Basic Application & Server Monitoring
Federal Data Center Consolidation Initiative (FDCCCI)

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FDCCI – Basic Application & Server Monitoring

Introduction

Over the last decade, duplicate data centers have sprung up across the nation representing billions of dollars of inefficient capital expenditure. The President’s directive to the Office of Management and Budget (OMB) to reduce the number of these data centers by 40% to save energy and money is unique in itself; as it applies to both civilian agencies and the Department of Defense (DoD).

By consolidating data centers and cutting spend on utility costs, underutilized hardware, duplicate software and redundant operations centers, agencies can join forces and take advantage of transformational technologies; technologies that enable cloud computing to make IT infrastructures more efficient through virtualization and standardization of software and processes.

This paper discusses how basic application, server, and network monitoring is valuable from the early stage of data center consolidation planning to the transition to these consolidated operational environments while ensuring performance, availability, and reliability expectations are achieved. By monitoring applications, both, before and after the transition, the impact to the mission of the agency will be known, and should help efficient IT infrastructures materialize throughout the nation with the minimum impact to budget.

Challenges

Many datacenters don’t have suitable monitoring tools today; but by having them in place to monitor the current systems, and more importantly monitor the applications running on those systems, the baseline (or current) application characteristics are known. When the applications are migrated to the new consolidated data center, the same performance monitoring is applied so quantitative comparisons can be made between the old and new systems.

When moving to new consolidated environments, a lot of people will complain if the applications are slower. They will think the networks are slow or the servers aren’t working or they’re having performance issues. By having quantitative performance metrics (both before and after), IT professionals will know right away which applications are performing worse than in their legacy environment.
Tools that can discover what systems and applications are running in a datacenter are also important, especially with older data centers that may be running really old applications on really old systems that few people are aware of (except for the users of those potentially critical applications). By monitoring the network and servers to detect (discover) which applications are running where, critical applications may be discovered that would otherwise be overlooked for in transition planning.

Simplifying the execution of the FDCCI with IT network management tools that provide not only continuous monitoring, but also aid with the initial stages of discovering all the current systems and reporting on them, before and after, is vital to ensure that performance and efficiency expectations are met.

Application and Server Monitoring

What is Applications and Server Monitoring?

Continuous application, server, and network monitoring provides a constant view of what’s going on with the performance, availability, and reliability of all systems and applications within a datacenter. Application and server monitoring provides a means to monitor virtualization from the datacenter, to the virtual machine, to the underlying network infrastructure.

IT monitoring and management tools should automatically discover applications and servers, deliver the pertinent information needed to make correct decisions, determine the underutilization of systems, identify systems that aren’t needed anymore and remove them from the network, or how systems can be better utilized to better fit the needs in the new virtual environment. These tools also should provide a means to monitor virtualization from the data center, to the virtual machine, to the underlying network infrastructure.

While automatically discovering systems is important, proactive monitoring of the performance of those systems is essential to keep maintenance and support costs down. You should be able to quickly detect, diagnose, and resolve performance problems and outages—before you start getting calls from the end users.

Experts recommend base lining current applications and servers during the early stages of planning to quickly establish value of applications before migrating them to a consolidated environment. Therefore the performance of each application can be measured as it is changed from one hosting environment to another. You should monitor performance and user experience for virtually any application for viewing trends, capacity, and performance giving you the insight you need to make intelligent decisions.

By monitoring network traffic you can identify which users, applications, and protocols are consuming the most bandwidth, highlight the IP addresses of the top talkers to reduce bandwidth and performance issues, and connect the dots for your traffic arriving from designated ports, source IPs, destination IPs, and even protocols, to application names you can easily recognize.

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And, what about those complaining users that they're connection is slow? Monitoring the response time for all of your websites & internal customer-facing, SaaS, & cloud-based applications to obtain metrics before and after the virtualized environment is up and running. Powerful and scalable software takes the mystery out of tracking the response time and health of your critical web applications and websites before your users feel it.

**Why is it Important?**

Application, server and network monitoring during the assessment phase will reduce the associated per-CPU cost that has to be moved for consolidation, limits the list of software that must be maintained after the transition, and provides a baseline for performance expectations in the new virtual environments.

**Virtualization**

A virtualization monitoring and management tool should be a part of any technology transformation strategy to virtualized environments as it provides unified capacity planning, VM sprawl control, performance monitoring, configuration management, & chargeback automation for your virtualized environments are important components for planning and the execution of a successful virtualization environment. It should also include a customized dashboard that’s available for monitoring virtual machines in a virtual desktop infrastructure (VDI).

With virtualization comes significant Storage Area Networks (SANs) and you’ll want take full control over this infrastructure. A powerful SANs systems monitoring and management software that gives you a way to quickly and easily monitor storage performance, isolate hotspots, automate storage capacity planning, map VMs to physical storage, analyze storage usage, reclaim storage space, manage fibre channel switches, gain visibility into your multi-vendor SAN fabric, and more.
Cybersecurity

Let's not forget about Cybersecurity in this new virtualized environment. These new datacenters need a powerful proactive response mechanism that can monitor and perform log and event analysis from these multi-vendor applications, systems and network against security threats. You need the means to identify and resolve problems quickly, ensure compliance with internal and external regulations, and achieve proactive network defense in real-time. Know exactly what's happening, when it happens across your entire infrastructure with cross-device event correlation, alerts and proactive responses. Learn more about SolarWinds solutions for Cybersecurity.

SolarWinds Monitoring and Management IT Software

SolarWinds solutions for government deliver scalable, cost-effective, enterprise-class products and have received certifications and approvals from ARMY CoN, AIR FORCE APL, NAVY DADMS, FDCC/USGCB. In addition, a number of SolarWinds products are FIPS compatible, meet DISA STIG requirements, and are in process for Common Criteria EAL2 certification.

**Server & Application Monitor** monitors performance and user experience for virtually any application for viewing trends, capacity, and performance giving you the insight you need to make intelligent decisions.

**Network Performance Monitor** enables you to quickly detect, diagnose, and resolve network performance problems and outages—before you start getting calls asking if the network is down

**NetFlow Traffic Analyzer** captures and analyzes Cisco NetFlow, Juniper J-Flow, IPFIX, sFlow, & Huawei NetStream data to deliver a complete picture of network traffic, identifying who and what are consuming your bandwidth.

**Storage Manager, Powered by Profiler** provides end-to-end control over your shared storage environment with storage management for virtualized environments.

**Synthetic End User Monitor** monitors the response time for all of your websites & internal customer-facing, SaaS, & cloud-based applications to obtain metrics before and after the virtualized environment is up and running.

**Virtualization Manager** provides unified capacity planning, VM sprawl control, performance monitoring, configuration management, & chargeback automation for your virtualized environments.

**Patch Manager** extends the capabilities of your existing Windows Server Update Services (WSUS) infrastructure, enabling you to deploy, manage and report on Microsoft and non-Microsoft patches from a central point of control in your agencies environment.

**Log & Event Manager** captures event log data to identify and resolve problems quickly, ensure compliance with internal and external regulations, and achieve proactive network defense in real-time.
Summary

To take advantage of transformational technologies, an effective FDCCI strategy should include “Basic Application and Server Monitoring” before and after the transition to meet the goals set forth for less real estate and less power wasted by eliminating physical servers and create efficient, virtualized datacenters, nationwide. Learn more about SolarWinds solutions for Federal Data Center Consolidation.