

**GOODBYE
STATUS
QUO.**

**HELLO
BROCADE.**

**Brocade Ethernet Fabric
Hype oder Realität?**

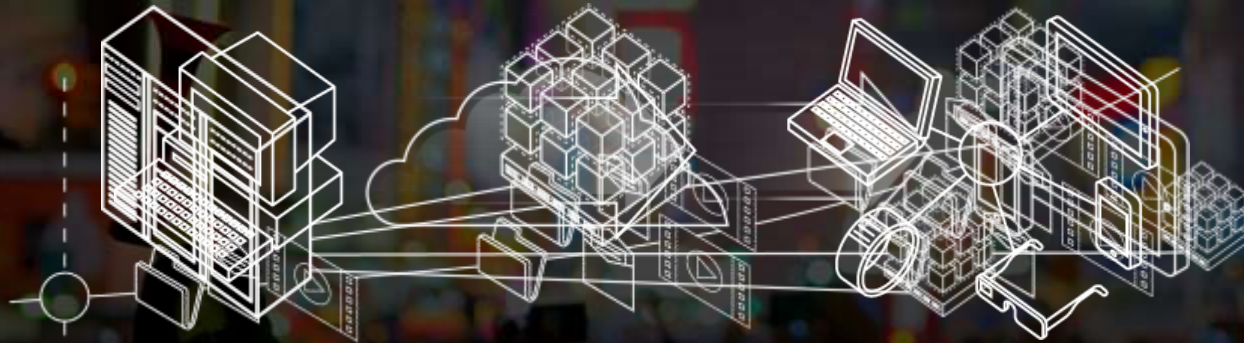
Achim Schäfer

Advanced Data Center Architectures EMEA

Nürnberg, 8. Oktober 2014



THE WORLD HAS CHANGED.

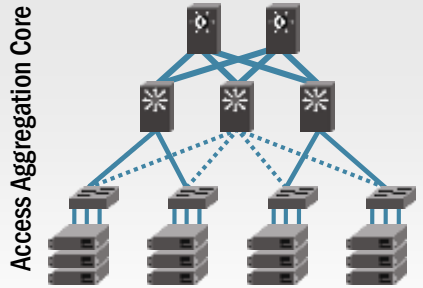


Server and mobile devices play together with multiple devices



The Burden of many many many years

Classic Hierarchical Architecture



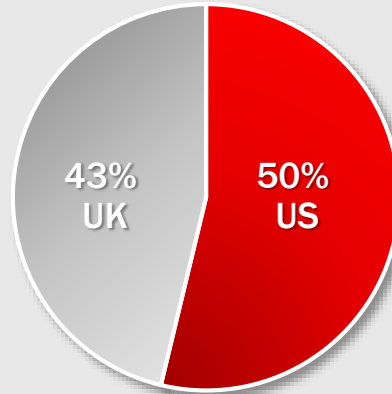
Quelle: http://www.kicker.de/news/fussball/wm-qual/528452/artikel_Spielt-Initiate-Hitfeld-er-Debut.html

- Rigid architecture, north-south optimized
 - Inefficient link utilization
 - Individually managed switches
 - High error potential Network configuration
 - Scale-up NO scale-out
 - VM-ignorant
 - **Storage ignorant**
- Virtual Machines (VMs) are easily deployed or modified via the Hypervisor Controller. **But how does the Network follow these changes?**
 - Storage performance, agility, flexibility and stability depend on **a non storage purpose built IP scale-up Network**

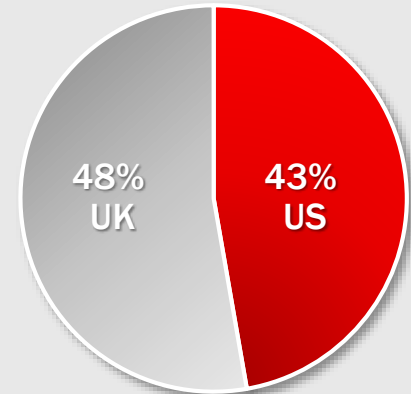
The Burden of Complexity



What are the biggest challenges your IT organization expects to face in managing the network over the next two years?



