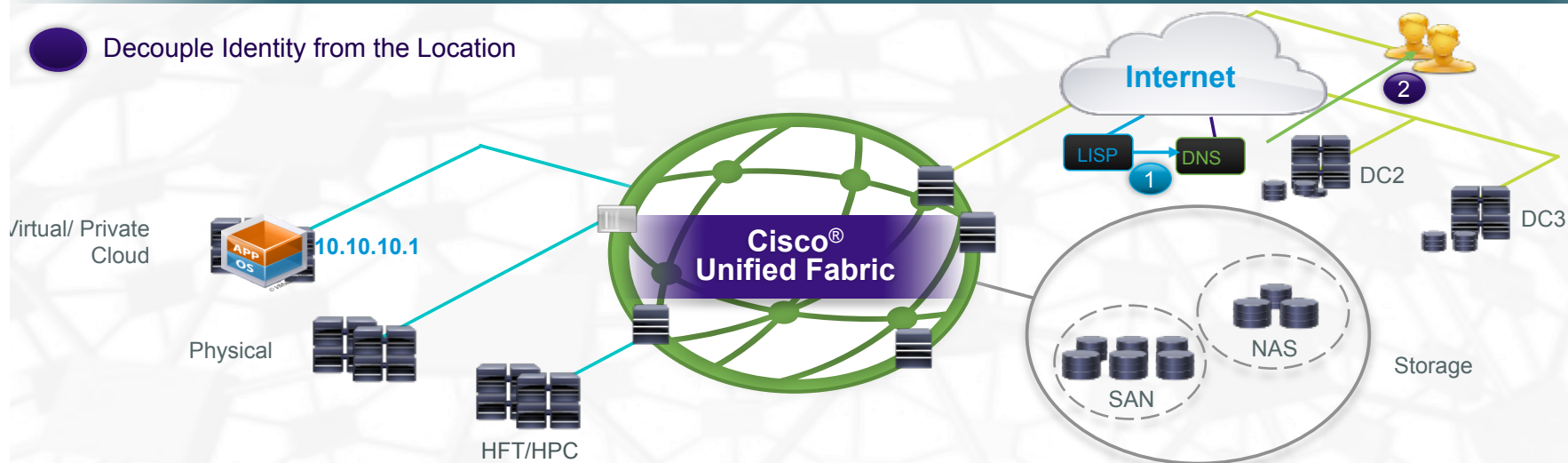
- Scalability across multiple data centers
- Seamless overlay—no network redesign required
- Single-touch site configuration
- High resiliency
- Maximized bandwidth



