

# Panduit Physical Infrastructures for the Cisco® Nexus 7009 Switch Platform



Net-Access™ Cabinet has tested compatible with Cisco Nexus 7009.  
Go to [www.panduit.com/cisco1](http://www.panduit.com/cisco1) for disclaimer

# PANDUIT®

building a smarter,  
unified business foundation

Connect. Manage. Automate.



## Advanced Networking Capabilities

Panduit works closely with clients to assess their needs and to design solutions that ensure the rapid, correct, and secure deployment of a physical infrastructure that is ready to handle the latest technologies, applications, and systems.

Panduit also provides intelligent physical infrastructure solutions such as the Physical Infrastructure Manager™ (PIM™) Software Platform for tracking the allocation and utilization of critical IT assets within your data center and throughout your enterprise. The PIM™ Software Platform lays the foundation for effective Data Center Infrastructure Management (DCIM) through accurate and timely documentation of these physical assets, improved visibility into asset moves, adds and changes (MACs), and process-driven integration with applicable management systems.

## Panduit and Cisco^ Technology Partnership Overview

Cisco and Panduit provide solutions and architectures that optimize data centers to help customers increase agility and improve operational efficiency. Panduit's Unified Physical Infrastructure<sup>SM</sup> (UPI)-based approach connects, manages, and automates critical infrastructure systems:

- Communication
- Computing
- Power
- Control
- Security

By converging the business infrastructure across these core systems, Panduit provides customers with a smarter, unified business foundation.

## Panduit Solutions Accelerate and Simplify Deployments

Panduit and Cisco collaborate to provide unified data center solutions and architectures that deliver the following for our joint customers:

- Simplified deployment through pre-configured physical infrastructure solutions
- Reduced risk through pre-validated converged systems and architectures
- Efficiency through upfront design consideration of power, cooling, and industry standards
- Business agility through flexible and scalable architectures

## Panduit Optimized Solutions for the Cisco Nexus 7009 Switch Platform

The Cisco Nexus 7009 Switch platform delivers high performance in a compact 14 RU form factor optimized for deployment from data center to borderless network environments.

Panduit® Net-Access™ Cabinet, 4 post and 2 post open rack, and ducting solutions have been tested as Cisco Compatible for the Cisco Nexus 7009 switch in collaboration with Cisco. These solutions ensure an optimal thermal, power, cabling, and space operating environment for the Cisco Nexus 7009 Switch platform in the data center and throughout the enterprise.

To simplify and accelerate deployment of Cisco technologies, Panduit has integrated our Nexus 7009 optimized products into pre-configured cabinet solutions. Panduit Pre-Configured Physical Infrastructures arrive at your site ready to be deployed, reducing the time required for planning, design, procurement, and installation, as well as reducing the cost of operation.

### Unified Physical Infrastructure



## Optimized for Power, Cooling, and Performance

As a leading physical infrastructure partner for Cisco<sup>^</sup>, Panduit works with Cisco engineering and product teams to develop optimal physical layer solutions for their networking products. Panduit Pre-Configured Physical Infrastructures were designed specifically for the Cisco Nexus 7009 Switch platform to balance scalability, power and thermal characteristics. This approach ensures that the physical infrastructure deployments are optimized for power, cooling, and performance, lowering infrastructure risks and costs while increasing agility and sustainability.

### Optimized Power and Thermal Management

Physical infrastructure configurations provide capacity and continuous real-time power monitoring via the network for enhanced system management and reliability. Panduit PViQ™ Power Outlet Units (POUs) are available separately to provide optimal capacity and redundancy across all Cisco UCS, Nexus and Catalyst platforms.

Panduit Pre-Configured Physical Infrastructures for the Cisco Nexus 7009 Switch platform conserve energy by establishing front-to-back airflow patterns and synergistic physical layouts to maximize power and thermal efficiencies. These pre-configured solutions offer high-density, optimum heat load data center designs for greater thermal efficiencies.

