

Management Readiness: A Key to Rapid Adoption of Unified Computing

The idea of virtualization in the data center has been around for a long time. Though most agree that virtualization holds the promise of a more efficient, agile, and less costly data center, IT organizations have been consistently challenged to achieve its full promise. Disjointed solutions have made it extremely difficult for IT managers to plan an architectural direction for the data center that allows them to use existing investments while moving down the path of virtualization and the unification of data center technologies.

With the introduction of Cisco® Unified Computing System (UCS), things have changed. It delivers both the technology and the complete data center architecture to unite compute, storage, and virtualization into a single, highly available, cohesive system while using existing data center investments. With this new technology and architectural approach, the door is wide open to the full promise of the virtualized data center, including significant capital and operating expense savings, a dramatically simplified data center, and the business agility that comes with the power to provision resources in just minutes rather than days. The architecture also delivers the scalability you need for the next waves in data center evolution, including private clouds and intercompany clouds.

As with any emerging or advanced technology, you must have confidence in your management strategy for ongoing operations within your business-critical systems. The Unified Computing System simplifies management through the Cisco Unified Computing System Manager that serves as the central nervous system for UCS. The Cisco UCS Manager provides a unified management domain that simplifies and brings order to the challenge of management across compute, virtualization and storage. However, successful management still requires the dedication of skilled and valuable IT resources who can make the most of these streamlined management capabilities. With many IT departments already overcommitted, this can delay an organization's ability to adopt and benefit from a new technology like UCS.

Outtasking UCS management to Cisco experts can be an immediate solution, enabling you to adopt UCS sooner with confidence in high availability. It can be a transitional solution while your IT resources familiarize themselves with the new technology and architecture. It can also be a more permanent management strategy, allowing you to keep those valuable IT experts focused on applying the many benefits of UCS to the enablement of core business initiatives.

In this paper, we'll provide a detailed view of all aspects of network management recommended to realize the full benefits and successful management of the Cisco Unified Computing System. We'll also provide an overview of Cisco Unified Computing Remote Management Services, a ready management solution that can be a permanent approach or a transitional one, allowing you to accelerate adoption of unified computing and the full promise of data center virtualization.

Components of a Successful Management Solution

Without a comprehensive management solution, it is difficult to realize the full benefits of an emerging technology such as unified computing. Effective, ongoing management includes the following critical domains:

- Monitor, notify, and track issues
- Correlate and diagnose issues
- Track trends and remediate problems
- Develop a knowledge base
- Manage converged network issues
- Apply system/device patches, updates, and upgrades
- Perform moves, adds, changes: device and network
- Tune management tools
- Prepare reports

To succeed in supporting these critical objectives, you need integrated resources that synergistically work together to provide a transparent management experience. The tools, people, and processes are complementary and cannot exist as disparate entities. For example, tracking trends and documenting them in a knowledge base require a person to document the information using a methodical process into a tool that can present the information in a useful manner.

Requirements of a Successful Management System

So what does it take to successfully monitor and manage the Cisco Unified Computing System?

People with the Latest Expertise

The crucial element to any monitoring and management system is the people (remote or on-site): the engineers, managers, and technicians who are hands on with the network and devices. Their experience, training, and the availability of peer collaboration give them the expertise they need to proficiently respond to UCS incident, change, and problem management issues.

Training or retaining qualified individuals for the monitoring and management of any advanced or emerging technology can be a challenge. With today's economy, most training budgets are a fraction of what they should be, but the costs for training have remained high. As with any integrated system, multiple levels of expertise are required for UCS and include:

- Unified Computing System architecture
- Microsoft certified software engineer (MCSE)
- Linux essentials
- SUSE Linux
- Red Hat Linux
- VMware

While Cisco UCS Manager simplifies the integration of the many of the systems above into the overall system, they still exist within the data center, and a management engineer will need experience in each of those areas. Finding, training, and retaining qualified IT resources with such broad experience is difficult. Another consideration is whether the best application of such valuable resources is to ongoing monitoring and management activities or to the application of advanced technology benefits to the enablement of strategic business initiatives.