Geographic Span

Cisco Locator ID/Separation Protocol—LISP

Workload Mobility for Cloud—Crossing Layer 3 Boundaries

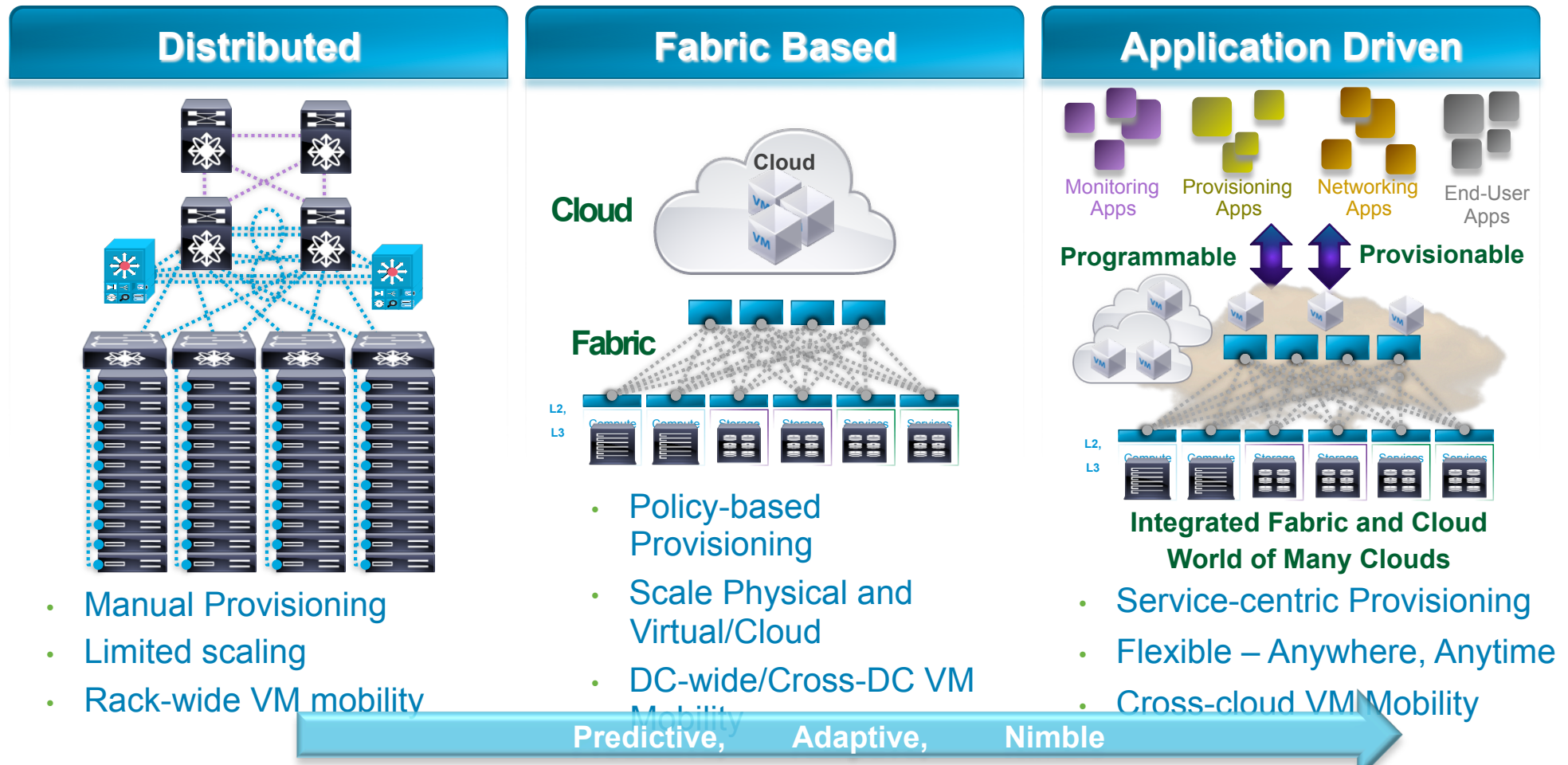


RESULTING IN

- Seamless global workload mobility across cloud
- Inter- and intra-data center IP mobility
- Network scalability, secure multitenancy
- Simplified IPv6 transition



Cisco Data Center Evolution



Why a Fabric-based approach?

Large scale control plane with Fast convergence

Distributed Control Plane

Deterministic latency at Line Rate in a Highly redundant fabric

Hybrid Fabric

Combination of Virtual and Physical

Converged Infrastructure

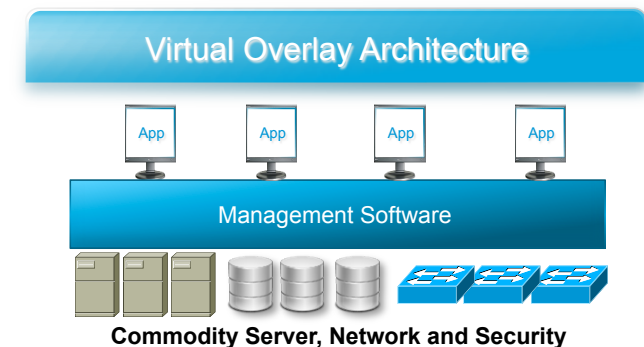
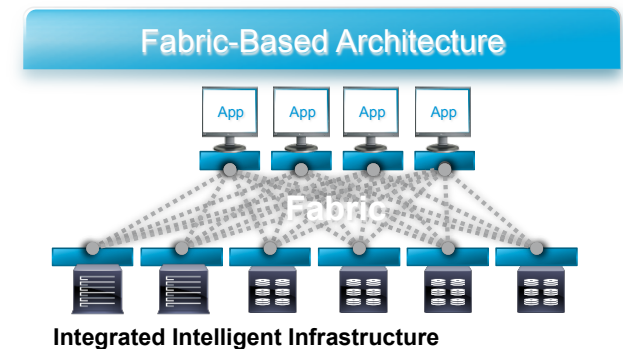
L3 mobility services

Connects the overlay to the rest of the network while enabling mobility

Overlay Normalization role of a switch as a multi-overlay router

Reminiscent of the multi-protocol router

Etc...



