Deep Dive the New Catalyst 6840-X

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Our Speakers

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Agenda

Switch Market Update

Catalyst Backbone Update

Catalyst 6840-X

Catalyst 6800 Roadmap

Summary & Resources

Switch Market Update

Digital Transformation of Business
Requires Network Expansion to Increase Scale & Launch New Services

| Workforce Experience | Customer Experience | Infrastructure Solutions | Business Operations | Operational Technology | Security & Compliance |

Digital Transformation is Challenging

IP Display/DMS **Printer** **IP Camera** **LED Lights** **AP** **PC/Laptop** **IP Phone**

How do you support new **PoE devices** efficiently?

How do you make it easy to **provision** & **scale**?

How do you **reduce wiring** & **cable costs**?

How do you ensure secure **network access**?

How do you adapt to new **connectivity requirements**?

Catalyst Innovations from Access to Backbone

New Switches for Workspaces, Hospitality, Retail & More

New Catalyst 3560-CX & 2960-CX Compact Switches

New Multigigabit Switches for 802.11ac Wave 2

New 4500E, 3850 & 3560-CX Switches

Doubling the 10G Density with Uncompromised Services & Security for Faster Backbone

New line cards Catalyst 6800

Simple:
Easy to use with flexible deployment models

Smart:
To prepare you for new technologies

Secure:
your existing backbone investments into the future

Catalyst Backbone Update

Catalyst 6800 Series Leads the Industry

6807-XL

6880-X

6840-X

6800 IA

Next Generation
Campus Backbone Portfolio

Architectural Solution
Leverage Aggressive Services & Bundle Pricing

Nonstop Innovation
Strong Hardware & Software Roadmap

Catalyst 6000 Series is Here to Stay
The Momentum Continues
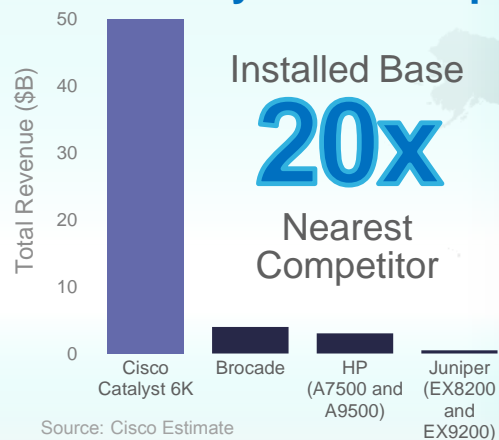
| Catalyst 6000 & the Competition | Catalyst 6000 is Everywhere | Catalyst 6800 Momentum |

Cisco Catalyst 6000 Series Industry Leadership

Installed Base

20x

Nearest Competitor

Total Revenue ($B)

50
40
30
20
10
0

Cisco Catalyst 6K | Brocade | HP (A7500 and A9500) | Juniper (EX8200 and EX9200)

Source: Cisco Estimate

800,000+
Chassis Shipped

110 Million+
Ports Shipped

45,000+
Cisco Catalyst 6500 Customers Worldwide

7,500+ Unique
6800 Customers Worldwide and Counting!

700+ Unique
Instant Access Deployment!

Catalyst Backbone Portfolio

FIXED

MODULAR(*)