Management Tools

Management tools are the second critical element to a successful monitoring and management platform. You must employ integrated tools that synergistically work together to monitor, identify, correlate, notify, and respond to incidents. Additionally, the system must incorporate change and

problem management and reporting and must integrate well with the service desk. Constructing a sophisticated monitoring system that performs all of these functions is a daunting task, especially in a virtual environment. Commercial-off-the-shelf (COTS) products are not yet equipped to handle the latest technologies. They might be adequate for monitoring general-purpose server and network hardware and software, but they fall short when used with more sophisticated solutions. UCS' rich capabilities requires more nuanced monitoring such as VMware VMotion sickness alarms and multiple monitoring protocols. The initial purchase, coupled with follow-on development and maintenance costs, can be prohibitive. After a COTS product has been modified, the product vendor might not take responsibility for support or maintenance; updates, patches, and hot fixes might become problematic as well.

Processes

The use of a standardized process methodology is essential to enable the engineers and tools to work together. These processes assign responsibility, give direction, and provide chronology for the monitoring and management of an advanced technology network. The service desk, incident, change, and problem management must be included in detailed processes and procedures for the efficient and effective handling of network issues.

A Case for Outtasking

Successful data center operation requires the following:

- Data center and network monitoring 24 hours a day, 7 days a week
- System management to assist in developing processes including administration, backup, asset management, maintenance, and security
- Change management to plan for future upgrades and define the overall change management process
- Performance management to help identify best practices for monitoring system performance, responding to incidents, and optimizing the network infrastructure

Organizations that self-manage their data centers run the risk of devoting valuable IT resources to routine management instead of focusing their talents on applying the benefits of an emerging technology to enable competitive business strategies.

Outtasking UCS monitoring and management to experts can significantly reduce costs and enhance UCS availability and reliability, while allowing an organization's IT team to focus on using the full benefits of unified computing to support the core business. It's a comprehensive solution that can enable an organization to adopt UCS sooner, speeding the business benefits. It can be a permanent solution or a transitional one until the technology matures and self-management becomes a more viable option. This outtasking approach delivers many benefits without the need to give up data center control:

- Ability to adopt UCS sooner with confidence
- High network availability and reliability, enabling full benefits
- Lower risk of costly network outages and business disruption.
- Easy and quick access to the very latest technology expertise. Cisco network management team is closely integrated with the product development team who created the technology
- Maintain focus on core business strategy
- Service flexibility: a permanent or transitional service with elective elements

- Lower cumulative operating costs for the technology (lower total cost of ownership [TCO])
- More rapid return on your UCS investment

Faster Adoption

Waiting to adopt new technology can result in lost revenue, lost opportunities, and an inability to provide strategic value for the core business. Unified computing and data center virtualization can deliver the transformation to a more agile and responsive enterprise. An outtasked management service can help you accelerate the deployment of your UCS by providing operational performance and reliability as soon as your system is implemented. No waiting to train your staff on the technology and no need to reallocate resources to the day-to-day management. Expert engineers help make your transition transparent, safe, and fast.

Lower Costs

Any advanced technology in today's complex, business critical networks will require around-the-clock monitoring and management. Augmenting your IT staff or reallocating resources to management activities and maintaining their expertise through ongoing training as technologies evolve can be costly and can lessen the strategic impact of those valuable IT resources. Most organizations find that self-managing their data center is unsustainable in a fast-changing emerging technology market.

Outtasking monitoring and management allows you to reduce the initial and cumulative costs of allocating and training dedicated management resources for UCS. Using an outtasking approach helps your IT team become more proficient and knowledgeable about UCS. Working closely with your IT team in response to UCS incident and problem management issues, a management service supports and assists your IT team, helping the team to understand, assess, resolve, and prevent issues with your UCS. This interaction serves as an on-the-job training opportunity for your entire team. This type of knowledge transfer creates lasting value, even beyond your engagement with the service.

In addition to accelerating the business benefits of UCS and avoiding the dedication of valuable IT resources to management activities, additional cost savings are realized as a result of having leading experts, tools, and processes successfully managing the network, delivering high availability and reliability and avoiding costly network outages.

“If you look at what remote [operations] management does at a very base level—the value proposition to IT managers and C level executives is that we can manage more network, systems and elements at a lower price and better quality than you can internally or otherwise. It is a very compelling value proposition!”

Eric Goodness,
Gartner

Lower Risk

An outtasked management service lowers risk of network outage and business disruption when adopting new technologies. A complete set of services exist in the operate phase, protecting the technology investment, providing proactive access to expert support that understands both an integrated platform and the applications that run on it, and proactive monitoring and recommendations for ongoing improvements to increase performance. These capabilities are

critical for supporting the production environment. A management service makes managing day-to-day operations easier and frees the IT staff to focus on strategic projects that align with core business drivers. Managing an integrated platform requires expertise that Cisco has developed to provide rapid response for complex issues that arise in mission-critical environments.

