

Cisco Connected Grid Appliance 220 Non-Hardened Server



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Product Overview

The Cisco® Connected Grid Appliance 220NH is a non-hardened substation appliance that combines networking and storage access into a single system optimized for running the Cisco Substation Workbench - Monitoring & Network Analysis software. This integrated solution enables substations to monitor the intra-substation local area network for issues that could adversely impact utility grid operations.

The Connected Grid Appliance 220NH delivers greater cost efficiency and agility with increased visibility and control. The appliance is a one rack unit [1RU]) and contains increased compute density through a multi-core CPU and cache balanced with 8GB of memory capacity and 500GB of data storage with faster I/O. This specification delivers the best combination of features and cost efficiency required to support utility OT's and IT's diverse server needs.

Figure 1. Cisco Connected Grid Appliance 220NH Server



Applications

The Connected Grid Appliance 220NH is a purpose built configuration optimized for running the CGDS Substation Workbench – Monitoring & Network Analysis for utility substation demo labs, test beds, or temperature controlled substation environments.

Unique Benefits in a Familiar Package

The Connected Grid Appliance 220NH extends Cisco's unified compute and storage portfolio into the utility operational network and test beds in support of their grid operations and applications.

Table 1. Features and Benefits

| Feature | Benefit |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intel Xeon processor E5-2600 product family | <ul style="list-style-type: none"> Automated energy efficiency reduces energy costs by automatically putting the processor and memory in the lowest available power state while still delivering the performance required and flexible virtualization technology that optimizes performance for virtualized environments, including processor support for migration and direct I/O Up to twice the performance for floating-point operations. Intel Advanced Vector Extensions (Intel AVX) provides new instructions that can significantly improve performance for applications that rely on floating-point or vector computations Advanced reliability features, including Machine Check Architecture Recovery, to automatically monitor, report, and recover from hardware errors to maintain data integrity and keep mission-critical services online Hardened protection for virtual and cloud Environments: Establish trusted pools of virtual resources with Intel® Trusted Execution Technology (Intel® TXT). Intel TXT ensures that physical servers and hypervisors boot only into cryptographically verified "known good states." It safeguards your business more effectively by protecting your platform from the insertion of malware during or prior to launch |
| Hot-swappable SATA drive | <ul style="list-style-type: none"> Front-accessible, hot-swappable, internal SATA drives, providing redundancy options and ease of serviceability 7200-RPM SATA drives for high capacity and value |
| Cisco UCS C-Series Integrated Management Controller (CIMC) | <ul style="list-style-type: none"> Web user interface for server management; remote keyboard, video, and mouse (KVM); virtual media; and administration Virtual media support for remote CD and DVD drives as if local Intelligent Platform Management Interface (IPMI) 2.0 support for out-of-band management through third-party enterprise management systems Command-line interface (CLI) for server management |
| Fast-memory support | <ul style="list-style-type: none"> 8GB DDR3 1600-MHz memory for optimal performance |
| Redundant fans and power supplies | <ul style="list-style-type: none"> Dual-redundant fans and hot-swappable, redundant power supplies for enterprise-class reliability and uptime Power efficiency through Cisco Common Form-Factor Platinum Power Supplies (450W) |
| Support for up to 3 PCIe 3.0 slots | <ul style="list-style-type: none"> Flexibility, increased performance, and compatibility with industry standards PCIe 3.0 slots, which are estimated to substantially increase the bandwidth over the previous generation and offer more flexibility while maintaining compatibility with PCIe 2.0 I/O performance and flexibility with one x8, half-height and half-length slot and one x16, full-height and half-length slot |
| Integrated dual-port Gigabit Ethernet | <ul style="list-style-type: none"> Outstanding network I/O performance and increased network efficiency and flexibility Increased network availability when configured in failover configurations |
| Tool-free access | <ul style="list-style-type: none"> Tool-free access to all serviceable items, and color-coded indicators to guide users to hot-pluggable and serviceable items |
| 10-Gbps unified network fabric | <ul style="list-style-type: none"> Low-latency, lossless, 10-Gbps Ethernet and industry-standard FCoE and native Fibre Channel fabric Wire-once deployment model in which changing I/O configurations no longer means installing adapters and recabling racks and switches Fewer interface cards, cables, and upstream network ports to purchase, power, configure, and maintain |

Product Specifications

Table 2 lists the specifications for the Connected Grid Appliance 220NH.

