are you managing your virtual and physical servers as part of your underlying infrastructure?
CA Infrastructure Management is the basis of a comprehensive solution for top-to-bottom visibility and control for your infrastructure. Increase the value of CA Infrastructure Management and the quality of your services with integrated physical and virtual server management.
executive summary

Challenge
Infrastructures are increasingly more diverse and complex. Comprehensive, integrated network and systems management is a foundational requirement of infrastructure management and, with steady growth in adoption of virtualization and convergence of service delivery architectures, systems management has added layers of complexity that challenge IT staffs.

Opportunity
Servers—whether virtual or physical, on-premise or off—are essential to an organization’s business services. If the network is the plumbing, servers are the fixtures. CA Systems Performance for Infrastructure Managers and CA Virtual Assurance for Infrastructure Managers from CA Technologies provide a comprehensive solution for visibility and control of your infrastructure to help manage large-scale physical and virtual server environments and reduce management costs.

Benefits
Infrastructure management, with integrated systems management, helps enable IT and service delivery teams to keep staffing levels small, find and fix problems faster and to be more proactive in avoiding issues altogether, while giving them the tools they need to optimize physical and virtual infrastructure assets. Read on for customer stories about:

- Faster, easier server configuration and provisioning
- Achieving dramatically higher utilization rates and lower costs
- Building efficient private clouds
- Transforming data centers
Section 1: Challenge

Comprehensive infrastructure management

Infrastructures are increasingly more diverse and complex. IT and network operations staffs are challenged to continually manage new technologies, to automate to keep up with rapid change and to manage aspects of the infrastructure not entirely under their control, such as cloud services. In addressing these complexities it is easy to overlook the most basic and essential aspects of infrastructure management—a solid view of the top-to-bottom delivery system for business services.

Top-to-bottom infrastructure management can involve all network components, systems, databases, voice infrastructure, environmental systems, non-SNMP/non-IP equipment and proprietary element management systems. CA Infrastructure Management offers capabilities for managing all these aspects of enterprise and service provider infrastructures.

Comprehensive, integrated network and systems management is a foundational requirement of infrastructure management. With steady growth in adoption of virtualization and convergence of service delivery architectures, such as Cisco Unified Computing System™ and VCE vBlock™, systems management has additional layers of complexity that challenge IT staffs.

Comprehensive virtual and physical systems management is necessary to maintain accurate and timely data on all servers and resource pools. Incorporating systems management into an overall infrastructure management strategy is the most efficient route to comprehensive top-to-bottom visibility and control.

Section 2: Opportunity

Optimize your physical and virtual server infrastructures

Servers—whether virtual or physical, on-premise or off—are essential to an organization’s business services. If the network is the plumbing, servers are the fixtures. CA Systems Performance for Infrastructure Managers and CA Virtual Assurance for Infrastructure Managers from CA Technologies help ensure that your server infrastructure can fully support the business services that IT and service delivery teams provide.

CA Systems Performance for Infrastructure Managers and CA Virtual Assurance for Infrastructure Managers are both add-on solutions with out-of-the-box integration to CA Technologies availability, performance and network flow analysis technologies. Combining these system management solutions with CA Infrastructure Management—which combines the CA eHealth® performance management technology, the CA Spectrum® fault management technology, the CA NetQoS ReporterAnalyzer™ network flow analysis technology and the CA Performance Center central troubleshooting console—you have a comprehensive solution for visibility and control of your infrastructure to help manage large-scale physical and virtual server environments and reduce management costs.
CA Systems Performance for Infrastructure Managers enables you to perform physical systems/operating system monitoring and CA Virtual Assurance for Infrastructure Managers extends your management capabilities to include virtual environments. Together they provide integrated physical and virtual management for multi-vendor, multi-platform technologies.

**Manage physical or virtual infrastructures...or both**

CA Virtual Assurance for Infrastructure Managers and CA Systems Performance for Infrastructure Managers are separate products but share the same architecture, user interface and design characteristics, giving you the flexibility to license either one or both while only having to learn one approach to systems management. Based on the licensing selected, you are entitled to virtual management or OS management or both.

**Figure A.**

View your physical systems topology with CA Systems Performance for Infrastructure Managers and gain the ability to drill down for a rich set of metrics.
This simplifies integrating systems performance into your environment, regardless of your requirements. For example:

- You would use CA Virtual Assurance for Infrastructure Managers if:
  - You have a virtualized environment like VMware®, Microsoft Hyper V®, IBM LPAR®, Solaris Zones or Cisco UCS and need a consolidated view of your virtualized hosts and all the layers of your virtual environment.

- You would use CA Systems Performance for Infrastructure Managers if:
  - You have a virtualized environment and want deeper level visibility (e.g., processes, log monitoring) of the virtual machines (VMs) running inside the virtualized environments, including monitoring operating systems such as Windows™, Linux™ or UNIX™.
  
  or

  - You need monitoring of non-virtualized servers running operating systems such as Windows, Linux and UNIX.

