

Data Center Network

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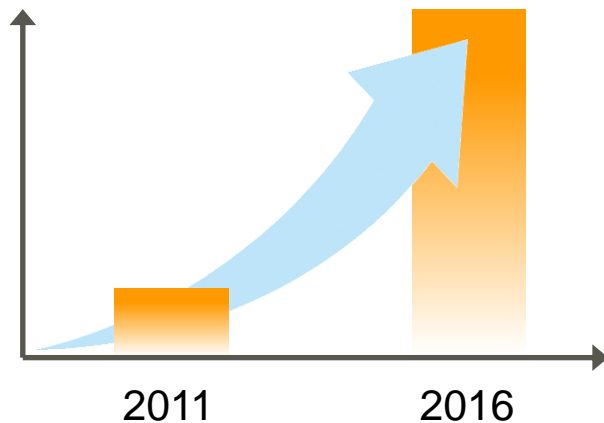
System Platform Laboratory

Fujitsu Laboratories Limited

- Increasing traffic & virtualization trends

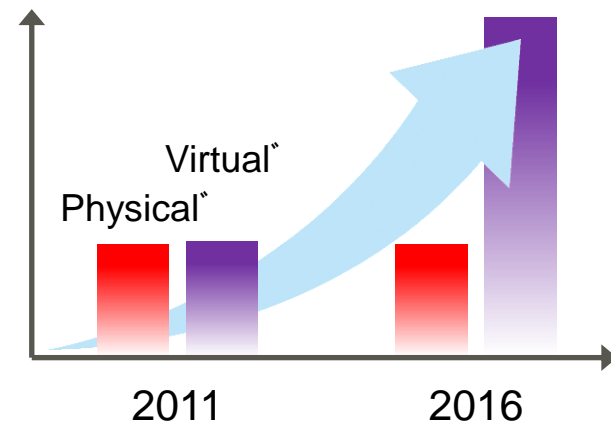
Traffic Amount

- CAGR 30% (for 2011–2016)



Virtual Servers

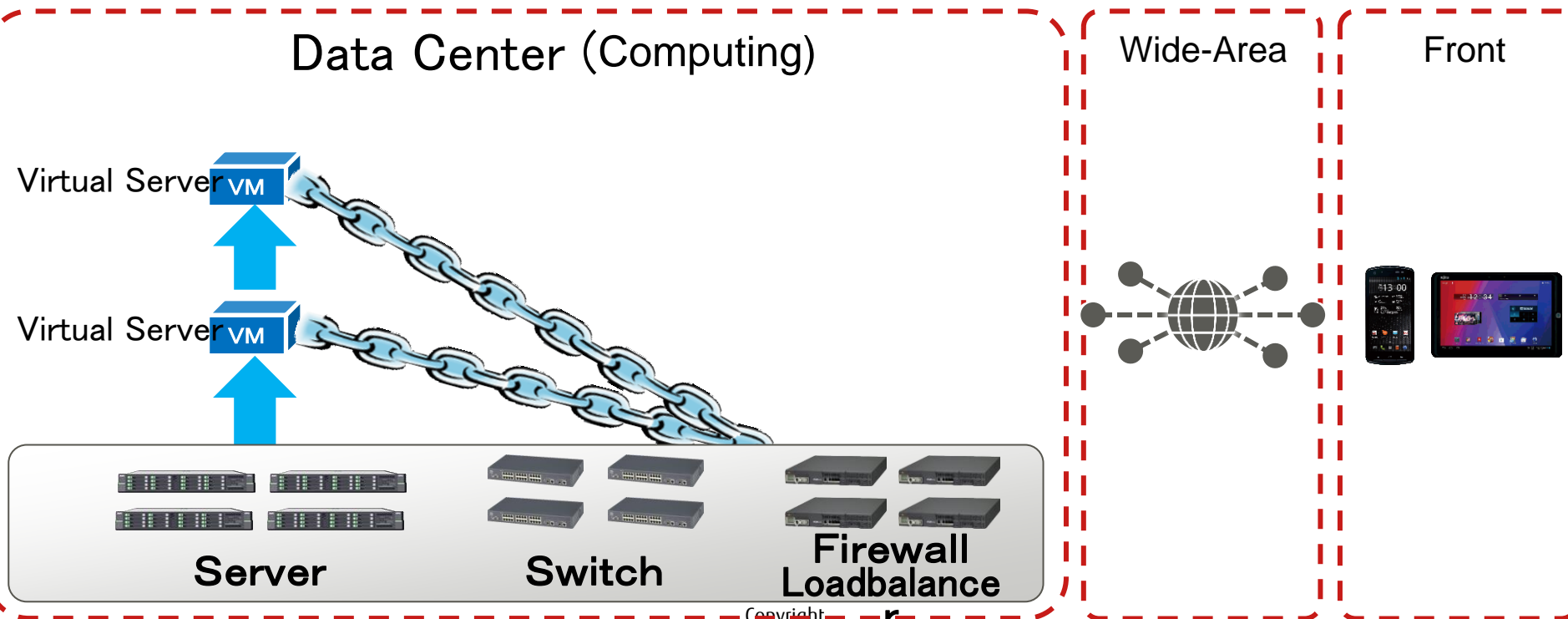
- # of virtual servers is three times bigger than that of physical servers