Cisco's Next Generation Fabric : Customer Requirements

Workload Automation

- Improve workload rollout
- Dynamic Network configuration (PM/VM)
- Orchestrate Services along PM and VM

Optimized Network

- Small failure domains and N+1 redundancy
- Any workload anywhere
- Extensible and flexible arbitrary topology

Open Data Center Infrastructure

- Northbound API's to orchestrators and automation tools
- Central Point of Management (single Fabric view / query functions)
- Push down model for Network Controllers (onePK)

Multitenant environments

- Isolate Tenant traffic in a secure way
- Tenant visibility (vxlan)

Cisco Next Generation Fabric

Operational Simplicity

Orchestration & Integrated Mgmt

Central Point of Management

Programmatic API

Scripting Capabilities

Extensible & Flexible Topologies

Classic, Clos, Rings

Scalable

40G & 100G ready

Fabric Attributes

High HA & Small failure domains.

Low Latency & High Performance

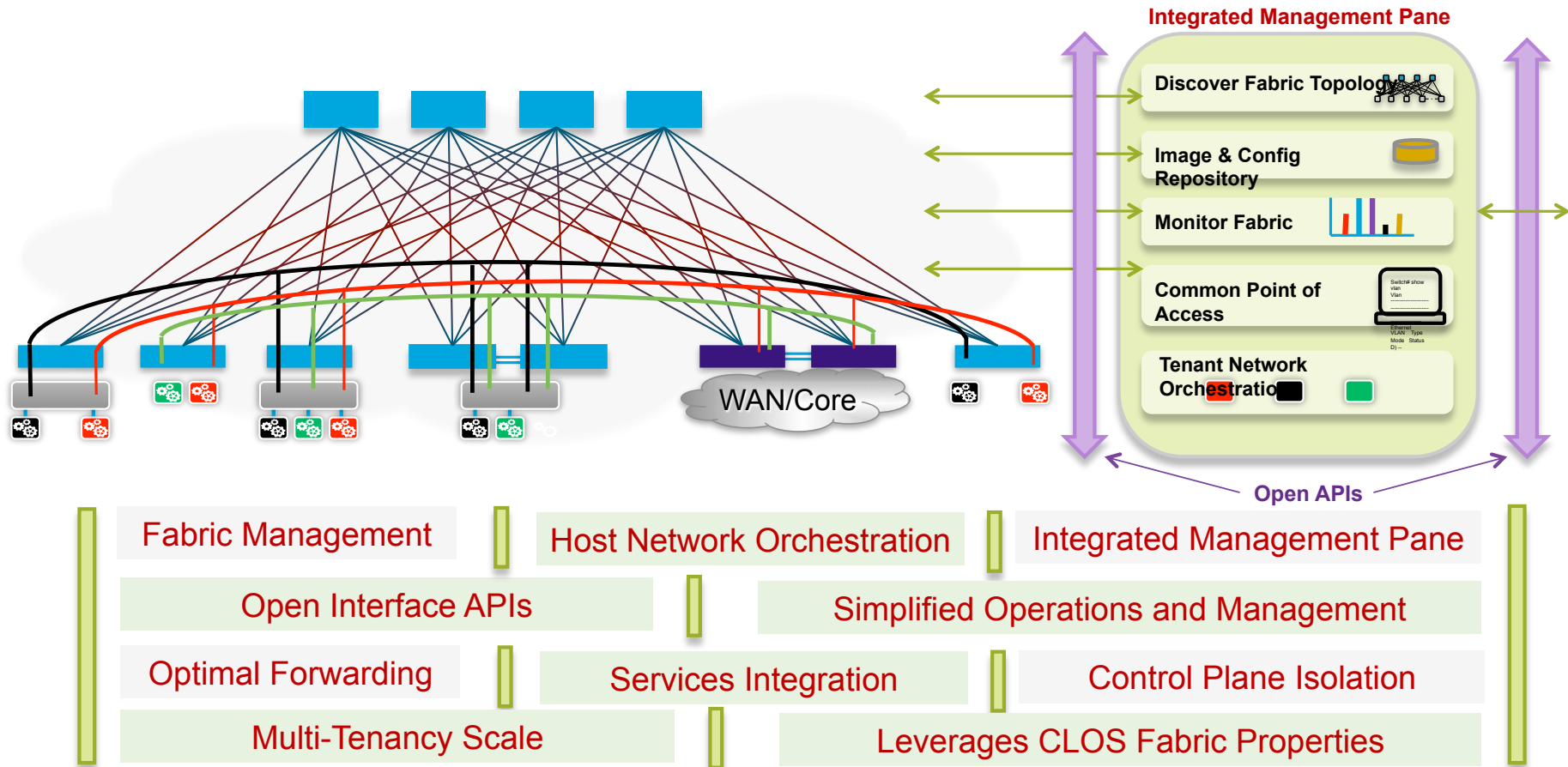
Integrated Virt & Overlays

Multi-Tenant

Integrated Services

Consistency across Physical, Virtual, Cloud