Increased Network
COMPLEXITY



Increased COMPLEXITY of
Network Management

Source: Network World 2013



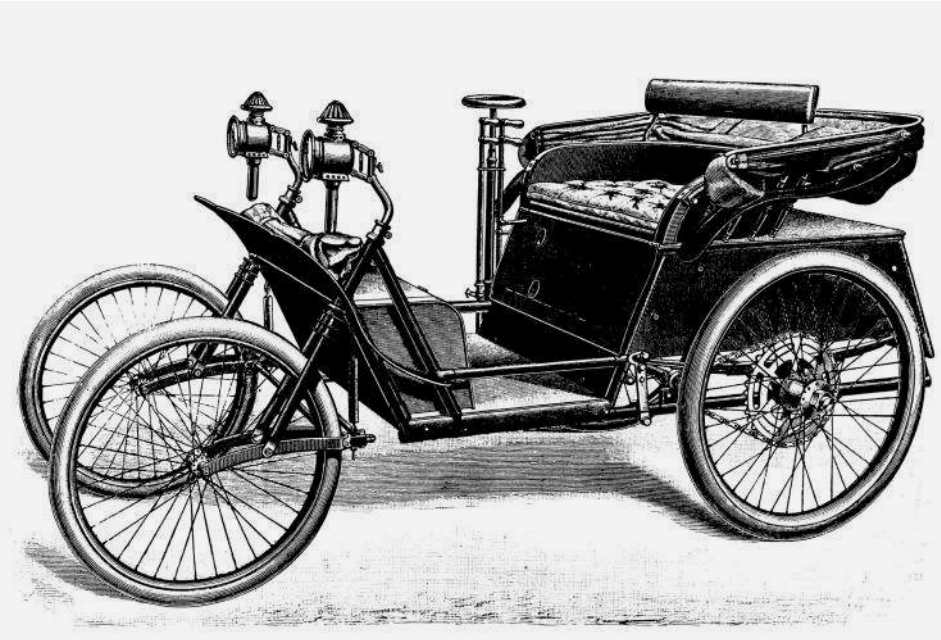
**THE WORLD HAS CHANGED.
BUT THE NETWORK HASN'T.**



Ethernet Fabrics

“If I had asked my customers what they wanted they would have said a faster horse.”

Henry Ford



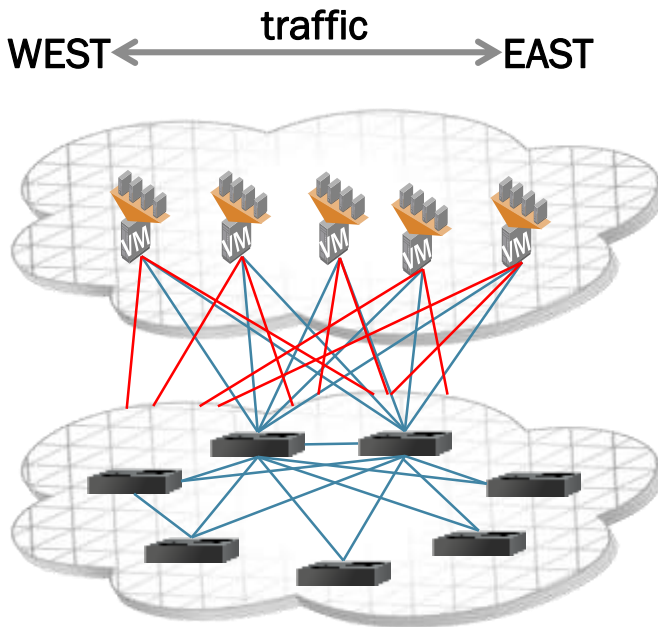
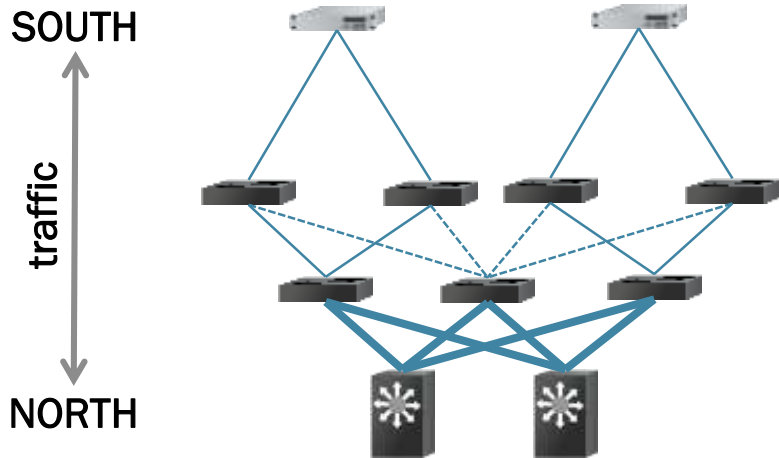
Change the future

