

# THE BENEFITS OF CLOUD COMPUTING

► **THE LATE-1800S** transition from private electric generators to centralized, utility-based power production was one of the most important events in U.S. industrial history.

Freed of the need to invest in expensive electric generators, companies could secure the electric power they required, as well as instantaneously scale their power usage to meet unexpected or seasonal demands, through a simple power-line hookup to the local utility. Commercial operations that once were the province only of the well-heeled or well-planned suddenly became available to anyone with a good business idea and the means to put it into practice.

The same revolution is taking place today, more than a century later, in enterprise computing. For decades, IT-dependent companies have had no choice but to invest in ultra-pricey mainframes and, later, enterprise-class servers in order to store their data and manage their applications. In so doing, they often have found themselves investing many years and millions of dollars in IT infrastructures that, while operationally essential, usually do little to distinguish their products or services in the marketplace or strengthen their competitive position. It's simply a "cost of doing business."

## THE EMERGENCE OF CLOUD COMPUTING

Well, those cost equations are just about to change. Enter "cloud computing"—a computing model that promises to do for enterprise computing what centralized power generation did for the growing industrial economy of the late 1800s. With cloud comput-

ing, companies no longer need to build expensive, high-maintenance, internal IT networks before they can have access to the computing power and network integration their operations require. They merely "plug into" a distributed, virtual network of computing, storage, and security resources—reducing their IT costs sometimes to a fraction of their former levels.

But cost savings are only one of the benefits of cloud computing. The flexibility and scalability inherent in cloud computing are also unprecedented. Enterprises can outsource either all or any part of their IT infrastructures, and they can make these decisions on a department-by-department basis without having to impose rigid, enterprise-wide standards. Moreover, companies can instantly have access to spike capacity and seasonally based surge resources without having to waste money on fallow capacity the rest of the year. And the best part: they can do it all without increasing budget-constrained headcount or capital expenditures.

## SECURITY IN THE CLOUD

Companies like Amazon, Dell, Google, HP, Microsoft, and Sun have become leaders in the use of cloud computing because they recognize its cost and flexibility advantages. But cloud computing is not without concerns—security being chief among them. Indeed, in early incarnations, cloud computing architects faced severe challenges in trying to erect a robust security architecture for an IT network based on virtual machines, rapidly shifting deployment patterns, and Internet-based access. Legitimate questions were raised about matters ranging from intrusion detection and prevention to data integrity and protection.



Fortunately, advances over the succeeding years have made it possible to put these concerns to rest. Innovations like Trend Micro's "security in the cloud" offerings have made cloud-computing environments just as secure as internal IT networks or site-based data centers, if not more so. Trend Micro's cloud-based Smart Protection Network™ leverages intelligence gained over millions of nodes, and can instantaneously and continuously deploy new signatures, heuristics, and antivirus and anti-malware patches throughout the cloud—a level of real-time security that no location-based IT network can match. Moreover, once one client's data or applications are protected against a new threat, the data and applications for *every client* in the cloud is protected at the same time. And small, mobile devices, like cell phones and PDAs, that lack large memory stores nevertheless can receive the same degree of protection as multi-CPU servers.

Clearly, the maturing advantages of cloud-based computing are worth exploring, especially for companies struggling to balance growing computing and security needs with shrinking IT budgets. If you're among them, perhaps it's time you took a look.

For more information on Trend Micro's cloud computing security solutions, visit [WWW.SMARTPROTECTIONNETWORK.COM](http://WWW.SMARTPROTECTIONNETWORK.COM)



North America and Europe deployed more virtual servers than physical servers in 2008.

95% of data centers are deploying virtualization

88% of North American companies don't have a virtualization security strategy

TECHNOLOGY  
Gartner VP Neil MacDonald: Virtualization will be the target of new security threats

**60% OF PRODUCTION VIRTUAL MACHINES ARE LESS SECURE THAN THEIR PHYSICAL COUNTERPARTS.\***  
**THINK CONVENTIONAL SECURITY CAN PROTECT YOUR VIRTUAL ENVIRONMENT?**

## THINK AGAIN.

Enterprises around the world are relying on virtualization to increase data center efficiency and, unknowingly, leaving themselves more vulnerable. That's because conventional security isn't able to protect virtual machines or see the traffic between them – leaving data and networks exposed. Which is why, according to Gartner Group, in 2009 sixty percent of virtual machines are less secure than their physical counterparts. But with Trend Micro™ Enterprise Security, powered by the Trend Micro™ Smart Protection Network™ infrastructure, you can mitigate the risk and maximize the benefits of virtualization. It's a different kind of security that protects your physical and virtualized environments and helps set the foundation for your company to move confidently into the cloud.

▶ Learn how to protect your virtualized data center. Download the Trend Micro eBook at [trendmicro.com/thinkagain](http://trendmicro.com/thinkagain)



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