With the proliferation of virtual infrastructure, customers commonly want virtual monitoring as well as deeper-level monitoring of guest operating systems, and use both products together.

**Figure B.**

Gain physical to virtual visibility in a single view with CA Virtual Assurance for Infrastructure Managers.
Form and function

Both CA Systems Performance for Infrastructure Managers and CA Virtual Assurance for Infrastructure Managers instrument with lightweight agents and provide a graphical user interface that enables centralized agent deployment and configuration, which helps improve the efficiency of day-to-day management.

Role-based security accommodates teams with multiple tiers of management staff and varying degrees of access privileges. Also included in the software is the Service Response Monitoring technology (formerly CA Service Availability) that performs repetitive, regular tests of IT services, such as connectivity or Web page availability.

Integration of CA Systems Performance for Infrastructure Managers and CA Virtual Assurance for Infrastructure Managers with CA Infrastructure Management provides the opportunity to present real-time topology characteristics and the critical metrics captured by these system management agents within existing dashboards and reports. This gives you a tightly integrated view into performance and availability across all network and virtual and physical system components.

Figure C.

CA Virtual Assurance for Infrastructure Managers feeds topology and real-time status information about the virtual systems environment to CA Infrastructure Management.
Section 3: Benefits

Increase utilization and control while reducing cost and complexity

The beneficial effect from virtualization is impressive, as many organizations have found, across cost, space and energy savings. IT and service delivery teams have achieved other significant and measurable benefits from virtualization, such as agility to meet peak demand that gives them a competitive advantage in their own product or services market.

The benefits of virtualization, however, can only be maximized when a well-thought-out management strategy is in place. Full top-to-bottom visibility into your infrastructure, bolstered by context-driven drill downs into any technology domain, is the best way to maintain control. Infrastructure management, with integrated systems management, enables IT and service delivery teams to keep staffing levels small, find and fix problems faster and to be more proactive in avoiding issues altogether while giving them the tools they need to optimize physical and virtual infrastructure assets.

Figure D.

The physical and virtual systems management solutions send real-time performance data to CA Infrastructure Management, where the administrator can have a wide range of reports produced, including a Top 10 report for the enterprise.
“The effort to provision and configure servers went from hours to minutes while reducing the likelihood of errors.”

Alquin Gayle, Advisor for Infrastructure Engineering

Faster, easier server configuration and provisioning

Server management can prove time-intensive without streamlined provisioning and configuration processes.

With almost 1,900 servers employed across the company, server management has always been a priority for CA Technologies. As CA Technologies Global Information Systems (GIS) transformed its systems management to CA Systems Performance for Infrastructure Managers, it was able to make significant efficiency gains on a number of routine tasks.

“Instead of setting policy and agent configurations on each individual server, we can now centrally create a policy using CA Systems Performance for Infrastructure Managers and push it out to numerous servers,” comments Alquin Gayle, Advisor for Infrastructure Engineering, CA Technologies. “The effort to provision and configure servers went from hours to minutes while reducing the likelihood of errors.”

With 50 percent of servers at CA Technologies now virtualized, the next step in the transformation will be to deploy CA Virtual Assurance for Infrastructure Managers. As Gayle explains, “With CA Virtual Assurance for Infrastructure Managers, we will be able to automate processes more easily, such as initiating a service restart or generating a specific action on a drive nearing capacity.”

A large U.S.-based grocery retailer with 13,000 servers finds the ability to push out agents to remote servers not just beneficial, but indispensable. This retailer maintains configuration profiles on its central console and manages its vast server environment from that central point.

Achieving dramatically higher utilization rates and lower costs

The main driver for virtualization has been higher server utilization rates that lead to significantly lower capital costs for hardware—fewer servers are required and procurements are avoided as service demands increase. As long as you can manage your virtual resources, virtualization is a clear financial winner.

A large furniture retailer grew its virtualization footprint from zero to 95 percent in approximately four years and has been able to manage several hundred virtual machines with just four members of IT staff. According to its Director of IT, “We are now achieving server CPU utilization rates of up to 60 percent, compared to 15 percent prior to virtualization.”
CA Infrastructure Management

Figure E.

CA Virtual Assurance for Infrastructure Managers passes performance information to CA Infrastructure Management, which displays VM performance trends based on historical data.

Saving data center space and going greener

One of the largest, global hospitality companies understood the benefits that could result from virtualization, including:

- Reduced hardware spend
- Reduced data center space requirements
- Support for corporate green initiatives

However, without the ability to manage the virtual environment, the firm experienced increased management complexity and unacceptable deployment timelines. With implementation of CA Virtual Assurance for Infrastructure Managers, it experienced first-hand the benefits that result from managed virtualized environments:

- Reduced time to deploy infrastructure by 400 percent
- Reduced staffing requirements by 50 percent
- Reduced hardware spend by 33 percent
- Achieved a 100% ROI in six months
- Realized initial goals of less hardware + less space + less power = greener IT
Transforming your data center

A large financial services organization with over 50 data centers initiated a data center transformation project to improve quality of service operations, reduce operating risks (eliminating single points of failure and speeding the time to deliver new capabilities, including environmental changes driven by security needs, patches and upgrades and industry/regulatory compliance) and embrace a 10-year cost savings plan that includes an enterprise-wide service delivery model, optimizing the use of global resources and a five-year process to consolidate data centers.