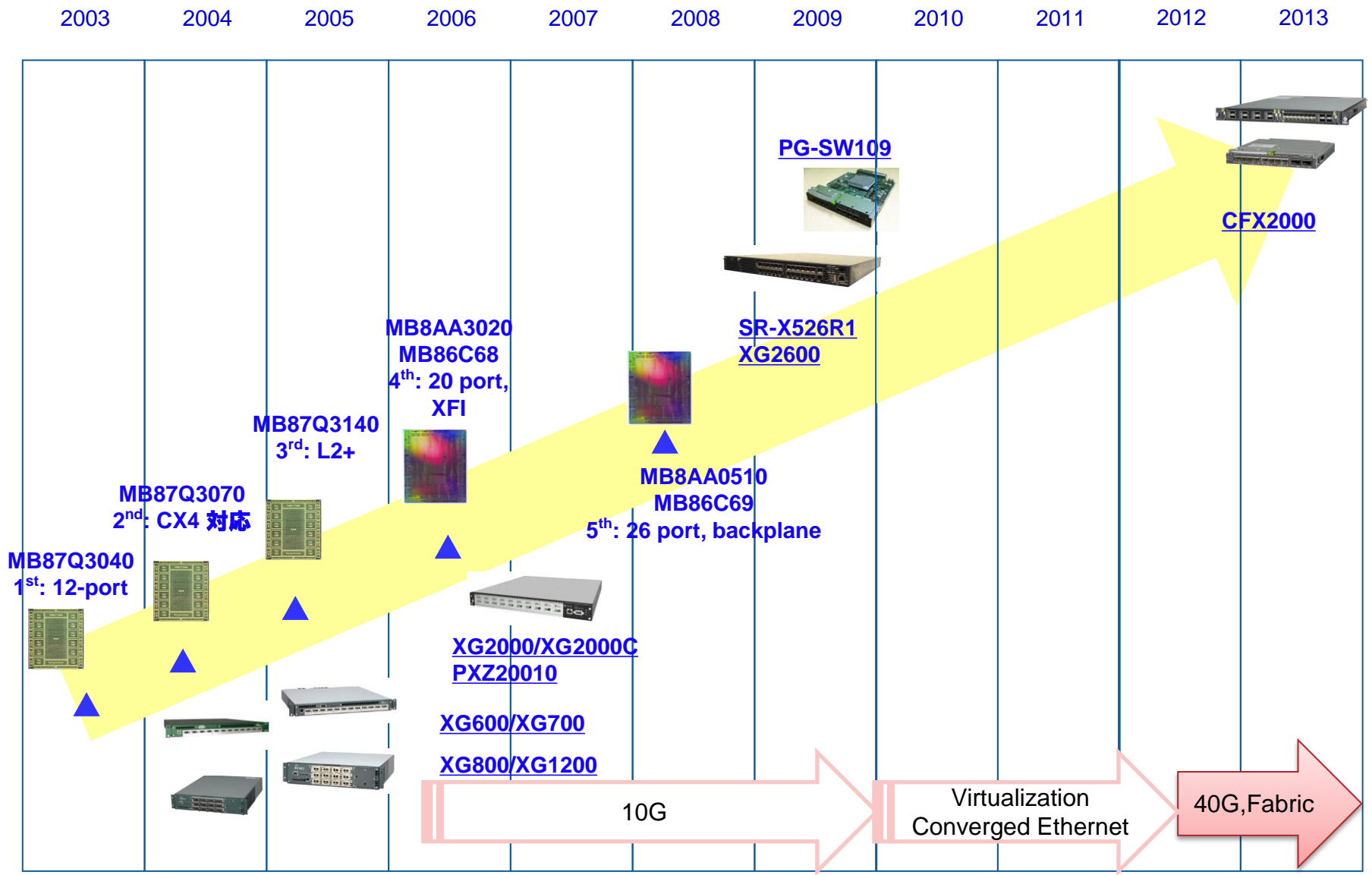
Virtualized Infrastructure

Virtual Servers makes network configuration & management complicated

- Initial setup