Or do you want to stick in the past?



Change the future

Or do you want to stick in the past?





The Physical Network in a Cloud Data Center



Ethernet Fabrics a better way



Data Center Fabrics

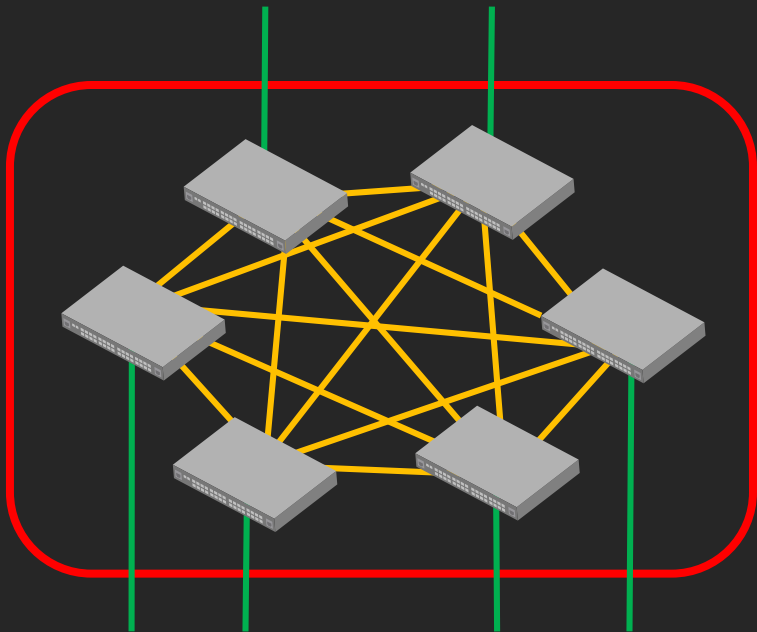
A FABRIC BY ANY OTHER NAME STILL SPELLS BROCADE



A fabric ensures any node can reach any other node with minimum switch hops, all inter-switch links are actively able to carry traffic, the shortest path is selected automatically without manual configuration, and multiple links automatically create load-balanced trunks at the frame level