Cisco Next Gen Fabric: Delivering Value



The Unified Fabric is the foundation of the Data Center

Build-in Management

Policy Based Provisioning

Application driven Services

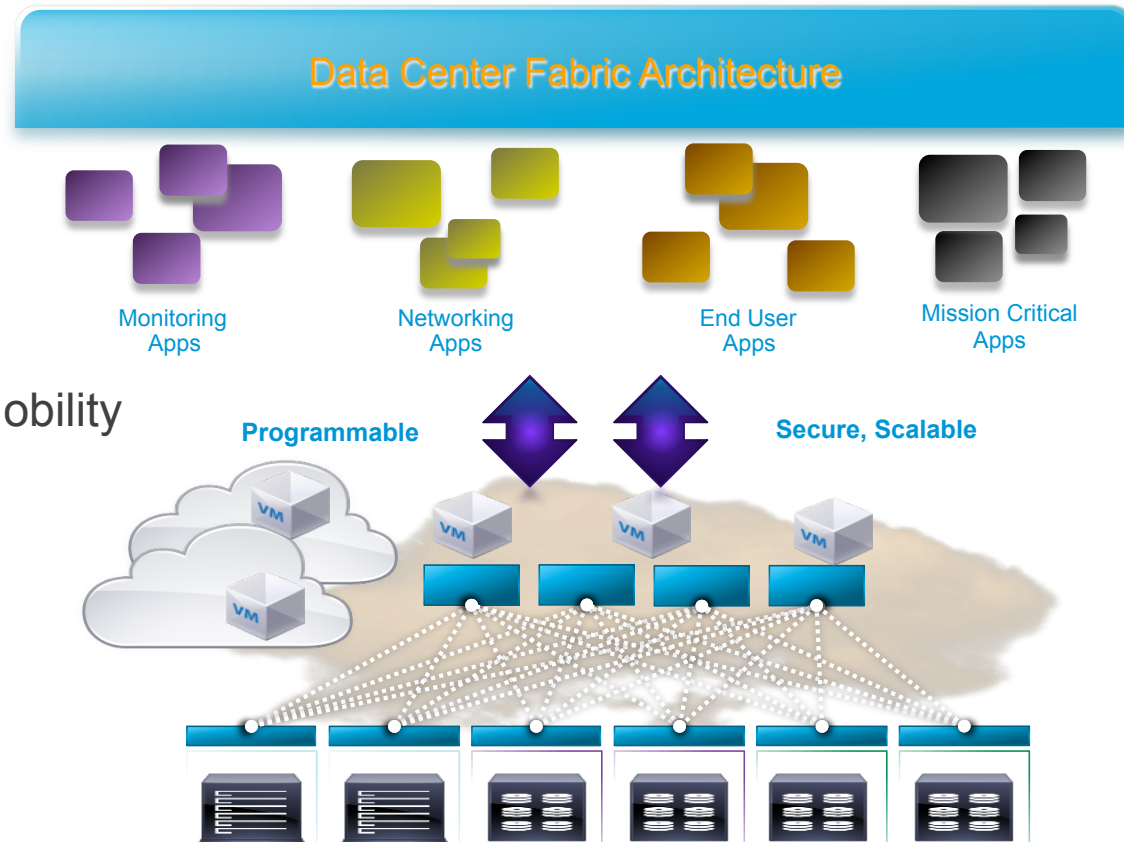
Workload Automation

Any Workload Anywhere -> VM Mobility

Global Scalable

Intercloud Workload mobility

Open DC infrastructure



We can propose you

To test Nexus 1000v, VSG, UCS Manager, Nexus 7000, OTV, VXLAN,...

Request your CLOUDLAB account <http://cloudlab.cisco.com>

Mention javanden@cisco.com as sponsor

To check our DC Belux public references case: Rossel, Barco, NRB, SMALS, Subaru, Nova Natie, ...

<http://www.scoop.it/t/cisco-data-center-belux-references/>

And to visit our DC booth to get a private demo:

Orchestration in the Data Center with **Cloupia**

Unified Computing with **UCS**

Extend you UCS domain to multiple DC's with **UCS Central**

Simplify a virtual deployment with **Nexus-1000v, Adapter-Fex and VM-Fex**

Build a Unified Fabric with **FCOE**

Extend Applications across two physical Data Centers with **OTV**

Thank you.