Features

Catalyst 3850
1G Fiber

12/24p 1G
1RU Aggregation

Catalyst 3850
10G Fiber

FCS Q215

12p/24p/48p 10G
1RU Aggregation

Catalyst 4500-X

16p/32p 1 RU
10GE Aggregation

Catalyst 6880-X

Up to 80 10G Ports
5 RU Core

Catalyst C6840-X

Up to 40 10G Ports

2RU, NG
Backbone

Catalyst 6807-XL/6500-E

- Comprehensive
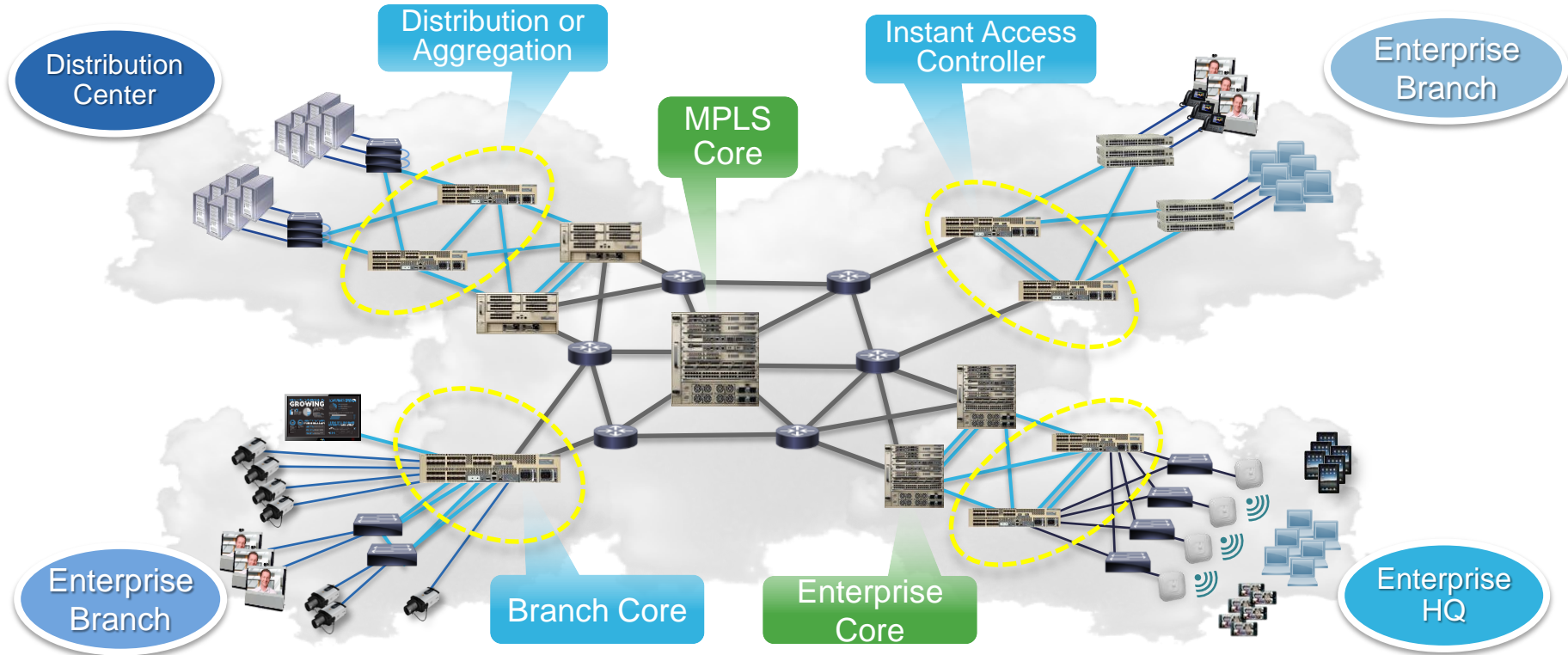- Borderless Feature Set
- Highest Performance and Scalability
- Lower TCO

Industry-Leading Campus
Backbone Platform

Scale

Building Comprehensive Campus Networks
Catalyst 6800 Flexible Core & Distribution Options