- New Cisco Compatible Intake and Exhaust Ducting designed for the Cisco Nexus 7009 Switch (co-engineered and validated with Cisco), which optimizes cooling system efficiency by establishing front to back airflow patterns
- Optional Vertical Exhaust Systems (VES) that isolate and duct hot exhaust air to the hot air return plenum to improve hot/cold air separation, thus optimizing cooling efficiency
- Vertical air dams and sealing features that minimize leak paths between hot and cold aisles, ensuring that valuable cooling airflow goes through equipment



*Front of Cabinet*

*Back of Cabinet*

### Scalability

Panduit Pre-Configured Physical Infrastructures for the Cisco Nexus 7009 Switch platform are designed to support various I/O module and equipment densities, thus enabling business growth and agility across the entire offering.

Panduit Pre-Configured Physical Infrastructures also accommodate migration from 10G to 40G/100G Ethernet with minimum investment and downtime. Making changes to a Cisco Nexus 7009 Switch deployment is easy, with modular QuickNet™ Patch Panels and connectivity enabling quick migration to higher speeds.

When combined with additional Panduit passive, optimized thermal management solutions, Panduit Pre-Configured Physical Infrastructures for the Cisco Nexus 7009 Switch platform can provide substantial reductions in the energy costs of a typical data center.



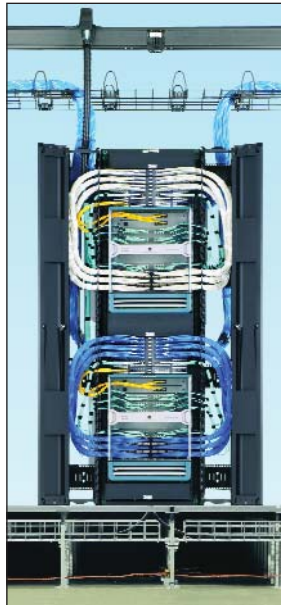
# Cisco<sup>^</sup> Nexus 7009 Switch Deployment Scenarios

The following scenarios describe typical methods for deploying Cisco Nexus 7009 Switches to meet various data center and campus applications. These four scenarios include deployment in both Panduit<sup>®</sup> Net-Access<sup>™</sup> Cabinet, 4 post racks, 2 post racks, and encompass physical infrastructure elements including high speed copper and fiber cabling, thermal ducting, power outlet units, cable management, grounding, and identification. The scenarios depicted below are typical applications. The Nexus 7009 switch can be configured as required by the customer without limitation on how many fiber or copper I/O modules are supported. Cisco Nexus 7009 Switch deployment scenarios have been thermally tested and supported.



## Scenario 1

Single Nexus 7009 Switch, deployed in a data center access layer application. This can be an MoR or EoR deployment. Switch shown is provisioned with 6 copper I/O modules and 1 fiber I/O module in a Net-Access<sup>™</sup> Cabinet.



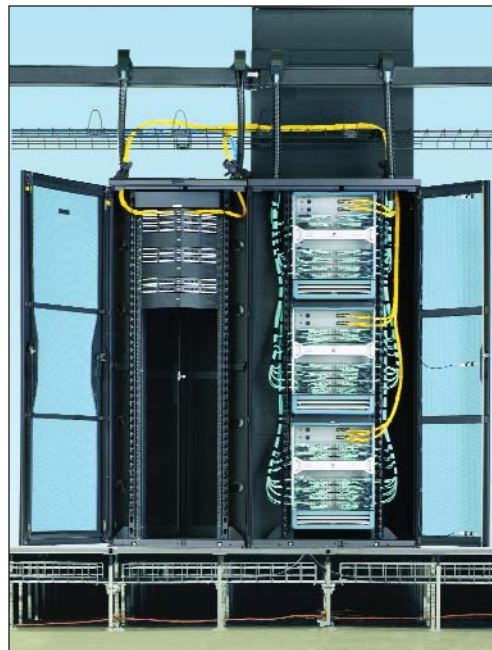
## Scenario 2

Two Nexus 7009 Switches, deployed in a data center aggregation or core layer application. This can be an MoR or EoR deployment. Each switch shown is provisioned with 3 copper I/O modules and 4 fiber I/O modules in a 4 post rack.



## Scenario 3

Single Nexus 7009 Switch, deployed in an access layer application in the data center or in a campus environment. This can be an MoR or EoR deployment. Switch shown is provisioned with 6 copper I/O modules and 1 fiber I/O module in a 2 post rack.



