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Cisco UCS-X and Intersight Implementation Services

Modern organizations depend on a scalable, resilient, and secure compute, networking, and storage infrastructure to deliver business-critical applications, accelerate digital transformation, and control operational costs. The Cisco UCS X-Series modular compute platform is designed to support organizations that operate in the data center and at the edge with simplified infrastructure and increased operational efficiency. Cisco's X-Series combined with Cisco Intersight provides a highly-automatable managed infrastructure which can serve as the underlying platform for virtualized workloads, private cloud architectures, enterprise applications and databases, and GPU-accelerated AI/ML services—all within a single chassis. This unified architecture, combined with Connection's proven expertise, empowers customers to simplify infrastructure management, enhance agility, and optimize workload performance. From data center modernization to private cloud adoption, Connection provides the professional services to help you confidently achieve your IT and business goals.

Highlights of Cisco UCS-X and Intersight:

The foundation of Cisco UCS-X is the X9508 7RU modular chassis, which can house up to eight 2-socket compute nodes (server blades). The architectural flexibility provided by the modular, fabric-based approach allows for a wide variety of server module configurations, from standard 2-socket configurations to high-density 4-CPU configurations. For AI/ML and VDI workloads, flexible access to "outboard" Intel® or NVIDIA GPUs is enabled through Cisco's optional X-Fabric technology coupled with PCIe nodes. This disaggregates the compute modules, allowing each selective access to multiple PCIe Gen5 x16 full-height, full-length dual-slot PCIe cards housed within the modular chassis. Thus, UCS-X can support a wider range of workloads within the same chassis—including those typically only supported on rack servers—with the added benefits of shared power, cooling, and networking.

- **Cisco Intersight Management:** The X-Series was designed around Intersight Managed Mode (IMM), providing centralized policy-based configuration, firmware/lifecycle management, observability, and automation across multiple UCS infrastructures.
- **Unified Networking/Storage Connectivity:** UCS continues Cisco's converged networking model of consolidating server LAN and storage connectivity through the UCS fabric rather than requiring numerous discrete NICs, HBAs, switches and cables.
- **Flexible Storage Architectures:** UCS-X can participate in traditional SAN/NAS architectures, FlexPod and FlashStack designs, or Hyperconverged (HCI) configurations. For example, Cisco validated designs include Pure Storage, NetApp, and Nutanix.
- **Lifecycle Consistency:** Cisco Intersight's service profiles and policies enable hardware identity and configuration to be treated more like software-defined infrastructure than individually configured physical servers. In this way, Cisco Intersight's powerful management and automation capabilities transform UCS-X into a truly programmable infrastructure platform, realizing the vision of composable infrastructure (IaC).
- **Flexible GPU Acceleration:** Cisco X-Fabric extends PCIe connectivity from compute nodes to chassis-hosted, shared devices such as GPUs, allowing specialized physical resources to be utilized without turning every server into a static, GPU-heavy configuration. This is extremely valuable for AI/ML use cases and GPU-accelerated VDI workloads.



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What Is Cisco UCS-X Series?

Cisco UCS X-Series is Cisco's modular compute platform, designed to combine the density and operational efficiency of blade servers with the flexibility and expandability of rack servers. Cisco UCS-X provides the power and flexibility to support virtualization, private cloud, databases, containers, VDI, and AI/GPU workloads.

Cisco UCS X-Series and Intersight: Economic Benefits

Modernizing on-premises compute environments with Cisco UCS X-Series and managing them with Cisco Intersight helped lower both IT cost and complexity, while also increasing business agility.

Cisco Intersight: At a Glance

Cisco Intersight is a systems management platform that helps IT Operations teams see, control, and automate Cisco UCS-X from one console.

Why Connection?

Connection offers products, technical expertise, services, and solutions to help your business adapt to the ever-changing technology landscape. Connection designs and deploys infrastructure solutions tailored to your unique business needs, enabling you to optimize spend while enhancing agility.

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Common Hypervisors and Use Cases for Cisco UCS-X:

The Cisco UCS-X modular platform offers unparalleled flexibility, running a wide range of applications and workloads. Rather than build separate server architectures for virtualization, databases, GPU workloads, and specialized applications, Cisco's approach with the X-Series was to enable customers to host a wide variety of workloads on a common platform that allows the customer's virtualization and application hosting strategy to more easily evolve. UCS-X is unique in that it provides a hardware abstraction layer underneath multiple virtualization and cloud operating models, while each physical server in the UCS-X chassis becomes relatively interchangeable, as its configuration is defined by software-based policies. Some of the most popular UCS-X use cases are listed below:

- **Enterprise Server Virtualization:** Cisco UCS-X supports a variety of hypervisors, virtualization platforms, and hyper-converged solutions. The most common are Nutanix AHV (HCI), Red Hat OpenShift Virtualization, and VMware vSphere Foundation (VVF), VMware Cloud Foundation (VCF), and Microsoft Hyper-V.
- **Mission-critical Databases, Private Cloud Data Lakes, Big Data, and Analytics:** Microsoft SQL Server, Oracle RAC Database, and SAP HANA are common UCS-X workloads, many with published Cisco Validated Designs for X-Series. The Cisco Data Intelligence Platform (CDIP) with Cloudera Data Platform supports a variety of private cloud data lake use cases and validated generative AI workloads.
- **VDI and Hosted Desktops:** Citrix Virtual Apps and Desktops can be deployed on a variety of UCS-X-hosted hypervisors such as Nutanix and vSphere. Of particular note, Cisco has published a UCS-X/OpenShift Virtualization/Citrix VDI reference architecture.
- **Containers and Application Modernization:** Red Hat OpenShift can run directly on UCS-X servers (bare-metal install), allowing the same compute architecture to easily support Kubernetes and container-based applications as well as conventional VMs.
- **AI/ML and GPU Infrastructure:** Cisco's approach to AI-ready Infrastructure is founded in part upon its unique X-Fabric architecture, which makes GPU resources available for AI inference and agentic AI, machine learning/MLOps, VDI, and graphics-intensive visualization workloads—with high-density multi-GPU configurations easily achievable.



Connection Cisco UCS-X Series and Intersight Professional Services:

Connection's Professional Services team delivers end-to-end expertise across the Cisco UCS/UCS-X platform, from design and deployment to optimization and lifecycle management. Our certified engineers apply Cisco best practices and Cisco Validated Designs (CVD) to help our customers to adopt a future-ready infrastructure that simplifies operations, enhances agility, and delivers measurable business value:

- **Design and Implementation Services:** Connection offers professional services to help organizations transition from existing compute and virtualization platforms. Our engineers guide you through planning, environmental readiness, platform deployment, and optimization, ensuring a smooth, low-risk adoption with minimal disruption. Connection can perform a full-stack greenfield deployment of Cisco UCS X-Series, upgrade or expand existing deployments, or consolidate your infrastructure.
- **Cisco Intersight Deployment and Migration Services:** Connection can deploy Cisco Intersight, expand its management scope or feature adoption, or migrate legacy UCS Manager (UCSM) configurations and server profiles.

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To learn more about Cisco UCS-X and Intersight Implementation Services, contact your Account Team today!

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