Distribution Center

Distribution or Aggregation

MPLS Core

Instant Access Controller

Enterprise Branch

Enterprise Branch

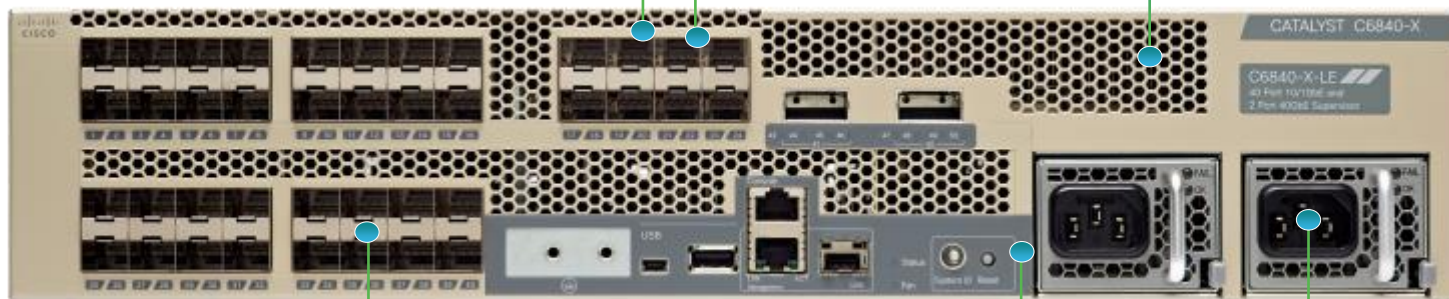Branch Core

Enterprise Core

Enterprise HQ

Catalyst 6840-X

Introducing Catalyst 6840-X

Up to 40 ports of SFP+, up to 12 ports of QSFP 10/100/1000M GLC-T 1G SFP, 100M FX

256K IPV4 Route
1.5M Netflow

Up to 2 x 40G QSFP Uplinks Breakout to 4 x 10G SFP/SFP+

Height:
2RU

Depth:
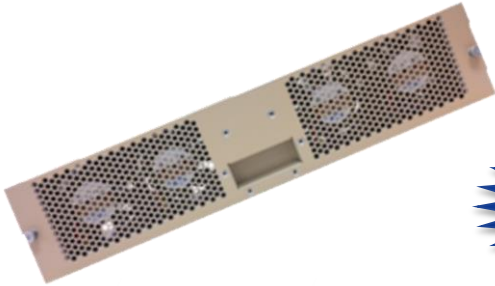21.8"

High scale control plane with x86 CPU

4 Key Variants

Instant Access, SGT, MACSec

750W/1100W Redundant AC/DC
Front-to-Back Airflow

All Catalyst 6K Features with no Compromise in a Smaller Form Factor

Catalyst 6840-X

Environmental Overview

High Efficiency
4500 RPM
Redundant Fans

Platinum Efficient
750 / 1100W
Power Supplies

Height
3.5 in (2RU)

Depth
21.8 in

Width
17.35 in

6840-X SKUs & Suggested NTE

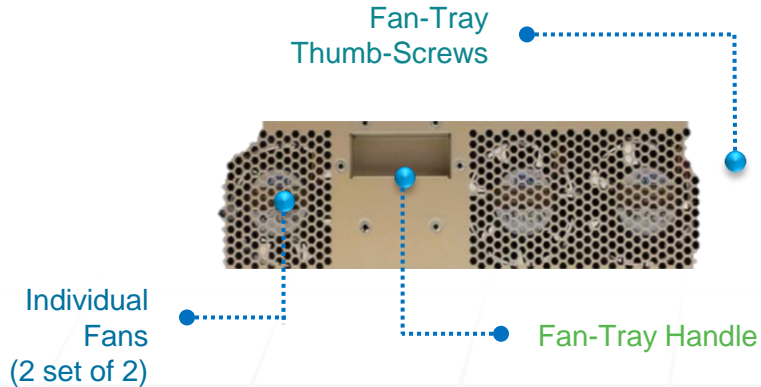| Common ASIC Architecture	16x10G	32x10G	24x10G + 2x40G	40x10G + 2x40G
Native Optics:	SFP/SFP+	SFP/SFP+	SFP/SFP+ and QSFP	SFP/SFP+ and QSFP
# of 10G Ports:	16	32	24 + 8 using breakout	40 + 8 using breakout
# of 40G Ports:	4 using reverse adapter	8 using reverse adapter	2 + 6 using reverse adapter	2 + 10 using reverse adapter
Features:	Full-feature L2/L3 with MPLS, VPLS. IPv4/IPv6 capabilities, 512K Netflow	Full-feature L2/L3 with MPLS, VPLS. IPv4/IPv6 capabilities, 1M Netflow	Full-feature L2/L3 with MPLS, VPLS. IPv4/IPv6 capabilities, 1M Netflow	Full-feature L2/L3 with MPLS, VPLS. IPv4/IPv6 capabilities, 1.5M Netflow
Additional Hardware Features:	Large Buffers, SGT, MACSec, LISP, Dual Priority Queues, Two Level Shaping, Instant Access	Large Buffers, SGT, MACSec, LISP, Dual Priority Queues, Two Level Shaping, Instant Access	Large Buffers, SGT, MACSec, LISP, Dual Priority Queues, Two Level Shaping, Instant Access	Large Buffers, SGT, MACSec, LISP, Dual Priority Queues, Two Level Shaping, Instant Access

