SOLUTIONS BRIEF

Are You Ready for the Cloud?
When, where and why cloud computing may be right for your business.

The effort to modernize the grid has created an explosion in data. Utilities are moving from a once-a-month, manual meter read environment to meter reads as often as every 15 minutes. Many utilities are saying this represents a 3,000 fold increase of data on a monthly basis. Therefore, utilities need new storage architecture strategies for all this data—especially if they want to maintain the security and privacy of the data.

In addition, the smart grid employs systems that replicate and use the data, such as the meter data management (MDM) system, and the automated metering infrastructure (AMI) system. This can further expand to 15,000 to 20,000 times the original amount of data utilities have traditionally handled. And that presents a challenge to your IT resources and ultimately your operating costs.

You must account for new costs in:
• Hardware
• Software
• Maintenance
• Data center space
• Power
• Training and knowledge retention

Traditionally, such an undertaking—massive internal data vaults that are highly scalable—requires a significant investment. But there is another option—Computing as a Service, or CaaS, an enterprise data model that is scalable, secure, and reliable, without slowing down the network, slowing down the server, or slowing down the application.

CaaS is a cloud computing solution that provides resources accessed over a network cloud on an as-needed basis. In other words, it can provide access to a pool of resources—server, network, storage and bandwidth—that can be purchased with pay-for-what-you-use pricing. There are no large equipment purchases required because your servers and hosting facilities are virtual, although CaaS can also be configured with fixed assets such as servers.

How CaaS can help
CaaS can help your utility business in four main areas:
• **IT resource underutilization**—IT servers typically run at about 15 percent of capacity, leaving about 85 percent unused. With CaaS, you don’t pay for an idle physical resource.
• **Flexibility**—CaaS is attractive because utilities need to react to a rapidly evolving market. CaaS allows utilities to dial resources up and down quickly, without over- or under-provisioning.
• **Business Continuity**—The ability to mitigate the unforeseen and continue operations can be a significant advantage, in addition to a core mission, but the needed system redundancy can become costly. CaaS provides safeguards as part of a service.
• **Resource management**—Smart management of resources can boost the bottom line and allow more strategic planning. CaaS provides the ability to understand, allocate, and manage IT resources at a more granular level and allows assignment of costs by department.
Even with these benefits, some utilities hesitate to use the cloud because of perceived security issues, or a DIY culture. Some cloud computing solutions have suffered from either a perceived or real lack of high-level security, inadequate levels of reliability, or limited user control over systems in the cloud. But not all cloud offerings are the same.

Let’s look at what our cloud solution can do for you.

**Cloud computing you can hang your hat on**

Our cloud-based solution is rock solid: servers and storage standing ready to meet your needs; security you can trust; network connections that perform; and dynamic management tools that enable you to adjust services to meet your demand.

Our CaaS solution answers your needs with the following capabilities:

- **Built-in security, networking, and redundancy.** High-level security controls with a choice of IP connections to the platform and redundancy built into the environment to meet the security, performance, and reliability demands of commercial systems. These controls also assure that your data is not intermingled with other company’s data and that no other entity has access or views into your data.

- **Virtual and/or physical server capacity on demand.** This reduces the need to provision infrastructure based on peak capacity projections or traditional redundant configurations, and can further enhance security.

- **A high level of automation that enables self-provisioning in hours, not days.** CaaS includes a self-service portal to dynamically provision and manage server, storage, and network resources, so that deployment times can be measured in minutes and hours instead of days and weeks.

- **Competitive service level agreements (SLAs).** We offer competitive SLAs including 100 percent availability of the portal and virtual farm.

A cloud solution is well suited to meter data management (MDM), where transporting, storing, and leveraging large volumes of data can be cost prohibitive. A cloud-based MDM solution, with software delivered from the cloud using an as-a-service model, can help you take control of capital expenditures and operating costs, and can speed up time-to-implement. As smart grid initiatives grow, you can scale your data management infrastructure with them, and keep costs in line through the pay-for-what-you-use model. Our cloud computing solutions include infrastructure, platform and software as a service to allow you to better leverage these benefits.

