Cisco UCS: The Platform for Data-Intensive Applications

Your active data holds business value.

Imagine if you could connect data, people, processes, and things to unlock insight in real time.

Whether you need to inform, transform, or reinvent your business, the "freshness" of the data you access has a direct impact on the choices you make and the way that you operate. If you store, retrieve, and analyze data located in inactive or infrequently updated data warehouses, then the decisions you make are rooted in the past. Imagine what you could accomplish if your business decisions were based on real-time information.

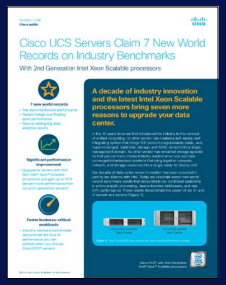
Active data creates insight

Active data is the only data that creates insight and security in real time. Where do you find it? It's hidden in the massive amount of unstructured data that's constantly being generated by the Internet of Things (IoT) and mobile, video, telemetry, and other intelligent devices. By activating this data, you can quickly analyze and act on information to make better business decisions.

Going digital and tapping into active data helps you learn what you don't know and how you can best adapt.

Our systems perform so that you can innovate, keep up with change, and prepare for whatever comes next.

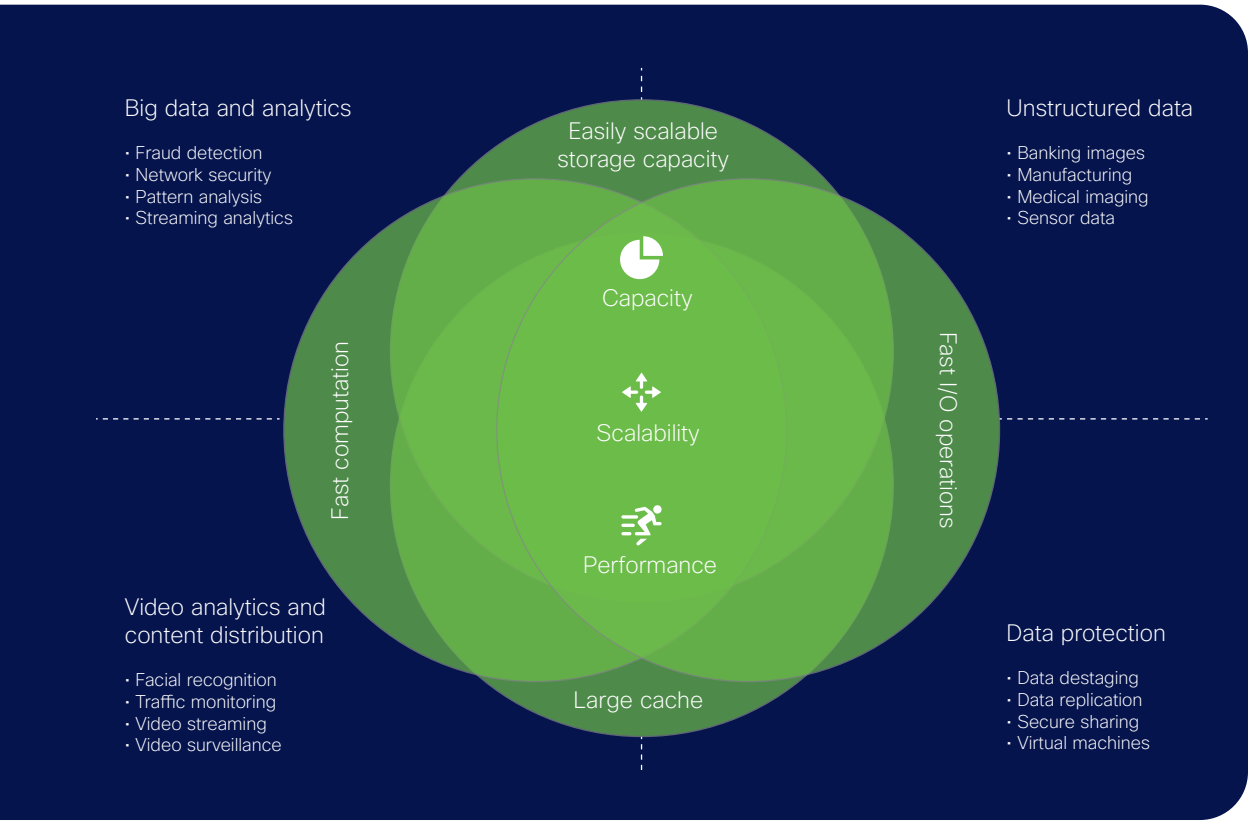
Cisco Unified Computing System™ (Cisco UCS®) has captured more than 150 performance world records, including the best TPC-H results at different scale factors.