- Reconfiguration for VM deployment and migration.



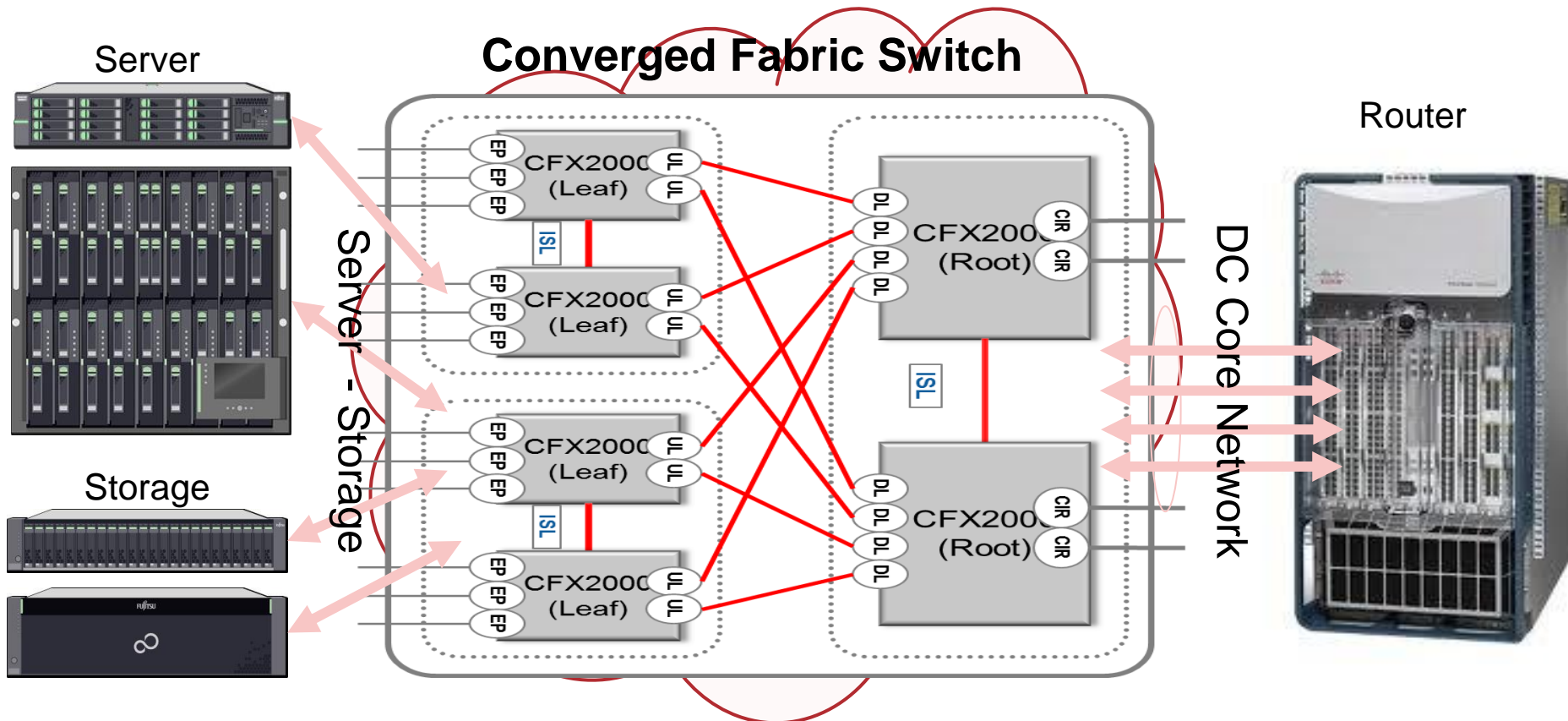
Ethernet SW Development in Fujitsu Lab



Converged Fabric Switch (1)