Table 2. Product Specifications

| Item | Specification |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processors | <ul style="list-style-type: none"> One (1) 2GHz Intel Xeon E5-2620 / 95W 6C / 15MB Cache / DDR3 1333MHz |
| Chipset | <ul style="list-style-type: none"> Intel® C600 series chipset |
| Video | <ul style="list-style-type: none"> The Emulex Pilot 3 Integrated Baseboard Management Controller provides video: Matrox G200e video controller Integrated 2D graphics core with hardware acceleration Supports all display resolutions up to 1920 x 1200 x 16 bpp resolution at 60 Hz 24-bit color depth for all resolutions less than 1600x1200 256 MB video memory |

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Memory | <ul style="list-style-type: none"> • One (1) 8GB DDR3-1333-MHz RDIMM/PC3-10600/2R/1.35v |
| PCIe slots | <ul style="list-style-type: none"> • 2 PCIe Generation 3.0 slots available • I/O performance and flexibility with one x8 half-height and half-length slot, and one x16 full-height and half-length slot |
| Hard drive | <ul style="list-style-type: none"> • One (1) front-accessible, hot-swappable, 2.5-inch SATA drive |
| Internal USB | <ul style="list-style-type: none"> • The server supports one internal USB flash drive |
| Front-panel connector | <ul style="list-style-type: none"> • One KVM console connector (supplies 2 USB, 1 VGA, and 1 serial connector) |
| Front-panel locator LED | <ul style="list-style-type: none"> • Indicator to help direct administrators to servers with issues |
| Additional rear connectors | <ul style="list-style-type: none"> • Additional interfaces including a VGA video port, 2 USB 2.0 ports, an RJ45 serial port, 1 Gigabit Ethernet management port, and dual 1 Gigabit Ethernet ports |
| Physical dimensions (H x W x D) | <ul style="list-style-type: none"> • 1RU: 1.7 x 16.9 x 28.5 in. (4.32 x 43 x 72.4 cm) |
| Power subsystem | <ul style="list-style-type: none"> • Two 450 W power supplies for 1 + 1 redundancy. |
| Temperature: Operating | <ul style="list-style-type: none"> • 32 to 104°F (0 to 40°C) (operating, sea level, no fan fail, no CPU throttling, turbo mode) |
| Temperature: Nonoperating | <ul style="list-style-type: none"> • -40 to 158°F (-40 to 70°C) |
| Humidity: Operating | <ul style="list-style-type: none"> • 10 to 90% noncondensing |
| Humidity Nonoperating | <ul style="list-style-type: none"> • 5 to 93% noncondensing |
| Altitude: Operating | <ul style="list-style-type: none"> • 0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1°C per 300m) |
| Altitude: Nonoperating | <ul style="list-style-type: none"> • 0 to 40,000 ft (12,000m) |

Regulatory Standards

Table 3 lists regulatory standards compliance information.

Table 3. Regulatory Standards Compliance: Safety and EMC

| Specification | Description |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety | <ul style="list-style-type: none"> • UL 60950-1 No. 21CFR1040 Second Edition • CAN/CSA-C22.2 No. 60950-1 Second Edition • IEC 60950-1 Second Edition • EN 60950-1 Second Edition • IEC 60950-1 Second Edition • AS/NZS 60950-1 • GB4943 2001 |
| EMC: Emissions | <ul style="list-style-type: none"> • 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR2 2 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A |
| EMC: Immunity | <ul style="list-style-type: none"> • EN55024 • CISPR24 • EN300386 • KN24 |

Ordering Information

For more information about the Cisco Connected Grid, please contact your Cisco Connected Grid Services account representative or visit the Smart Grid website:

http://www.cisco.com/web/strategy/energy/substation_automation.html

Cisco Services

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<http://www.cisco.com/go/unifiedcomputingservices>



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