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Catalyst 6840-X
Fan Redundancy & Air Flow

Fan-Tray
Thumb-Screws

Individual
Fans
(2 set of 2)

Fan-Tray Handle

Airflow
Intake Vents

Fan-Tray Highlights:

- Has 4 variable-speed High-Efficiency Fans (**200 CFM**)
- Supports 4 speeds between 3000 & 4500 RPM per Fan
- Capable of cooling of ALL 4 C6804-X chassis models
- Can still operate with up to 2 individual Fan failures
- Supports Fan-Tray "OIR" for minimum of 120 seconds
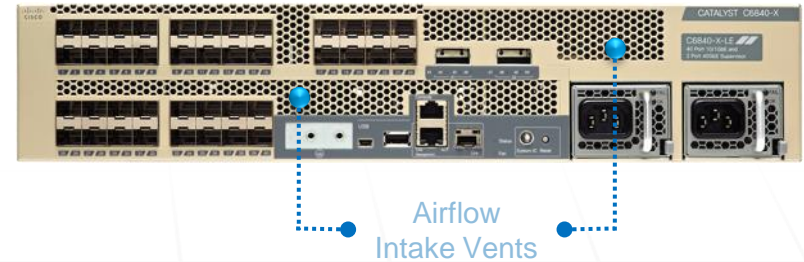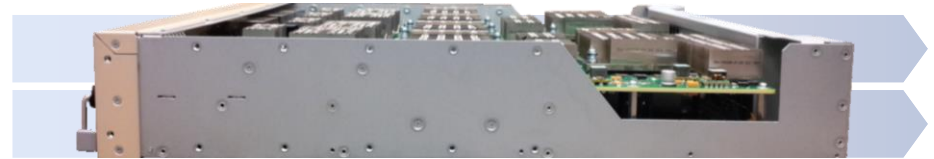
LED	Color	Status	Description
FAN	🟢	Solid	Fan-Tray OK
FAN	🔴	Solid	Fan-Tray Fault

Catalyst 6840-X

PSU Redundancy & Inputs

PSU Fans

Power Supply
Status LEDs

AC Input

PSU Handle

PSU Lock
& Ejector

C6840-X-750W-AC (DC)
C6840-X-1110W-AC (DC)

AC or DC
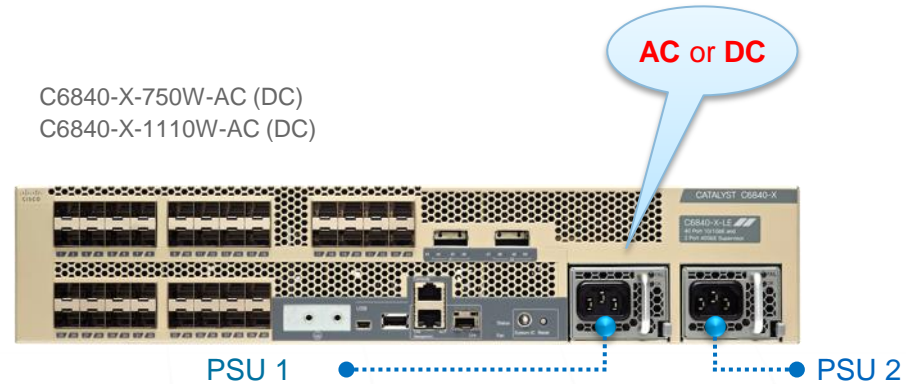
PSU 1

PSU 2

Power Supply Highlights:

- Two AC or DC models @ 110V: **750W** or **1100W**
- Up to 92% Power Efficiency @ 100% of load
- Power Hold-Up Time is ~20 msec @ 100% load
- "Front to Back" Variable-Speed Cooling Fans
- Supports **Combined** or **Redundant (1:1)** mode

LED	Color	Status	Description
IN	🟢	Solid	Input OK
IN	🟢	Blinking	Under-Current
OUT	🟢	Solid	Output OK
OUT	🟢	Blinking	Over-Current
Fault	🔴	Solid	Malfunction

Power Supply Redundancy
Catalyst 6840-X

The **Catalyst 6840-X** Utilizes **Two** Power Supplies in Either **Redundant** or **Combined** Mode

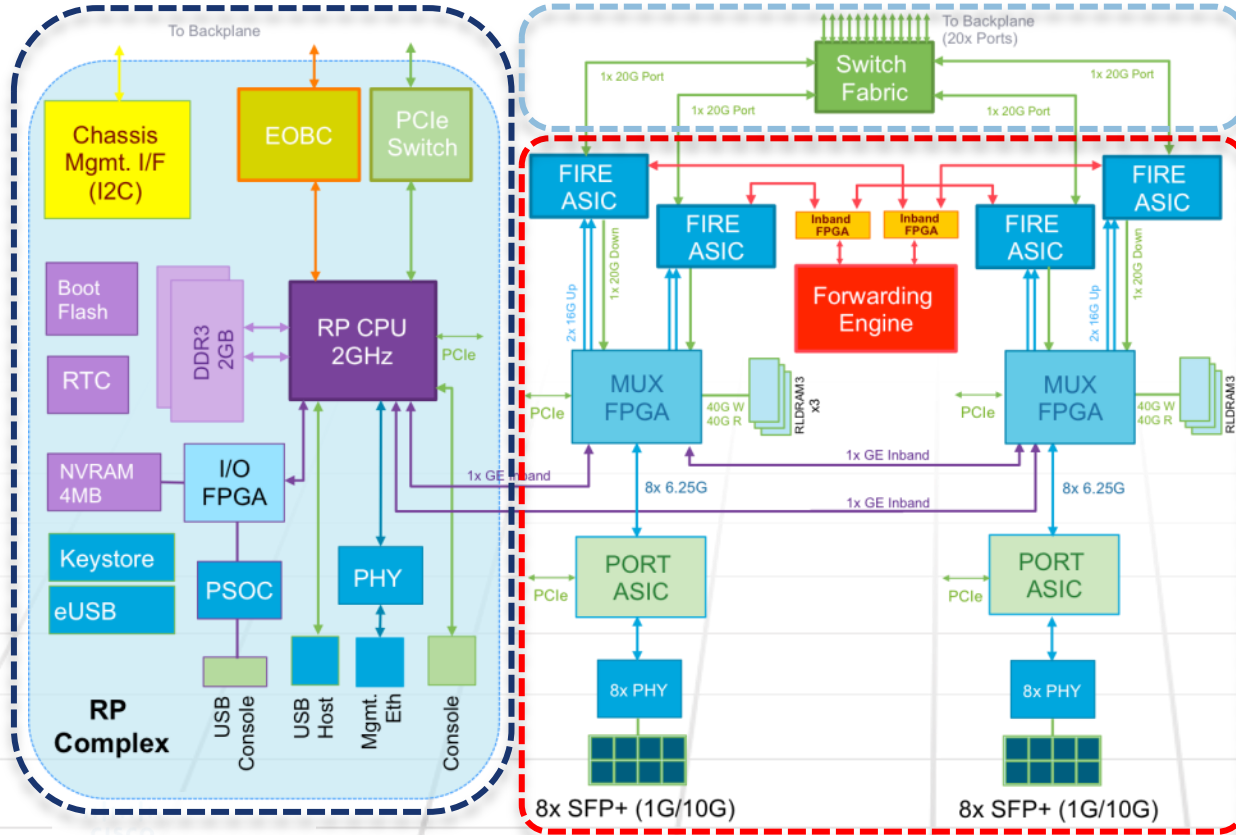| Redundant Mode	Combined Mode
PSU 1 — 50% **PSU 2** — 50%	**PSU 1** — 90% **PSU 2** — 90%
Recommended (Default)	• **Each PSU provides up to 90% of its capacity** • Total power available is 180% of a single supply • A single PSU may not have power for the system • **This mode is NOT Recommended**