## Scenario 4

Three Nexus 7009 Switches, deployed in a data center core layer application. Each switch shown is provisioned with 7 fiber I/O modules in a Net-Access<sup>™</sup> Cabinet. The switches are patched to an interconnect in a separate cabinet. Optional Vertical Exhaust System (VES) shown at top of cabinet, to support higher density switch application.

## Faster Implementation, Simple Specification

As more businesses are adopting consolidation, virtualization, and automation of networking assets to drive business results, the physical infrastructures needed to support the technologies are increasingly becoming more complicated and take longer to implement.

Panduit and Cisco<sup>^</sup> have created a data center solution that integrates the physical infrastructure systems needed in an optimized data center deployment. Panduit Pre-Configured Physical Infrastructures arrive at your site ready to be deployed, reducing the time required for planning, designing, procurement, and installation, as well as the cost of operations.

As with any logical architecture design, true data center optimization relies on a Unified Physical Infrastructure<sup>SM</sup> (UPI)-based approach in order to successfully address the challenges around power, cooling, space utilization, transport speed, and overall performance. Pre-Configured Physical Infrastructure offerings are based on proven reference architectures that map the logical to physical layer. These solutions are pre-engineered, tested, and validated to lower the infrastructure speed to deployment, enhance thermal performance, decrease energy usage, and reduce total cost of ownership (TCO), resulting in reduced risk and increased sustainability.

Cisco offers proven, end-to-end network and Unified Computing Solutions as part of their Data Center 3.0 strategy. Advanced networking capabilities accelerate both the transition to converged data center fabrics and the adoption of cloud architectures. The Cisco Nexus 7009 Switch platform incorporates these capabilities with technologies like Fibre Channel over Ethernet (FCoE), FabricPath, and Virtual Port Channels (vPC) to provide availability, scalability, and security for business applications. This switch also provides future proofing to next generation speeds of 40 and 100 GbE when run over High Speed Data Transport (HSDT) cabling systems.

Panduit Pre-Configured Physical Infrastructures for the Cisco Nexus 7009 Switch platform increase business agility through high-performance, flexible, scalable and reliable data center design, incorporating:

- Network design best practices
- Physical layer infrastructure best practices
- Power, cooling, and space considerations
- Data center standards

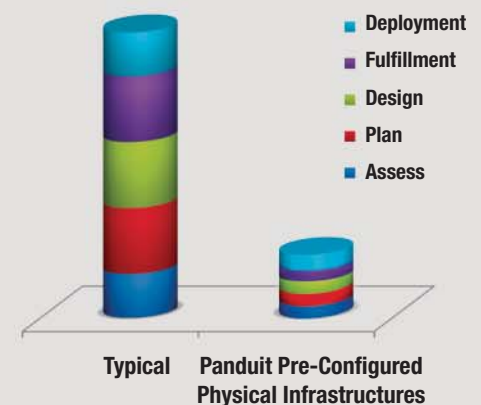
## The Panduit Advantage

Panduit Pre-Configured Physical Infrastructures for the Cisco Nexus 7009 Switch platform offer the following benefits:

### Reduced Time to Production up to 80%

Arrive factory designed, tested, and validated to improve:

- Assessment time up to 80%
- Planning time up to 80%
- Design time up to 80%
- Fulfillment time up to 90%
- Deployment time up to 65%



**Optimized Performance** – Designed specifically for the Cisco Nexus 7009 Switch platform to optimize power, cooling, space, speed, and performance, reducing operating risks.

**Sustainability** – Offer enterprises an IT solution that reduces energy consumption and arrives pre-configured to reduce packaging waste.

**Scalability** – Designed to grow without affecting existing equipment by simplifying maintenance and upgrades, and enabling a migration path from 10G to 40G/100G.

**Reduced Costs** – Reduce multiple costs through rapid deployments, simplified scalability, and optimized performance.

# Panduit Pre-Configured Solution for the Cisco<sup>^</sup> Nexus 7009 Switch

## Single Switch in a Panduit Net-Access™ Cabinet



(Nexus 7009 "Heavy Copper"  
Pre-Configured Physical Infrastructure shown)

The Cisco Nexus 7009 Switch enables data center stakeholders to deploy a highly scalable 10 Gigabit Ethernet (GbE) network that supports virtualization technologies for consolidation of multiple applications over a smaller number of more powerful servers and switches. All cabinet versions of Panduit pre-configured offerings for the Nexus 7009 include newly designed intake duct to optimize cooling airflow.