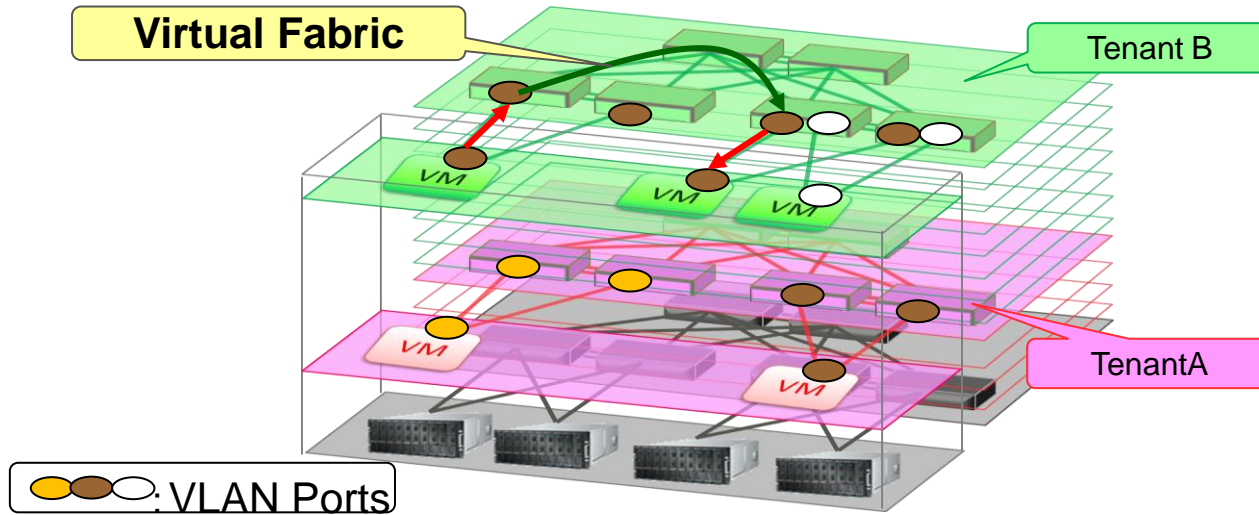
High Speed, Large Capacity Ethernet Fabric

- Mesh connections between switches, with redundancy
- Multi-Chassis Link Aggregation

