

**HCLTech** | Supercharging  
Progress™

# Intelligent Data Center Networking

in partnership with HPE



# Overview

Organizations today operate in environments that demand ultra-low latency connectivity, support for hybrid and multi-cloud architectures, and the ability to manage dynamic AI workloads across distributed infrastructure. These environments require networks that can scale predictably, enforce policies consistently, and adapt to changing demand with minimal manual intervention. Traditional data center networking approaches are increasingly unable to support these rapidly evolving enterprise requirements.

HCLTech's Intelligent Data Center Networking addresses these requirements through a software-defined approach that combines intent-based design, automation, and AI-driven data center networking operations. Using HPE Networking Data Center Director and HPE Mist, the solution enables enterprises to establish a consistent and controlled network environment aligned with modern operating models.



## Market trend and drivers

Several structural shifts are driving the need for change in data center networking:

- **AI Factories rewriting network requirements:** Exploding AI/ML workloads demand ultra-high bandwidth, low latency, and east-west traffic optimization; far beyond what legacy data centers can handle.
- **Hybrid multicloud is the new normal:** Seamless, policy-consistent connectivity across on-prem, cloud, and edge is now critical to support distributed AI pipelines and data flows.
- **Cloud style operating models:** API-driven, automated, and continuously deployed infrastructure is replacing manual, static networking exposing the limits of legacy designs.
- **Focus on built-in security & compliance:** Zero-trust, microsegmentation, and regulatory alignment must be embedded into the network fabric to protect AI models and data.
- **Sustainable and scalable Infrastructure:** AI-driven growth is pushing the need for energy-efficient, optimized networks that reduce footprint while scaling performance..

# 70%

of the world's DC capacity will be used to manage AI workloads by 2030

Omdia

# ~\$315 bn

Planned hyperscaler investments for DC expansion over the next 4-5 years.

Omdia

# ~11,500

data centers worldwide today, with sustained buildout driven by AI and data sovereignty.

Data Center Map

# Key challenges in modern day data center networking



**Multilayer complexity:** Combining classic workloads and AI clusters on a single fabric increases design and operational risk.



**Limited full-stack visibility:** The inability to pinpoint whether a slowdown originates in the underlay, overlay, GPU fabric, storage, or application layer significantly increases Mean Time to Repair (MTTR).



**Massive east-west traffic:** Modern applications (microservices, VMs, containers) combined with GPU-to-storage traffic create severe heavy east-west traffic bottlenecks.

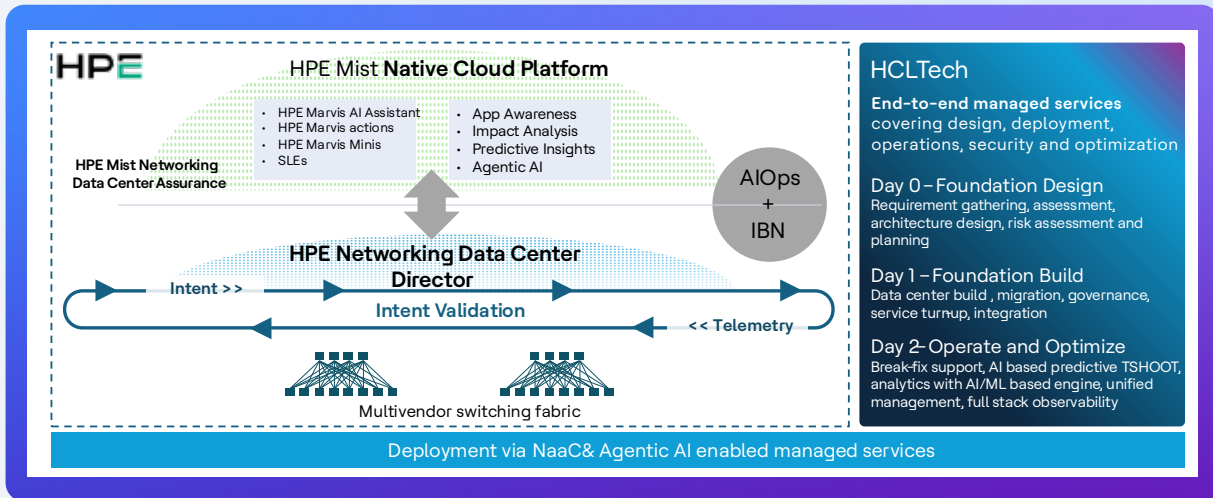


**Security and segmentation:** Managing ACLs, security groups, and micro segmentation at scale is error prone and easy to misconfigure.



