

# OPTIMIZE IT.



## An Overview of Data Center Optimization

THE SITUATION | THE CHALLENGES | THE SOLUTION | THE BENEFITS



## THE SITUATION

The time to compress the data center is now. Next-generation technologies are creating new possibilities. The traditional data center just can't deliver the efficiencies needed by new technology. Cloud, virtualization, scalable networking and applications demand an optimized data center.

A data center optimization solution can help you make the most of your current investment and move boldly into the future.

**82%** of server workloads will be running in virtual environments in 2016, which could increase complexity and operational costs.<sup>1</sup>

## THE TRADITIONAL DATA CENTER STRUGGLES WITH:

## Underutilization

Outdated technology preventing efficient use of data center resources.

## Limited Resources

Shrinking budgets and limited space placing restrictions on system improvement.

## Manageability

Multiple environments with a nonuniform set of systems hindering performance and scalability.

## Budgets

Bloated data centers and power and cooling demands increasing costs.

# 15%

of servers in the data center  
are ghost servers.<sup>2</sup>



## THE CHALLENGES

With demand for services exploding and costs growing, the data center must be tamed. Complex legacy systems bogged down in underutilized clusters are taking over. Worse yet, they have become hard to manage and maintain. And they drain your budgets with their power consumption.

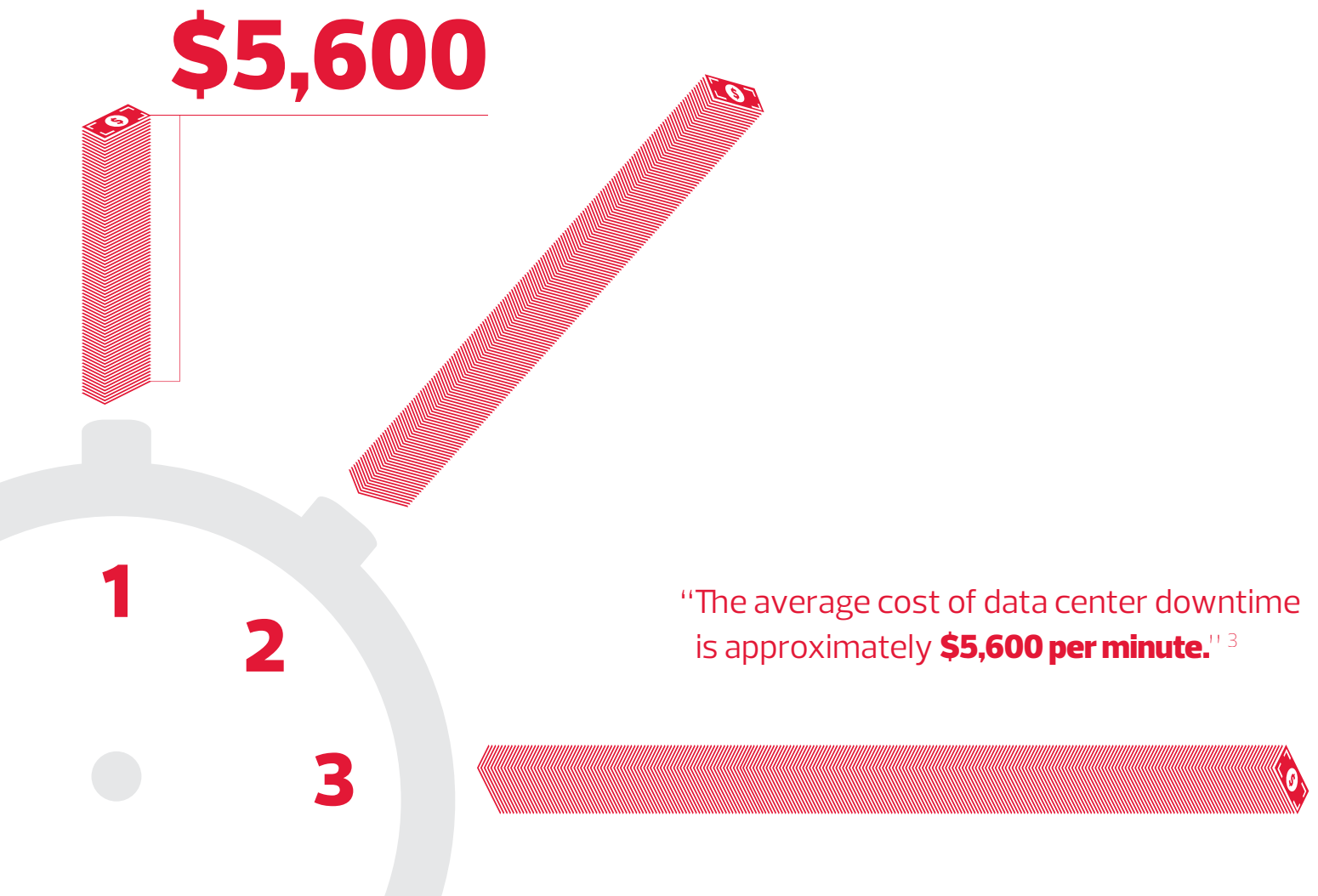
### WATCH FOR THESE WARNING SIGNS:

**Complexity** – A lack of standardization requires too many specialists handling too few services.

**Underutilization** – Processing power not harnessed. Storage left idle. Power wasted. It all boosts your cost of ownership.