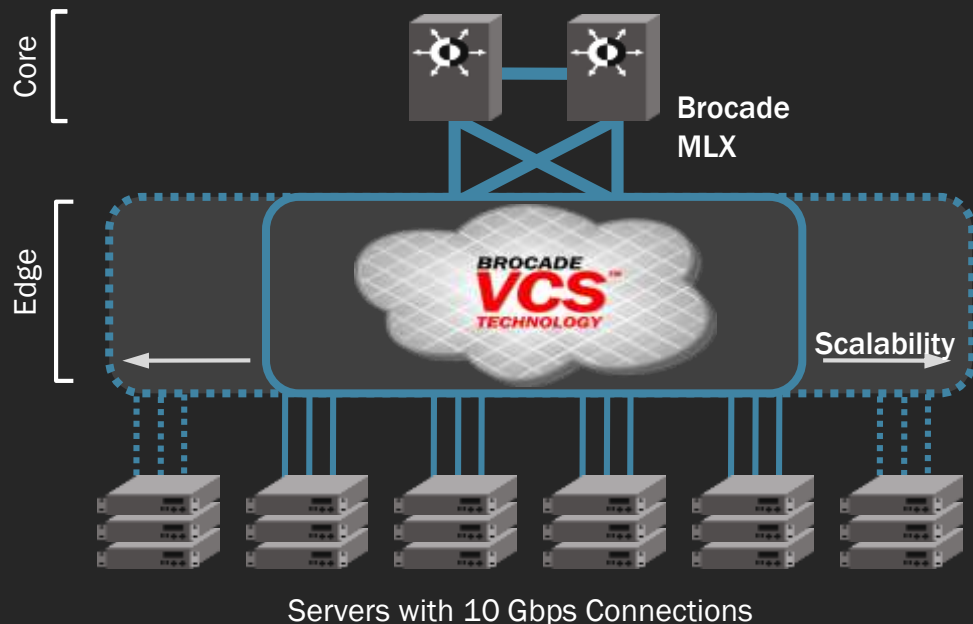
Fabric Principle



- a group of specialized switches form a cluster (fabric)
- links between fabric switches are called Inter Switch Links (ISLs)
- inside the fabric a specialized protocol or encapsulation can be used (e.g. TRILL)
- standard compliance is (only) important on edge ports



Ethernet Fabric

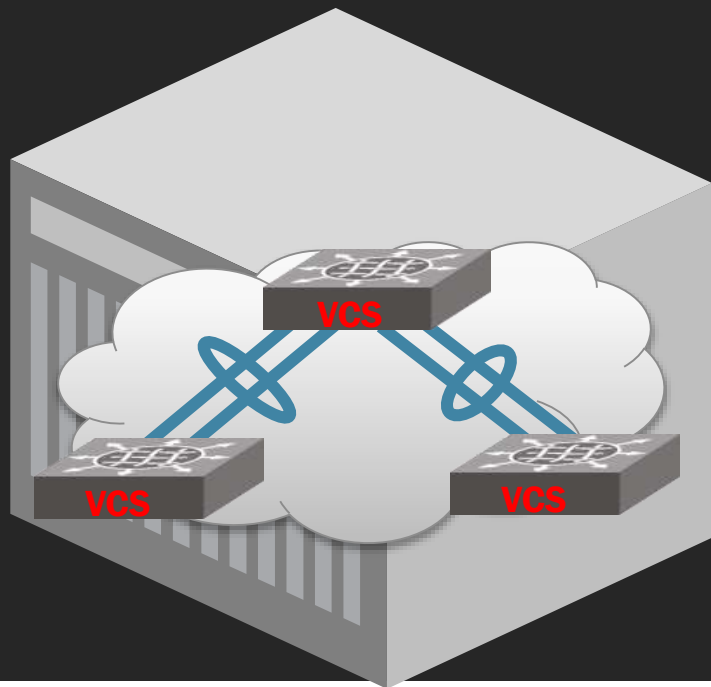


- provides multipathing on L1, L2 and L3
- good for East-West
- avoids STP
- multipathing provides active/active protection
- enables flat network architectures



Selfforming, Selfhealing, Logical Chassis

Auto-Configuration

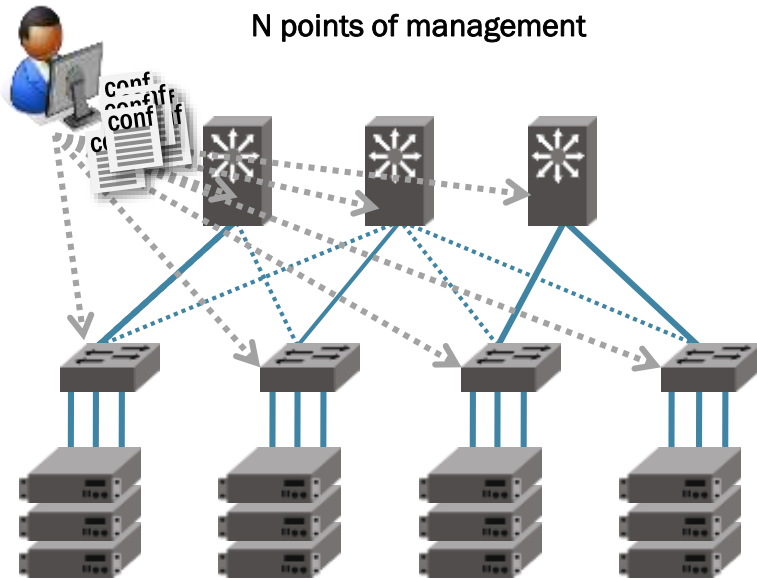


- VCS simplifies deployment, scalability and management of the network
- Enable VCS on each switch
- Connect the switches
- ISLs automatically get active
- Fabric automatically forms
 - Auto-configure DCB, TRILL, LAGs, ...