# HCLTech Intelligent Data Center Networking in partnership with HPE

HCLTech's Intelligent Data Center Networking helps enterprises overcome modern infrastructure challenges with a structured, AI-native approach. Combining HCLTech's transformation expertise with HPE's industry-leading innovations, HPE Networking Data Center Director and HPE Mist Networking Data Center Assurance, it enables smarter, end-to-end data center networking built for the agentic networking shift.



Our solution starts with a high-fidelity data foundation: the HPE Networking Data Center Director contextual graph database. By mapping real-time application interdependencies, we enable truly effective intent-based networking while feeding high-quality data into HPE Mist Networking Data Center Assurance—delivering a level of AI-native insight unmatched in the industry for accurate, intelligent AIOps. When combined with HCLTech's NaaC deployment and agentic AI-managed services, your operations are fundamentally transformed. The result is a self-validating network that defines and enforces its desired state automatically—dramatically reducing manual overhead and ensuring total infrastructure consistency.

The solution is designed around a set of core principles: intent-driven architecture, AI driven operations, full-stack visibility, and lifecycle-based delivery covering design, build, and ongoing operations.

## Key solution components

### Intent-based networking (HPE Networking Data Center Director)

- **Single Source of Truth (SSOT):** Centralizes and standardizes all infrastructure configuration and management
- **Automated Lifecycle Management:** Orchestrates the entire journey—from Day 0 design through Day 2 operations—to eliminate human error.
- **Continuous Validation:** Audits the network fabric to ensure the network state matches the business intent.



### AIOps (HPE Mist Networking Data Center Assurance)

- **Predictive Analytics:** Uses agentic AI to identify and remediate anomalies before they impact application performance.
- **Agentic AI Root Cause Analysis:** Leverages Marvis to provide automated RCA and actionable resolution steps.
- **Application Awareness/Impact Analysis:** provide full, end-to-end service observability on how network anomalies impact app/user experience.



## Automated deployments via NaaC and Agentic AI enabled MNS (HCLTech)

- **Deployed via a NaaC model:** Network intent, policies, configurations, and validation rules are programmatically defined and automated including GitOps-based change workflow, CI/CD validation, pre/post-change checks, etc.
- **Agentic AI enabled managed services across Day 0/1/2 activities:** LLM-assisted triage, root-cause summarization, runbook recommendation, ticket enrichment, knowledge capture and guarded remediation
- **HCLTech Automation Platform and SDN framework:** Reusable assessment, design, deployment, migration, integration, observability and operations playbooks across Day 0, Day 1 and Day 2
- Together, NaaC and Agentic AI enable a more autonomous operating model



## Sample use cases that drive real world results

1

HPE Mist Networking Data Center Assurance for AI Ops

2

Networks for AI in AI Factory

3

Agentic AI for network operations

4

HPE Networking Data Center Director integration with unified N-S/E-W traffic inspection engine along with multi-OEM ADC

5

Microsegmentation in DC network via HPE Networking Data Center Director and HPE Networking Security Director

6

Highly available & reliable DC network via DC-DR Approach

## Key business benefits

361% \*

Return on Investment (ROI) following HPE Networking Data Center Director adoption

98%

Reduction in Day 0 efforts

95%

Reduction in Day 1 deployment efforts

75%

Reduction in Day 2 operations efforts

Forrester Total Economic Impact of HPE Networking Data Center Director (formerly Juniper Apstra), May 2026  
\* Over three-year period

- **Predictable Performance:** Consistent, scalable, high-performance underlay and overlay connectivity across fabrics.
- **Secure Infrastructure:** Business-aligned architecture supporting hybrid/multi-cloud, zero-trust segmentation, and application SLA assurance.
- **Operational Efficiency:** Predictive insights that anticipate issues before impact, significantly reducing MTTR and driving measurable efficiency gains.
- **Simplified Management:** One cohesive SLA for end-to-end performance, reducing administrative complexity.
- **Unified Visibility:** Consolidated monitoring across network and application layers to provide real-time insights and improve decision-making.

# Why HCLTech and HPE for data center networking?



## Branded, productized IP at every layer

HCLTech IPs (AIForce.Ops, HCL Software accelerators, network consulting and assessment framework, and intelligent SDP) across each layer.



## HPE innovation where it matters

HPE Networking Data Center Director for intent-based data center fabric; HPE Mist / HPE Marvis for AIOps, assurance and recommended actions.



## One SLA for data center network outcomes

A single operating model across fabric, security, observability and application delivery simplifies accountability.



## Simplified data center operations

AI and automation first approach takes the complexity out at every step of DC network operations.



## Intent based automation at scale

Automate the full fabric lifecycle with precision and consistency.



## Proven built-in expertise

A dedicated CoE powering automation, design, and security.



## Dedicated labs that accelerate outcomes

Test, validate, and innovate—before you deploy.



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