The company benefitted from the integration of physical and virtual server management into its existing infrastructure management tools, CA Spectrum and CA eHealth.

This allowed it to manage several virtual platforms and operating systems, including:
- VMware vSphere
- IBM Power Systems-based LPARs
- Windows Server
- IBM AIX
- Red Hat Enterprise® Linux

The firm uses CA Virtual Assurance for Infrastructure Managers and CA Systems Performance for Infrastructure Managers to configure OS agents and to monitor virtual server environments. The deployments are controlled and can be scheduled at specific times or staggered across a time period. It also uses the audit and history capability available from both solutions.

Integrated server management has significantly increased the visibility across its data centers spread around the globe. The organization has also been able to increase virtualization adoption by having a consistent way of managing its physical and virtual servers.

Building your own private cloud—efficiently

CA Technologies Labs on Demand provides a private cloud service that can be accessed remotely by developers around the world. With development teams spread across multiple locations, demand for test systems can vary considerably—especially as products move through the software development lifecycle. As George Watt, Vice President, Software Engineering, BU Operations at CA Technologies, comments, “Depending on whether a team is working on a product at the design, development, or beta phase, their need for servers can vary greatly, which means each team has its development peaks and valleys in demand throughout the year.”

Providing enough servers to fulfill every peak in demand is simply not economically feasible, and could result in expensive IT assets lying idle for up to 70 percent of the time. “We want to be able to provide everyone with all of the modern equipment they desire, while keeping costs under control,” adds Watt.

CA Technologies Labs on Demand have a virtualization rate of about 84%, not surprising for a cloud service. To ensure maximum efficiency and utilization, CA Technologies uses its own solutions to automate server provisioning, system builds and the reservation process. Labs on Demand, deployed in 2005, has performed tens of thousands of server provisions. In fiscal year 2010 alone, they provisioned...
“Deploying just one ‘green’ blade server can enable us to create 700 or more virtual machines, and we typically have more than 4,000 virtual servers active at any time.”

George Watt, Senior Advisor, Business Unit Strategy, CA Technologies

26,500 servers. As well as controlling operational overhead, CA Technologies is also keen to control its impact on the environment. The company’s thousands of research and development (R&D) servers were spread across more than 50 locations, all of which needed cooling and power.

CA Technologies Labs on Demand has produced significant benefits:

- It has significantly consolidated the number of developer test labs. A 2008-2009 initiative, Project Simplify, consolidated 44 labs into one and saved $12.4 million in real estate costs. Consolidation is an ongoing initiative.
- By automating the build and provisioning process for test environments, CA Technologies Labs on Demand saved more than 33 years of developer time in FY10, which relates to approximately $4-5 million in productivity gains.
- It boasts an amazing server-to-admin ratio of 1,200:1; previously it was 60:1.
- Since 2008, it has eliminated 6,200 metric tons of greenhouse gas emissions.

Section 4:
The CA Technologies advantage

CA Infrastructure Management is fully in line with the vendor-neutral, platform-neutral approach that is a strength and differentiator for CA Technologies. CA Infrastructure Management delivers best-in-class infrastructure availability and performance management, and extensive traffic analysis across diverse, multi-technology networks and systems. With top-to-bottom visibility and control over your entire infrastructure, you can better manage performance and capacity to help assure the availability of your critical business services.

CA Technologies has 30 years of recognized expertise in delivering robust, reliable, scalable and secure management software for enterprises, service providers and government agencies. CA Technologies has made an unparalleled commitment to emerging technologies and service delivery paradigms such as virtualization, SaaS and cloud, and has forged virtualization-specific industry partnerships with leaders such as VMware, Microsoft, Cisco, Oracle/Sun, IBM, Citrix and Red Hat.

CA Technologies unites professional, support and education service elements under a single umbrella, providing your entire IT organization a seamless and fluid customer experience.

- CA Services gives you insight and control over technology and deployment efforts to help reduce risk and accelerate time-to-value.
- CA Education transfers information and insight to your staff to help maximize the value of your CA Technologies investment.
- CA Support focuses on your continuous success with trusted expert help and robust self-service tools.
Section 5: Next steps

Are you challenged with integrating your physical and virtual server management into your infrastructure management solution?

To learn more about the Virtualization Management portfolio of solutions from CA Technologies visit ca.com/virtualization.

CA Infrastructure Management delivers a more effective way to manage IT and service delivery infrastructure, and it integrates with many of your existing investments in CA Technologies, third-party or custom infrastructure and operations management tools. To learn more, and see how CA Technologies software solutions enable other organizations to improve service assurance, visit ca.com/infrastructure-management.