# Catalyst 6840-X:
Fixed Chassis Design

3 Main Components:
- **RP Complex**
- **Baseboard**
- **Switch Fabric**

C6816-X-LE
Architecture Overview

Feature	C6816-X-LE
Forwarding ASIC(s)	1 DFC4-E
Bandwidth	80 Gbps
Throughput	60 Mpps
CPU	2.0GHz IB2C
Memory	4GB DDR3
Buffer (MB) per Port	250 or 500MB (2GB / 8 or 4p)
IPv4 Routes	256K
IPv6 Routes	128K
MAC Address	128K
Flexible NetFlow	512K
QoS & ACL	64K
Internal Flash	2GB eUSB+
Console	RJ45 / USB Type B
Management	RJ45 / SFP
External Flash	USB Type A
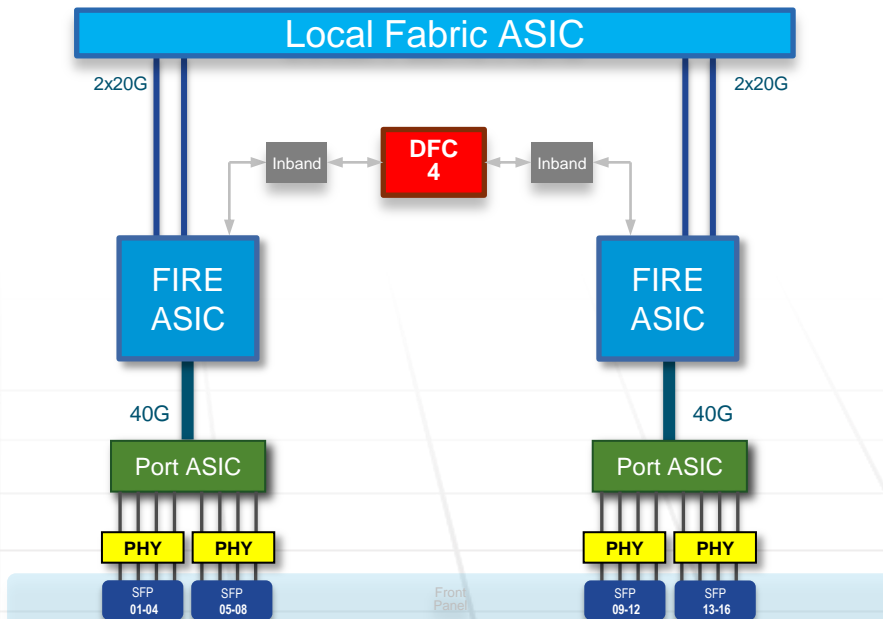
C6816-X-LE
CLI Outputs

