White Paper

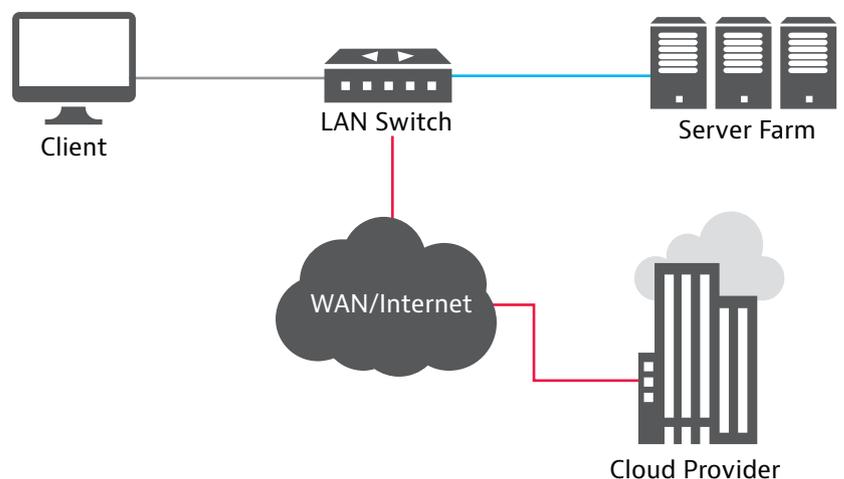# 5 Steps to Prepare Your Network for Cloud Computing

To the novice IT manager, a shift to cloud computing may appear to offer great relief. No longer will their team have to worry as much about large infrastructure deployments, complex server configurations, and troubleshooting complex delivery on internally-hosted applications. But, diving a little deeper reveals that cloud computing also delivers a host of new challenges.

Through cloud computing, organizations perform tasks or use applications that harness massive third-party computing and processing power via the Internet cloud. This allows them to quickly scale services and applications to meet changing user demand and avoid purchasing network assets for infrequent, intensive computing tasks.

While providing increased IT flexibility and potentially lowering costs, cloud computing shifts IT management priorities from the network core to the WAN/Internet connection. Cloud computing extends the organization's network via the Internet, tying into other networks to access services, applications and data. Understanding this shift, IT teams must adequately prepare the network, and adjust management styles to realize the promise of cloud computing.

## Shift in Management Focus

With internal hosting, management focuses on the connection between the LAN and Server Farm. Embracing cloud computing shifts the focus toward the WAN connection.

Internal Hosting
Cloud Computing



Client

LAN Switch

Server Farm

WAN/Internet

Cloud Provider

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Here are 5 key considerations organizations should make when planning, employing, and managing cloud computing applications and services:

1. **Conduct Pre-Deployment and Readiness Assessments**
   Determine existing bandwidth demands per user, per department, and for the organization as a whole. With the service provider's help, calculate the average bandwidth demand per user for each new service you plan to deploy. This allows the IT staff to appropriately scale the Internet connection and prioritize and shape traffic to meet the bandwidth demands of cloud applications.

2. **Shift the Network Management Focus**
   Cloud computing's advantage lies in placing the burden of applications and data storage and processing on another network. This shifts management priorities from internal data concerns to external ones. Currently, organizations have larger network pipes and infrastructure at the network core, where the computer processing power is located.

   With cloud computing and Software as a Service (SaaS) applications, the importance of large bandwidth capacities shift away from the core to the Internet connection. The shift in focus will significantly impact the decisions you make from whether your monitoring tools adequately track WAN performance to the personnel and resources you devote to managing WAN-related issues.

3. **Determine Priorities**
   With a massive pipeline to the Internet handling online applications and processing, data prioritization becomes critical. Having an individual IP consuming 30 percent of the organization's bandwidth becomes unworkable. Prioritize cloud and SaaS applications and throttle traffic to make sure bandwidth is appropriately allocated.

4. **Consider ISP Redundancy**
   Thoroughly assess the reliability of your existing Internet Service Provider. When the Internet connection is down or degraded, business productivity will also be impacted. Consider having multiple providers should one have a performance issue.

5. **Hold Service Providers Accountable**
   Today, if a problem occurs within the network core, the engineer can monitor the entire path of network traffic from the client to the server in order to locate the problem source. With service providers controlling the majority of information in cloud computing, it becomes more difficult to monitor, optimize, and troubleshoot connections.

   As a result, **Service Level Agreements (SLA)**, take on greater importance in ensuring expected network and internet performance levels. SLAs should outline the delivery of expected Internet service levels and performance obligations service providers must meet and define unacceptable levels of dropped frames and other performance metrics.

An SLA by itself is not enough to guarantee your organization receives the level of service promised. Since it is not in the provider's interest to inform a client when its quality of service fails, we must rely on an independent view of WAN link connections. Utilize a network analyzer with a WAN probe to verify quality of service and gauge whether the provider is meeting SLA obligations.

Cloud computing is more than the latest IT buzzword; it's a real way for companies to quickly obtain greater network flexibility, scalability, and computing power for less money. But like most technologies, these services are not without risk and require proper preparation and refocused management efforts to succeed.