

Cisco UCS B-Series Blade Server Backplane - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The Cisco UCS B-Series Blade Server Backplane is the passive midplane interconnect fabric at the heart of the Cisco Unified Computing System. It provides deterministic, high-bandwidth, low-latency connectivity between blade servers, fabric extenders, and the chassis I/O fabric. Engineered for mission-critical data center deployments, the backplane eliminates active components in the data path, delivering exceptional reliability, simplified management, and seamless scalability. This datasheet details the architectural design, hardware features, compliance, and technical specifications of the Cisco UCS B-Series backplane.



ARCHITECTURE & CHASSIS DESIGN

The Cisco UCS B-Series backplane is a passive, non-blocking midplane that supports up to eight half-width or four full-width blade servers, two Fabric Interconnect modules, and up to eight Fabric Extender (FEX) or Virtual Interface Card (VIC) modules. It utilizes a high-density orthogonal connector architecture that ensures signal integrity and minimizes insertion loss. The backplane is designed to support 40/100 Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) fabrics, providing a unified fabric for LAN, SAN, and management traffic. The chassis supports front-to-back airflow and hot-swappable components, ensuring serviceability without disrupting operations.

HARDWARE FEATURES

- Passive midplane design with no active components, delivering >99.999% availability.
- Orthogonal connector system for low crosstalk and high signal density.
- Support for up to 8 half-width blades or 4 full-width blades.
- Dedicated management and console paths for each blade slot.
- Integrated power and cooling distribution with N+1 redundancy.
- Hot-swappable fabric extenders and blades.
- Support for Cisco UCS Virtual Interface Card (VIC) technology.
- End-to-end FCoE and iSCSI optimization.
- Real-time health monitoring and inventory via Cisco UCS Manager.

COMPLIANCE & STANDARDS

The Cisco UCS B-Series backplane complies with the following standards:

- NEBS Level 3 (GR-63-CORE, GR-1089-CORE)
- UL 60950-1, CAN/CSA-C22.2 No. 60950-1
- IEC 60950-1, EN 60950-1
- FCC Part 15 Class A, EN 55022 Class A, CISPR 22 Class A
- VCCI Class A, AS/NZS CISPR22 Class A
- RoHS, WEEE, and REACH compliant

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	Passive midplane, 8 half-width / 4 full-width blade slots
Switching Capacity	Up to 2.56 Tbps per chassis (with 8x 40G FEX)
Supported Fabric	40/100 Gigabit Ethernet, FCoE, Fibre Channel
Power Supply	N+1 redundant AC/DC (via chassis power supplies)
Cooling	Front-to-back airflow, N+1 fan redundancy
Management	Cisco UCS Manager, integrated BMC
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	5% to 95% non-condensing
Dimensions (H x W x D)	Midplane integrated into 6RU chassis
Compliance	NEBS Level 3, UL, FCC, CE, RoHS, WEEE

ORDERING OPTIONS

The Cisco UCS B-Series backplane is integrated into the following chassis and bundles:

- Cisco UCS 5108 Blade Server Chassis (N20-C5108)
- Cisco UCS B-Series Blade Server Bundles (various configurations)
- Cisco UCS Fabric Extender modules (UCS-IOM-2208XP, UCS-IOM-2204XP)
- Cisco UCS Virtual Interface Cards (VIC 1340, VIC 1380, VIC 1240, VIC 1280)

For detailed ordering information, refer to the Cisco UCS B-Series Configuration Guide.