C6816-X-LE# show module
```
Mod Ports Card Type                        Model          Serial No.
--- ----- ------------------------------ ---------------- -----------
  1   20  6816-X-LE 16P SFP+ Multi-Rate (Active) C6816-X-LE      FDO190204L3

Mod MAC addresses                 Hw    Fw          Sw          Status
---- ------------------------------ ------ ----------- ----------- -------
  1 7c0e.cec1.f21c to 7c0e.cec1.f274   0.202 15.1(03)     15.2(2)ID101 Ok

Mod  Sub-Module              Model           Serial      Hw    Status
---- --------------------- ---------------- ----------- ------- -------
  1 Policy Feature Card 4     C6840-X-LE-PFC    FDO190204L3  1.202  Ok

Mod  Online Diag Status
---- -------------------
  1 Pass
C6816-X-LE#
```

C6832-X-LE
Architecture Overview

Feature	C6832-X-LE
Forwarding ASIC(s)	2 DFC4-E
Bandwidth	160 Gbps
Throughput	120 Mpps
CPU	2.0GHz IB2C
Memory	4GB DDR3
Buffer (MB) per Port	250 or 500MB (2GB / 8 or 4p)
IPv4 Routes	256K
IPv6 Routes	128K
MAC Address	128K
Flexible NetFlow	1M
QoS & ACL	64K
Internal Flash	2GB eUSB+
Console	RJ45 / USB Type B
Management	RJ45 / SFP
External Flash	USB Type A

C6824-X-LE-40G
Architecture Overview

Feature	C6824-X-LE-40G
Forwarding ASIC(s)	2 DFC4-E
Bandwidth	160 Gbps
Throughput	120 Mpps
CPU	2.0GHz IB2C
Memory	4GB DDR3
Buffer (MB) per Port	250 or 500MB (2GB / 8 or 4p)
IPv4 Routes	256K
IPv6 Routes	128K
MAC Address	128K
Flexible NetFlow	1M
QoS & ACL	64K
Internal Flash	2GB eUSB+
Console	RJ45 / USB Type B
Management	RJ45
External Flash	USB Type A
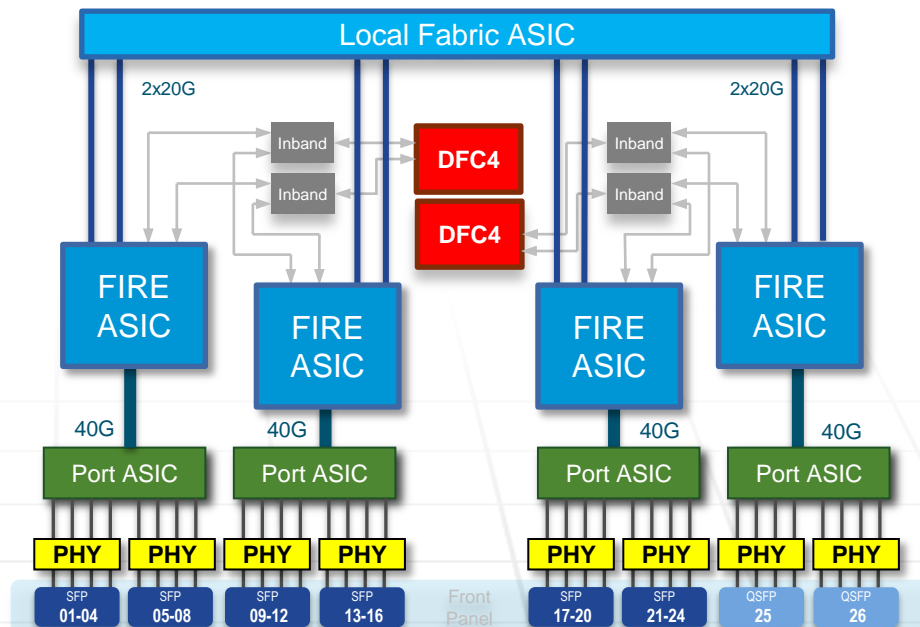
C6840-X-LE-40G
Architecture Overview