Click here for additional benchmark results and performance briefs.

No two applications are alike.

Data-intensive applications and workloads come in all types and sizes. They place new and different requirements on IT infrastructure, with each workload requiring a unique mix of scalability, capacity, and performance.



- **Big data and analytics**. Pattern analysis—to enhance network security, detect fraud, see customer click patterns, understand business intelligence data, and more—requires data to be kept close to the processor for immediate results.
- **Video analytics and content distribution:** Capturing, storing, and analyzing video streams to perform traffic monitoring, facial recognition, video surveillance, and other video-based tasks requires fast processing.
- **Data protection:** Secure data sharing, replication of data to multiple sites, and movement of data from active (hot) storage to infrequently accessed (cold) storage requires extreme levels of I/O operations.
- **Unstructured data:** Accessing massive volumes of unstructured objects, such as online check deposit images, medical images, and sensor data requires easily scalable storage capacity.

Cisco UCS is excellent for active data.

If you can't tap into active data, the cause may be inflexible IT infrastructure that can't scale—or maybe your business can't afford the expense of public cloud storage when your data sets grow quickly and unpredictably. Transforming your IT infrastructure model and moving to systems that flex on demand is the first step toward improved agility and insight.

Use your active data in real time

The Cisco UCS platform is well suited to the storage, retrieval, and analysis of active data. In a single system, you can deploy the Cisco UCS blade, rack, and storage-optimized servers you need to deliver the right levels of computing, memory, storage, and I/O performance to your data-intensive applications.

A modular platform delivers versatility

Cisco UCS S-Series Storage Servers deliver cloud-like speed and versatility to match IT infrastructure to the size of active data sets and the processing needs of workloads. With dual-node capability, terabytes (TB) of local storage, high-speed networking, and Redundant Array of Independent Disks (RAID) features, these storage-optimized servers keep data active, productive, and safe for fast analysis. You can support:

- **Computing-intensive applications** that are structured for high CPU core counts (up to 48 CPU cores per node)
- **Cache-optimized applications** that use massive amounts of memory to act on active data and make results readily available (up to 1.5 TB of DDR4 memory per server node, up to 1 TB of Intel Optane™ DC Persistent Memory, and up to 4 TB of NVMe)
- **Massive storage capacity** for big data and analytics environments, streaming data, and more (up to 840 TB of local storage and up to 4 GB of RAID cache)
- **I/O-intensive applications** that move data quickly and can use dual 80-GB I/O controllers, 8- and 16-GB Fibre Channel interfaces, and 40 Gbps over 10 Gigabit Ethernet using bidirectional interfaces to deliver high throughput

Cisco UCS C240 M5 Rack Servers

With industry-leading performance and expansion capabilities, 2-socket, 2-rack-unit (2RU) Cisco UCS C240 M5 Rack Servers offer:

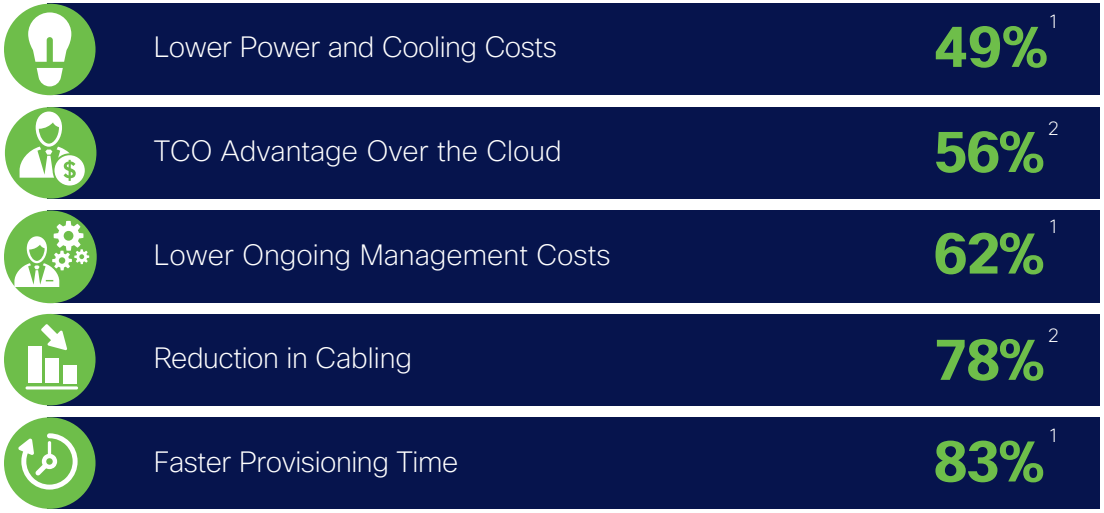
- Up to 28 cores per socket using Intel Xeon Scalable CPUs
- Up to 9 TB of Intel Optane DC persistent memory using 12 x 256 GB DDR4 DIMMs and 12 x 512 GB DCPMMs
- Up to 24 high-density DDR4 DIMMs
- Up to 26 hot-swappable Small-Form-Factor (SFF) 2.5-inch drives, including 2 rear hot-swappable SFF drives (up to 10 NVMe PCIe SSDs on the NVMe-optimized chassis version), or 12 Large-Form-Factor (LFF) 3.5-inch drives plus 2 rear hot-swappable SFF drives
- Support for a wide range of storage and I/O-intensive infrastructure workloads, from big data and analytics to collaboration
- Deployment as standalone servers or as part of a Cisco UCS platform

Cisco UCS delivers a balance of speed, economics, and performance.

IT efficiency

Your IT staff doesn't have time to waste. Our solutions configure automatically and are ready to power any workload at any time. Whether you need computing-intensive or storage-intensive servers—or both—the automation capabilities in Cisco UCS management software help your IT staff to deploy hundreds of servers and petabytes of storage capacity in minutes.

Operations—people, management, software, and facilities—are the largest cost in the data center, far greater than the cost of hardware. Our solutions run more workloads on fewer servers so that you have fewer components to buy and manage and reduced cabling, power, and cooling requirements. Routine tasks are automated for improved IT productivity.



[1] Cisco: Changing the Economics of the Data Center
[2] Cisco: The Economics of On-Premises Storage