Panduit Pre-Configured Physical Infrastructures support the deployment of Cisco Nexus 7009 Switch platforms with pre-assembled configurations that are offered in versions that meet typical copper and fiber I/O module provisioning schemes including:

- "Medium Fiber" for switch provisions requiring up to (4) 32-port fiber I/O Modules
- "Medium Copper" for switch provisions requiring up to (4) 48-port copper I/O Modules
- "Heavy Copper" for switch provisions requiring up to (6) 48-port copper I/O Modules

Part Number	Description	Std. Pkg. Qty.
CQ7009CN01	"Base" Pre-Configured Physical Infrastructure for Cisco® Nexus 7009 with Net-Access™ Cabinet, and intake ducting, as well as all necessary cable management, switch shelf, grounding jumpers, and eight patch panels.	1
CQ7009CN02	"Medium Fiber" Pre-Configured Physical Infrastructure for Cisco® Nexus 7009 with Net-Access™ Cabinet, and intake ducting, as well as all necessary cable management, switch shelf, grounding jumpers, patch panels (16), and 16 MTP-LC Hydra cable assemblies (bulk packaged to accommodate four fiber I/O Modules).	1
CQ7009CN03	"Medium Copper" Pre-Configured Physical Infrastructure for Cisco® Nexus 7009 with Net-Access™ Cabinet, and intake ducting, as well as all necessary cable management, switch shelf, grounding jumpers, patch panels (16), and 192 copper Category 6A patch cords (bulk packaged to accommodate four copper I/O Modules).	1
CQ7009CN04	"Heavy Copper" Pre-Configured Physical Infrastructure for Cisco® Nexus 7009 with Net-Access™ Cabinet, and intake ducting, as well as all necessary cable management, switch shelf, grounding jumpers, patch panels (16), and 288 copper Category 6A patch cords (bulk packaged to accommodate six copper I/O Modules).	1

\*Cisco Nexus 7009 Switch not included in the part numbers above. Panduit Pre-Configured Physical Infrastructures are shipped on standard pallets. For applications that require shock-resistant packaging to facilitate pre-mounting of active electronics, please contact customer service.



## Real-World Solutions

With a proven reputation for excellence and innovation, Panduit and our partners work with you to overcome challenges and implement real-world solutions that create a competitive business advantage. Panduit offers the broadest range of solutions, from data centers and intelligent buildings to manufacturing operations, to help you build a **smarter, unified business foundation**.



### Technology Leadership

Panduit develops innovative physical infrastructure solutions that meet the rapidly changing needs of our clients, from hardware and software to advisory services. This commitment is supported by investment in advanced research, solutions-focused product development, world-class manufacturing, and collaboration with customers at the forefront of technology.



### Partner Ecosystem

Our best-in-class partner ecosystem offers a comprehensive portfolio of services that span the project lifecycle, from planning and design to delivery, deployment, maintenance, and operation. Panduit business partners – distributors, and certified architects, consultants, engineers, designers, system integrators, and contractors – are qualified to help you achieve your objectives and realize predictable and measurable results.



### Strategic Alliances

Panduit cultivates long-term strategic alliances with industry leaders, including Cisco Systems, EMC, IBM, and Rockwell Automation, to develop, optimize, and validate solutions for our customers. This investment in people and resources helps solve our customers' greatest business challenges.



### Global Business Commitment

Panduit is committed to delivering a consistently high level of quality and service the world over. With a presence in more than 100 countries, local Panduit sales representatives and technical specialists offer guidance and support that bring value to your business. Our global supply chain, which includes manufacturing, customer service, logistics, and distribution partners, provides prompt response to your inquiries and streamlines delivery to any worldwide destination.



### Sustainability

Panduit cultivates long-term strategic alliances with industry leaders, including With a commitment to environmental sustainability, Panduit develops and implements solutions that protect, replenish, and restore the world in which we live. This commitment is demonstrated by Panduit's LEED Gold certified World Headquarters, leveraging the Unified Physical Infrastructure<sup>SM</sup> approach to enable convergence of critical building systems to drive energy efficiency and ongoing operational improvement.

*Transform Your  
Physical Infrastructure*

*Call or visit us online,  
we can show you how.*

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