Feature	C6840-X-LE-40G
Forwarding ASIC(s)	3 DFC4-E
Bandwidth	240 Gbps
Throughput	180 Mpps
CPU	2.0GHz IB2C
Memory	4GB DDR3
Buffer (MB) per Port	250 or 500MB (2GB / 8 or 4p)
IPv4 Routes	256K
IPv6 Routes	128K
MAC Address	128K
Flexible NetFlow	1.5M
QoS & ACL	64K
Internal Flash	2GB eUSB+
Console	RJ45 / USB Type B
Management	RJ45 / SFP
External Flash	USB Type A
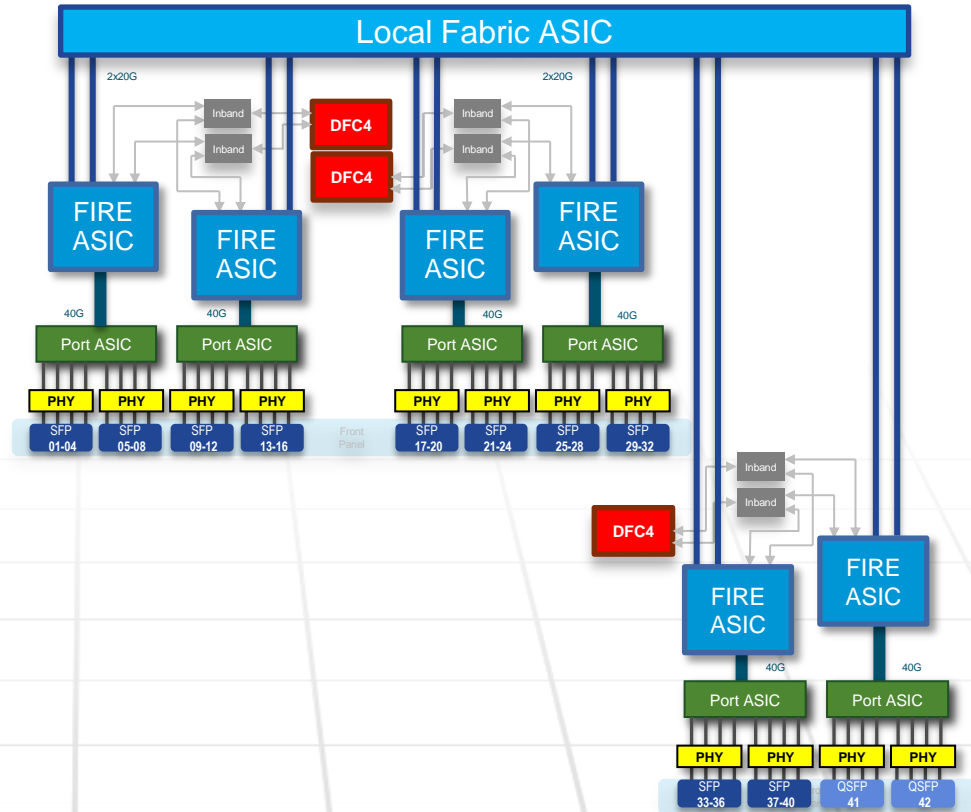
Summary & Resources

Summary

Digital Transformation of Business
- Requires Network Expansion for Scale & Services

Digital Transformation is Challenging
- Cisco is Innovating from Access to Backbone

Catalyst 6000 Series Leads the Industry
- Install Base is 20x Nearest Competitor

Introducing Catalyst 6840-X with 4 Key Variants
- C6816-X-LE
- C6832-X-LE
- C6824-X-LE-40G
- C6840-X-LE-40G

Supervisor 6T
- New Level of Scalability &Performance

Resources

- Catalyst 6800 Data Sheets & Literature:

- Catalyst 6800 FAQ:

- Catalyst 6800 Video:

- Lippis Report:

http://wwwin.cisco.com/tech/products/6800

Get Started with the 6840-X

Schedule an Backbone Assessment
Contact your Cisco rep to bring experts on-site for a consultation

Interact with Colleagues
https://communities.cisco.com/community/technology/enterprise_networks

Learn More at:

www.cisco.com/tech/products/6800;

Questions?

CISCO

TOMORROW *starts here.*