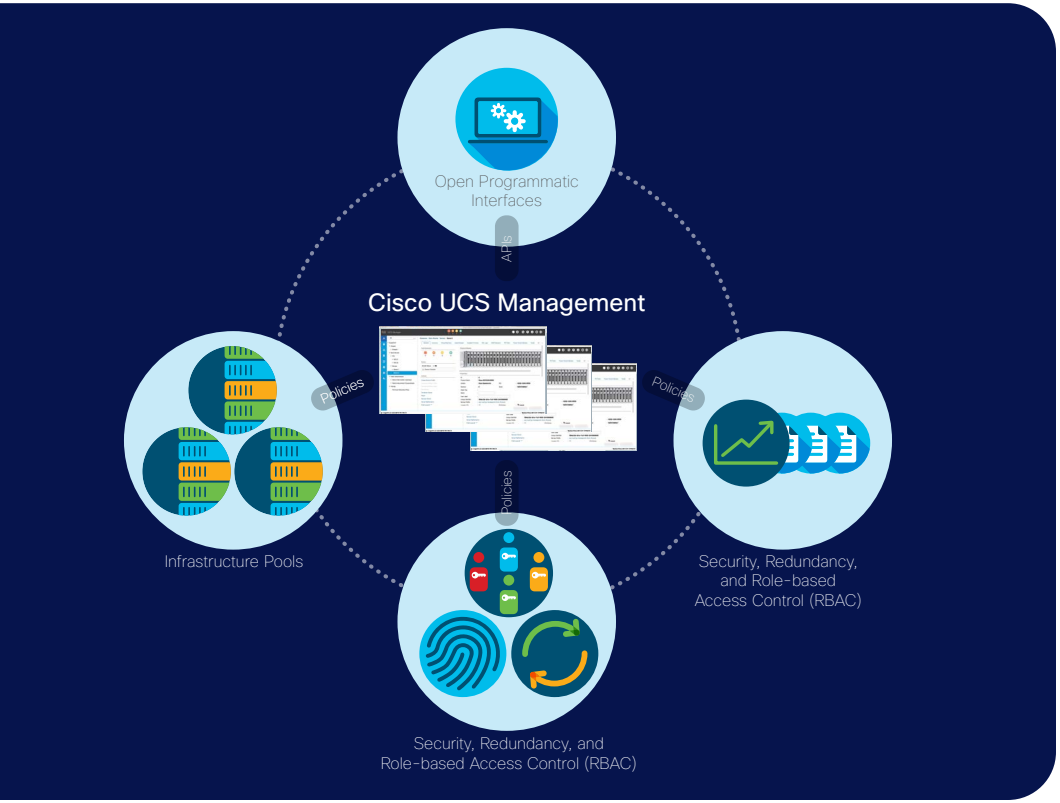
Cost-effective scalability

Cisco UCS offers options to power every type of data-intensive workload. You can purchase the systems you need today and scale your deployment up and out to hold more data in memory and quickly process data for faster results. If you need massively scalable, cost-effective storage for objects and files, you can use Cisco UCS S-Series Storage Servers to scale your software-defined storage infrastructure at your pace and at a smaller increment of scale than with traditional large-scale storage solutions. With the flexibility to choose what to scale and when to scale it, you can start with a small configuration and expand to petabytes of capacity, and you can distribute I/O operations among servers to accelerate I/O-intensive applications.

Cisco UCS makes it easy to manage IT infrastructure at any scale.

Whether you deploy a few local servers or thousands of systems around the world, managing your environment shouldn't be difficult. That's why we make it easy to manage and optimize all your computing and storage infrastructure in the same way and with the same tools. With roles, policies, and profiles built in, you can have confidence that the right people can deploy the right infrastructure for your data-intensive applications with no risk of configuration drift that can cause downtime.

If you need to use a private or hybrid cloud, our cloud management tools let you deploy your data-intensive workloads and associated active data in the right place at the right time for improved performance.



Our programmable infrastructure approach and unified management API work with your existing data center management and monitoring solutions so that you can optimize IT operations and improve visibility and control.

- The Cisco Intersight™ platform offers software-as-a-service infrastructure management. It allows you to manage all your Cisco infrastructure—traditional, converged, hyperconverged, edge, and remote and branch offices—through a single cloud-based GUI. An advanced recommendation engine provides notifications, insights, and actionable intelligence to ease daily operations. And an advanced dashboard gives you a global perspective on your infrastructure and its status, helping you proactively recognize situations that might otherwise develop into real problems.
- Cisco UCS Manager, which runs in the system's fabric interconnects, controls all parts of the system. Using configuration models, your IT staff can help ensure the consistent, error-free policy-based alignment of server personalities with workloads.

Let us help you find your solution.

Make your data work for you

If you need to unlock the full potential of your active data, consider Cisco UCS solutions. Our modular and versatile platforms can help you power your data-intensive applications and explore the massive amount of unstructured data that remains untapped. Let us help you go digital and connect your data, people, processes, and things to unleash insight in real time.

For more information

- Cisco UCS: http://www.cisco.com/go/ucs
- Cisco UCS S-Series servers: http://www.cisco.com/go/storage
- Cisco solutions for software-defined storage: https://www.cisco.com/c/en/us/solutions/data-center-virtualization/software-defined-storage-solutions/index.html
- Cisco UCS solutions for big data: http://www.cisco.com/go/bigdata
- Cisco UCS solutions for data and analytics: http://www.cisco.com/go/analytics.
- Cisco data protection solutions: http://www.cisco.com/c/en/us/solutions/data-center-virtualization/data-protection-solutions/index.html
- Cisco UCS solutions for the Internet of Things (IoT): http://www.cisco.com/go/iot

Innovation Partners

Cisco works with industry-leading partners to test, validate, and document joint solutions that you can get up and running quickly and with confidence. These Cisco® Validated Designs reduce risk and guesswork by giving your architects and administrators guidebooks for implementing solutions.

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- Multicloud: Anthos, Cisco CloudCenter, Cisco Workload Optimization Manager, Microsoft Azure Stack
- Next-generation AI, containers, and edge: Cisco Container Platform, NVIDIA

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