**Built-in security**

We’ve seen that cloud computing can be a fast, cost-effective method for provisioning IT resources, but is there a tradeoff in data security and control? By definition, customer and business information is in the cloud, so how do you keep a cloud secure?

Security is the top concern with cloud computing among utility leadership. Concerns include data protection, system integrity (access controls and vulnerabilities), and availability. Enterprises need to match threats and business demands with the right security approach.

So, how do you get started with security for the cloud? At Verizon, we take security very seriously. Our network has built-in security and redundancy. CaaS combines our own high-level security controls with a choice of IP connections to the platform and redundancy built into the environment to meet the security, performance, and reliability demands of enterprise systems.

Some key steps to include in your move toward the cloud include the following:

- **Understand what you are using the cloud for.** Are you using the cloud to store data? Are you using the cloud to perform data manipulation and administer applications? In either case, what you are using the cloud for will be very important for your security assessment and protection schemes.

- **Understand your data flow into and out of the cloud.** Map the data flow and evaluate those points where the data confidentiality, integrity or availability could be negatively impacted. Consider such things as data encryption in transit and at rest.

- **Review the Cloud Security Alliance report “Security Guidance for Critical Areas of Focus in Cloud Computing, V2.1.”** This guide was prepared by a global collection of security and infrastructure experts—including Verizon Business—with the intent on providing solid, usable security guidelines when using a cloud computing environment.

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1 Source: [http://www.cloudsecurityalliance.org/csaguide.pdf](http://www.cloudsecurityalliance.org/csaguide.pdf)
If you are ready for the cloud, we’re ready to help
While this brochure serves as a start, the more you know about cloud computing, the better off you will be.

That’s because upfront due diligence and planning will be key to support your decision to use the cloud. If the changing circumstances of the modern grid dictate the need for a new approach, you will be ready and more likely to achieve successful outcomes.

Many areas of your business are well-suited to a cloud computing strategy, including data warehousing, business analytics, and meter operations, while NERC CIP regulated areas and outage management systems may be more ideal to bring into the environment in succeeding phases.

The idea is to identify low hanging fruit and focus on those areas, while gaining the foundation for further utilization of the cloud when the time is right. Your first step should be an internal review of your systems and infrastructure. How friendly is legacy infrastructure to cloud computing? There will likely be utility-specific applications that are not ideal for cloud computing. The key is a thorough audit. With our IT, communications, and network technology expertise, we can help you complete a thorough inventory and strategy.

Lastly, you need to do a financial analysis. Perform a spectrum of analyses showing the long-term opex and capex model, comparing business as is, and business using 25, 50 and 100 percent cloud. Again, these analyses can be performed or supplemented with outside help, or remain entirely in-house.

Verizon offers financial modeling, in addition to our systems agnostics and technology approaches. We have smart centers and data centers distributed throughout the globe and engineered to the highest standards for secure, reliable cloud computing. From a security perspective, we can drive value with assessment and reviews of infrastructure and deployment models.

The time to act is now
The data explosion is coming, if not already here, and it requires an elite skill set to federate, manage, and present data at such large volumes. The utilities that succeed will be the ones that embrace, manage and apply this data for improvements in their business. Many will leverage the cloud, including software-as-a-service models.

New business models are needed, with more agility, new organization and outsourcing partnerships, and top down and bottom up visibility. The ability to add, delete or reroute business processes without ripping and replacing infrastructure, and to do so faster than your competitor can be tremendous advantage.

We’re ready to help you further explore these advantages for your business. Contact your Verizon account representative today, and please visit us online at verizonbusiness.com/solutions/utility/.

About Verizon Business
Verizon Business, a unit of Verizon Communications (NYSE: VZ), is a global leader in communications and IT solutions. We combine professional expertise with one of the world’s most connected IP networks to deliver award-winning communications, IT, information security and network solutions. We securely connect today’s extended enterprises of widespread and mobile customers, partners, suppliers and employees—enabling them to increase productivity and efficiency and help preserve the environment. Many of the world’s largest businesses and governments—including 99 percent of the Fortune 1000 and thousands of government agencies and educational institutions—rely on our professional and managed services and network technologies to accelerate their business. Find out more at www.verizonbusiness.com.