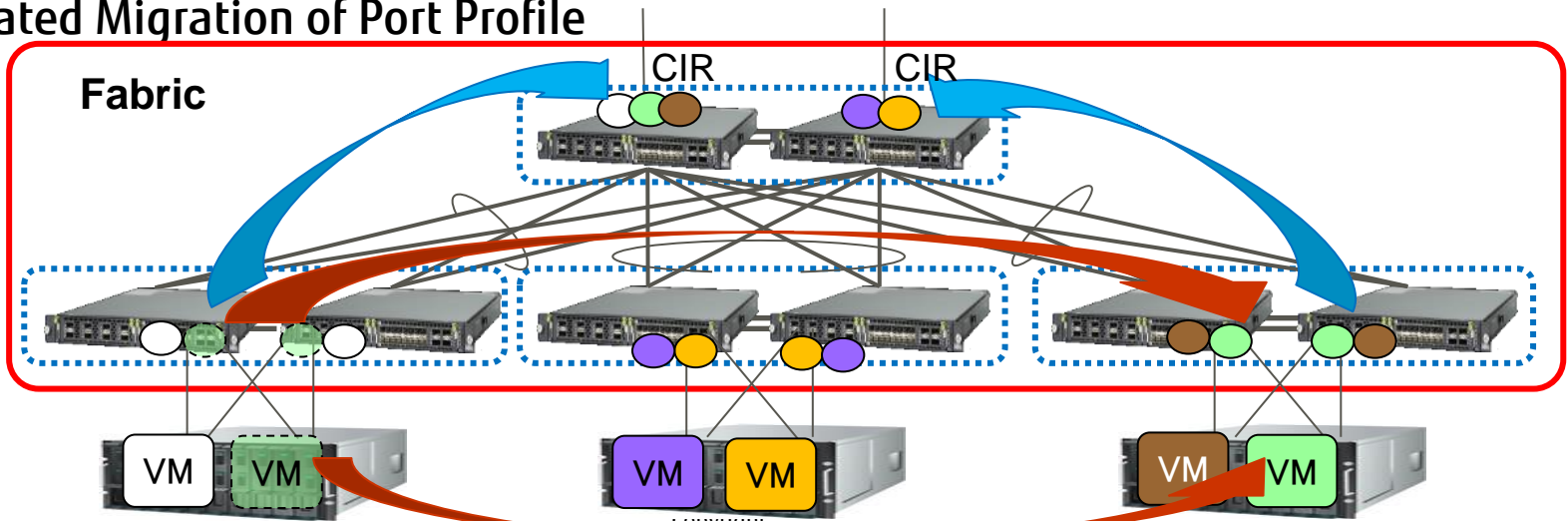


Converged Fabric Switch (2)

Virtual Fabric for slicing (multi-tenancy)

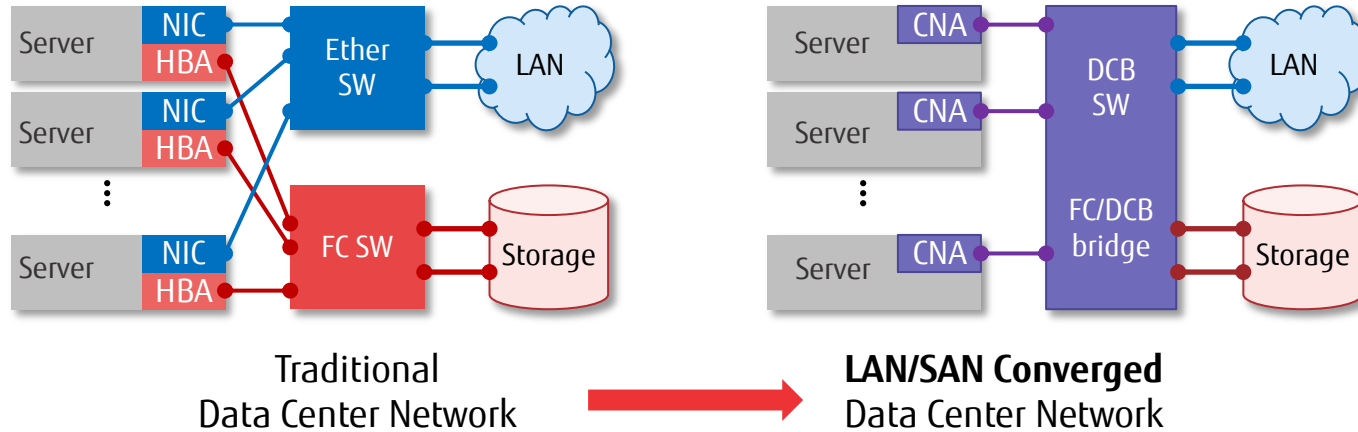


Automated Migration of Port Profile



Fibre Channel over Ethernet (FCoE)

■ FCoE consolidates traditionally separated LAN and SAN into single network



■ Effects

- Reduce the number of switches, adapters, and cables
- Simplify network management

FCoE: Fibre Channel over Ethernet
FC: Fibre Channel
SAN: Storage Area Network
HBA: Host Bus Adapter
CNA: Converged Network Adapter