**Sprawl** – Single-server solutions are filling your data center. Storage and backups consume your staff's work day.

**Tools** – Your ability to prepare for the future is constrained by your inability to recognize current issues.



## THE SOLUTION

# Simplicity is the solution.

Once budgeted as a “nice to have” for forward-thinking organizations, today, optimization has become more of an imperative. Thus, the data has been transformed from the world of physical resources to that of a virtual one.

**Our approach to optimization may vary based on your present data center environment. A solution architect will help you determine what is best for your organization.**



1

### **Resource Optimization**

allows you to address your weakest points and build from there, letting you capitalize on your present assets.

2

### **A Reference Architecture**

allows you to write a blueprint for best practices that provides confidence in future plug-and-play compatibility. So you can leverage your present policies and procedures into a streamlined solution.

3

### **Convergence**

is the holistic approach, creating an all-in-one solution.

## THE COMPONENTS OF OPTIMIZING THE DATA CENTER

### ☑ **Virtualization**

The virtual machine (VM) enables you to unify your systems, pooling resources into a centralized environment. Individual VMs can be integrated, improving utilization.

### ☑ **Blade Servers**

These hot-swappable servers are highly configurable and cost-effective solutions that free the data center.

### ☑ **Storage**

Virtualizing creates a sea of storage for all IT needs and does away with the ponds of over- or under-taxed storage. Instead, co-owned dynamic repositories adapt to application need and network speed.

### ☑ **Network**

Load balancing the network allows your systems to work as they were designed. Working as the conduit between your server and storage, the network "highway" is freed of bandwidth gaper's blocks.

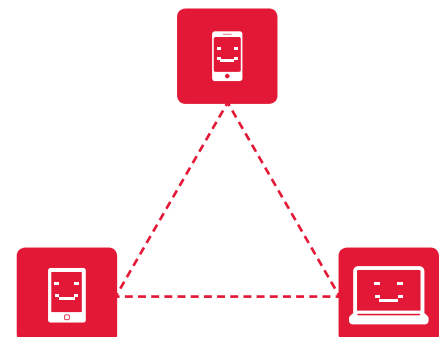
### ☑ **Power & Cooling**

Latest technologies actually target cooling only when needed. Add the reduction of sprawl, and your operating costs are cut dramatically.

### ☑ **Management | Tools**

One of the most overlooked parts of optimization is what it can do for your organization's IT personnel. Tools become integrated and monitoring is proactive. Systems are orchestrated and automated. And your staff can focus on other projects.

- Orchestration and automation tools – Software for a virtualized environment that helps perform repetitive and expensive tasks.
- Infrastructure management tools – DCIM tools empower the quick review of the system's assets and how well they are being utilized and deployed.



## THE BENEFITS

The adage that less is more is never as true as it is in the data center. The reward of optimization is fewer servers doing more. Smart storage and backup, a network with improved scalable capabilities and lowered operating costs due to reduced power and cooling. No matter what approach you take, optimization is the roadmap to productivity and cost savings.

### OPTIMIZATION ALLOWS:



#### **FLEXIBILITY**

With an optimized data center, new technologies can be adopted without the fear of future compatibility, including compatibility with the cloud.



#### **MANAGEABILITY**

When all components are working together, streamlined and in control, you can focus on driving your organization.



#### **PROTECTION**

Backup is faster, recovery systems are improved and risk of data loss is minimized.



# 75%

of organizations with a program to manage data center power demand have reduced IT energy costs.<sup>4</sup>

## WHY CDW?

As your data center expands, you need a partner that can help you plan, consolidate and optimize. We can help with the people, the products and the plan to reel in your data center.



### THE PEOPLE

Along with an account manager to guide you through the planning and implementation, our experienced and industry-certified solution architects can recommend a customized path for your organization to follow.



### THE PRODUCTS

Partnerships with leading vendors like NetApp, VMware, Citrix and HP provide us with the depth of experience to evaluate and address your needs. We also offer hosting/co-hosting services, giving you the option for present or future use of the cloud.



### THE PLAN

We can help you evaluate your data center to find opportunities in storage, networking, servers, virtualization and power and cooling. We'll work with you to find the best way to lower your IT costs, while leveraging your existing technology.