Higher Return on Investment (ROI)

Early adoption of Cisco Unified Computing System with an outtasked management solution in place allows you to realize its benefits immediately and makes sure of the continuation of those benefits through faster resolution of system issues. A monitoring and management service works across the operate phase of the services lifecycle to help secure that return on investment. They can provide expertise, knowledge transfer, and focused service and support to help you protect your investment and get the most benefit from your Unified Computing System.

Partnering with your IT team, a monitoring and management service can help you lower costs, rapidly provision new applications, and meet more demanding service-level agreements with your user communities. A single point of contact service desk using industry standard management processes can provide an unprecedented level of day-to-day operate services.

Cisco Unified Computing Remote Management Services: A Comprehensive, Flexible Management Solution for UCS Operation

With a direct link to the UCS product team, Cisco Remote Management Services are uniquely qualified to monitor and manage a UCS environment. With access to the latest developments in UCS technology, upgrades and new application support are tested and deployed efficiently, without waiting for the time-consuming business filters most outside agencies must endure. We have evolved our data center services in lockstep with the UCS technology development team. All Cisco Unified Computing Services, including Unified Computing Remote Management Services, are a natural extension of Cisco's expertise and background in the data center.

Our engineers are currently monitoring and managing UCS units at the Cisco Technical Assistance Center (TAC) and on Cisco IT production units. Their hands-on experience can be invaluable to businesses as they incorporate this new technology into their data center.

Cisco Remote Management Services offer flexible standard and elective services elements that may be combined to deliver a comprehensive, customized monitoring and management solution, without requiring an organization to give up network access and control. The standard service provides physical and logical monitoring for all unified computing hardware and software elements, coupled with incident management, problem management, and service level management.

Standard Service

- 24 hour monitoring
- Incident resolution: receive, respond, resolve P1–P4 tickets
- Problem management: root cause analysis
- Service level management: standard changes and reports
- Customer web portal

Elective Service

- Configuration support
- Customer requested changes

- Application updates and patches

Elective Service features include:

The elective service option goes beyond basic monitoring and management to provide you with access to Cisco engineers to support change, release, configuration, and patch management. Delivered as a usage-based block of monthly hours, this service enables you to use Cisco expertise for customer requested activities and changes to your unified computing environment.

Prepaid engineering hours may be used for the following:

- Configuration changes to Cisco software and devices
- Move, add, change, or delete any component of a managed device
- Identify patch, BIOS, and driver versions of installed system components
- Deploy a new blade into a chassis and update service profile
- Install a Windows server on a unified computing blade and chassis
- Apply quality of service (QoS) settings to the traffic on a blade and chassis
- Deploy patches to servers
- Upgrade server BIOS
- Upgrade mezzanine card drivers

Advanced Performance Monitoring

Advanced Performance Monitoring (APM) augments Remote Management Services with a means to baseline and monitor performance of business-critical applications across your network. This service provides end-to-end service level agreement monitoring of application response time, fault isolation, and reporting and gives critical visibility into application packets as they flow through your network to and from the data center. APM measures application round-trip time, server response time, and data transfer time and delivers information on individual application bandwidth utilization. Data can be provided for nearly any circuit—physical or virtual—in your network.

Conclusion

Cisco Unified Computing Remote Management Services are available through Cisco and Cisco Certified Partners as a comprehensive, permanent, or transitional management solution that enables you to move forward with Cisco Unified Computing and data center virtualization today. The services are flexible and can be customized to meet the short-term and long-term needs of your organization, allowing you to keep network control and successfully manage the Cisco Unified Computing System. They also help lower your total cost of ownership for UCS. There's no need to wait to begin the true virtualization of your data center, with a complete architecture that uses existing investments and positions your organization for the future.

Why Cisco Unified Computing Services

Using a unified view of data center resources, Cisco and our industry-leading partners deliver services that accelerate your transition to a unified computing environment. Cisco Unified Computing Services help you quickly deploy your data center resources and optimize ongoing operations to better meet your business needs. Using an end-to-end architectural approach, proven methodologies, and industry best practices, we help you realize the full benefits of unified computing and help mitigate risks as you evolve your data center. Cisco's award-winning support and remote management services help you maintain a high level of performance with your unified

computing system. Cisco has more than 14 years of experience in delivering network management and monitoring services. With a true global presence, Cisco currently manages more than 60,000 devices in over 75 countries around the world.

For More Information

For more information about this and other Cisco Remote Management Services, visit www.cisco.com/go/rms or contact your local account representative.



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