Challenge Operational Complexity

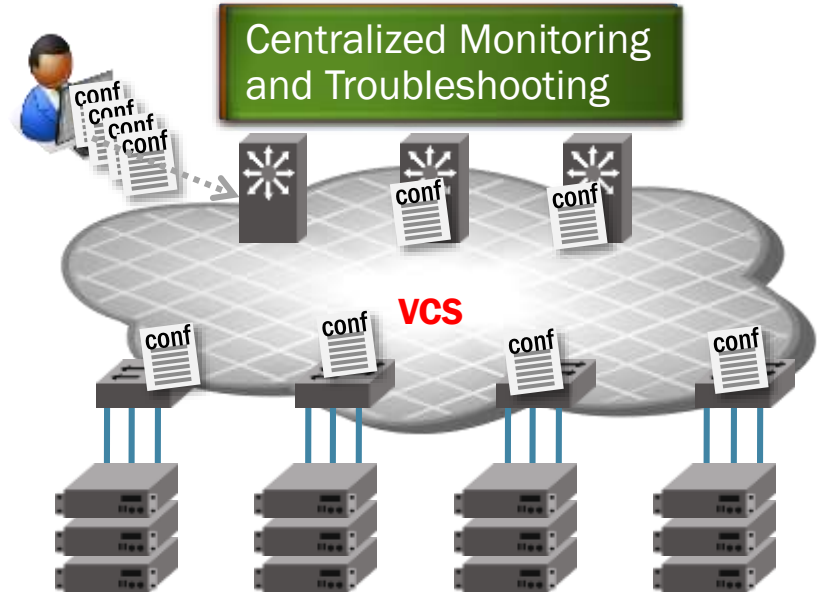
Solution : Logical Chassis Management

Traditional Management



ADMINISTRATIVE COST & COMPLEXITY
INCREASES WITH DATA CENTER SCALE

VCS Logical Chassis Management



ADMINISTRATIVE COST REMAINS RELATIVELY
FLAT WITH DATA CENTER SCALE



NEXT GEN DATACENTERS



Data Center Fabrics



Summary

May 21 22 23 24 25
June 21 22 23 24 25
July



55



10



34

Total Global Effort
44hrs

Operational Cost

All Events

- New Deployment
- Expansion
- New Application
- Security update
- Virtual Mobility

70%



380



69



89

Total Global Effort
158hrs

Operational Cost






**DON'T ASK WHAT YOU CAN AUTOMATE
IN THE NETWORK**

**ASK WHAT THE NETWORK CAN
AUTOMATE FOR YOU!**

Automation \neq Scripting



Brocade Ethernet Fabrics - Benefits

Automated 	Efficient 	Cloud-Optimized 
<ul style="list-style-type: none">• Zero-touch VM discovery, configuration, and mobility• No configuration to add links or switches• Fabric managed as single logical device <p>10x less time to deploy network capacity</p>	<ul style="list-style-type: none">• All links fully active none on standby• Multipathing at all layers of the network• IP storage-aware (Auto-NAS) <p>2x greater network utilization</p>	<ul style="list-style-type: none">• Native multitenancy with Virtual Fabrics• Scale out non-disruptively• Orchestration through Open APIs and OpenStack <p>Faster time to tenant deployment, lower cost</p>



**IT'S TIME TO SAY GOODBYE
TO THE STATUS QUO.**

GOODBYE
STATUS
QUO.

HELLO
BROCADE.

... weiter geht es mit

Flash im Vorwärtsdrang

Roland Kurz (Speicherwerke AG)