## WE CAN HELP

### DATA CENTER AND DISCOVERY WORKSHOPS

Meet with a data center solution architect to assess the state of your data center and develop an IT strategy in our data center workshop. Then we'll recommend several of our discovery workshops based on your needs.

### CONFIGURATION SERVICES

We can help build a preconfigured solution for your data center in our state-of-the-art configuration center. Our services include hardware, software rack configuration, BIOS and firmware.

## OUR PARTNERS



NetApp®

NetApp® unified storage innovations improve data center efficiency and enhance virtualization and consolidation. NetApp introduced you to unified storage systems more than a decade ago. Their continued success and commitment to innovation has resulted in an architecture unified not only across protocols and disks, but also in storage efficiency, processes, data management and data protection. Harness NetApp unified storage innovations to build a dynamic data center able to fuel your business success.



Citrix® helps organizations reduce costs – such as labor, travel and facilities – by employing an expanded virtual workforce to meet important commitments. Citrix offers a secure, simple and flexible way to support cost-effective and flexible staffing options. Citrix provides secure access to the desktops, applications and collaboration tools all of your workers need to do their jobs both efficiently and effectively, in any location at any time and over any network or device.



VMware® vSphere™ with Operations Management™ combines the virtualization platform with management capabilities. This new solution enables users to gain operational insight into a vSphere while also optimizing capacity. As vSphere environments continue to grow it is essential that users have proactive management that can deliver monitoring, performance and capacity information at a glance.



Your server functions as the nerve center of your office, providing information that may be critical to making decisions. With its key role in your technology infrastructure, choosing the right server is crucial. HP ProLiant servers have long been known for the reliability and performance that organizations demand. HP ProLiant servers provide the latest Intel® Xeon® processing power combined with strong management and essential data protection features for a secure, high-availability platform to meet your needs.

### WE'VE GOT WHAT IT TAKES



#### PARTNERSHIPS AND CERTIFICATIONS

Cisco Master Cloud Builder Specialization (2013)  
Cisco Gold Certified Partner (ATP—Outdoor Wireless Mesh)  
Cisco Professional Services Subcontractor  
Cisco CCDA, CCDP, CCNA, CCNP, CCSP, CCIE  
HP Preferred Business Partner  
HP Master Accredited System Engineer  
HP Enterprise Storage Elite Partner  
HP CloudCenter of Excellence  
NetApp Star Partner  
NetApp Corporate Reseller  
NetApp Accredited Storage Architect Professional  
Flexpod Premium Partner  
VMware Authorized Consulting Partner  
VMware Lighthouse Partner  
VMware National Partner  
VMware Partner Technical Advisory Board Member  
VMware Technical Sales Professional

#### AWARDS

Cisco Global Partner of the Year 2012 – Americas  
2013 VMware Partner Network Award Infrastructure Virtualization Competency  
Global VMware Partner Network Award – 2012  
Cisco Global Small Business Partner of the Year 2011  
Cisco US and Canada Small Business Partner of the Year 2011  
Cisco US Central Region Data Center Partner of the Year 2011

### SEE FOR YOURSELF



#### SUCCESS STORY: Published for Success

A Florida media firm was forced to reconstruct its data center after a division was sold off. They were faced with tight deadlines and needed to address a rapidly changing environment. Find out how we helped Source Interlink migrate from 40 racks of server hardware at its original data center to six at its new colocation center.

#### SEE HOW WE DID IT >>

[CDW.com/realworlddatacenter](http://CDW.com/realworlddatacenter)

#### FEATURED SERVICE ASSESSMENT: Get Virtualized.

"The CDW virtualization assessment made it very clear this was a viable project, and it offered insights into how we should proceed. The complimentary CDW assessment broke things down into clear and tangible terms. We didn't want to overbuy or waste money. The detailed analysis provided the information we needed to step forward with confidence and clarity."

**Brad Sites** | Systems Administrator,  
Missouri Employers Mutual Insurance

#### SEE HOW WE ASSESS IT >>

[CDW.com/server-assessment](http://CDW.com/server-assessment)

**Learn how optimization can help drive your organization  
in our Reference Guide at [CDW.com/datacenterguide](http://CDW.com/datacenterguide)**



<sup>1</sup> Gartner, *Forecast Analysis: x86 Server Virtualization, Worldwide, 3Q12 Update*, November 2012

<sup>2</sup> Klaus, Jeff, *CIOs Reduce Data Center Costs Through Power and Cooling Efficiency*, IT Business Edge February 2012

<sup>3</sup> Harris, C., *Data Center Outages Generate Big Losses*, InformationWeek Hardware, May 2011

<sup>4</sup> Chuba, Mike, *Data Center Executives Must Address Many Issues in 2012*, Gartner, January 2012

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