■ Converged Fabric (C-Fabric) switch supports FCoE



Exhibit-6: Storage Flow Operations using SDN

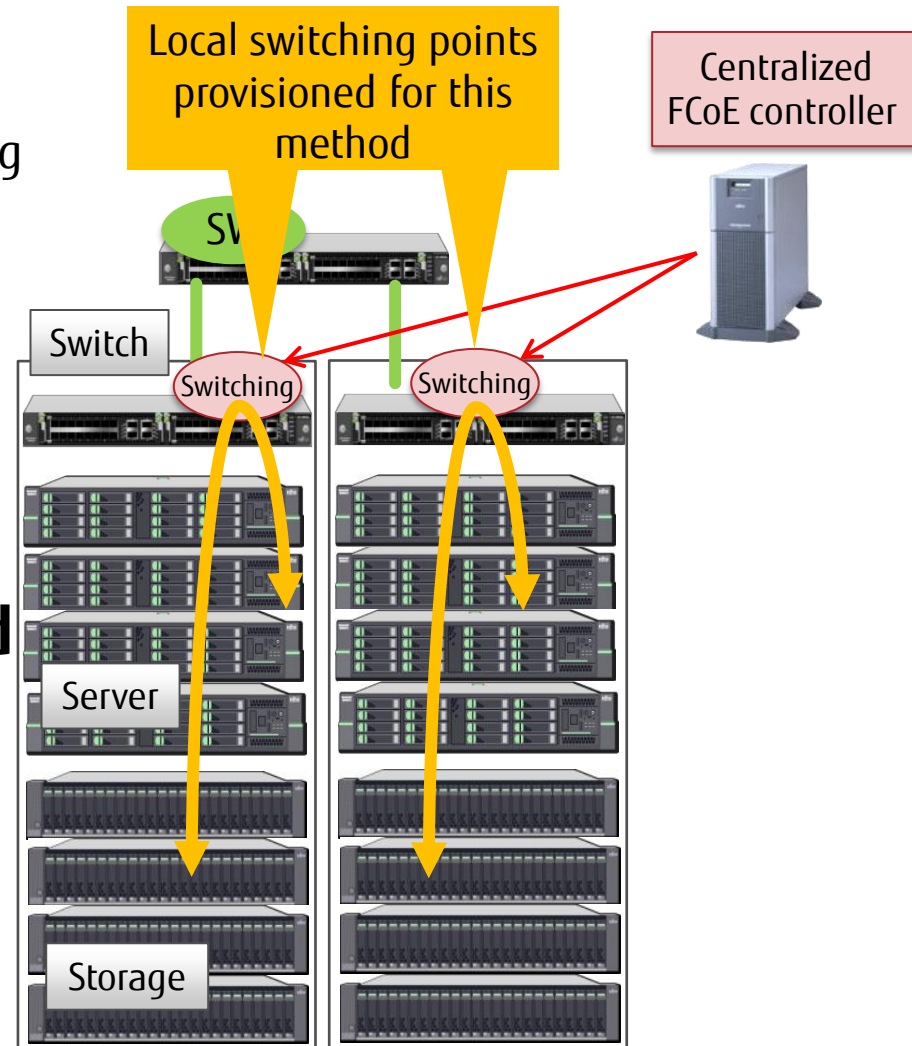
■ Extract required features for FCoE switching

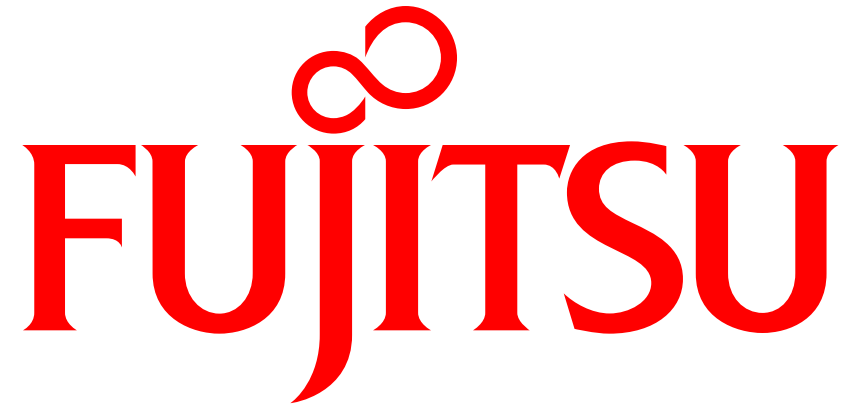
- FCoE Initialization Protocol (FIP) monitoring
 - Detects fabric login from servers and storages
- FCoE packets detection, modification and forwarding

■ Implement features for controlling storage flows using SDN on switches near servers and storages

- Switching mechanisms and an interface (API)

■ Operate from centralized controller





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