

Cloud Computing and Your WAN

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Featuring Doug Shepard from Cloud Sherpas

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 **Cloud
Sherpas**

- Trends in Cloud Computing
- Types of Cloud
- How the Education Cloud is Driving Bandwidth
- Prepare Your Network for the Cloud
- Q&A

Live Poll Here!

Let's take a quick poll before we begin.

How long have you been using Cloud-based Apps in your schools?

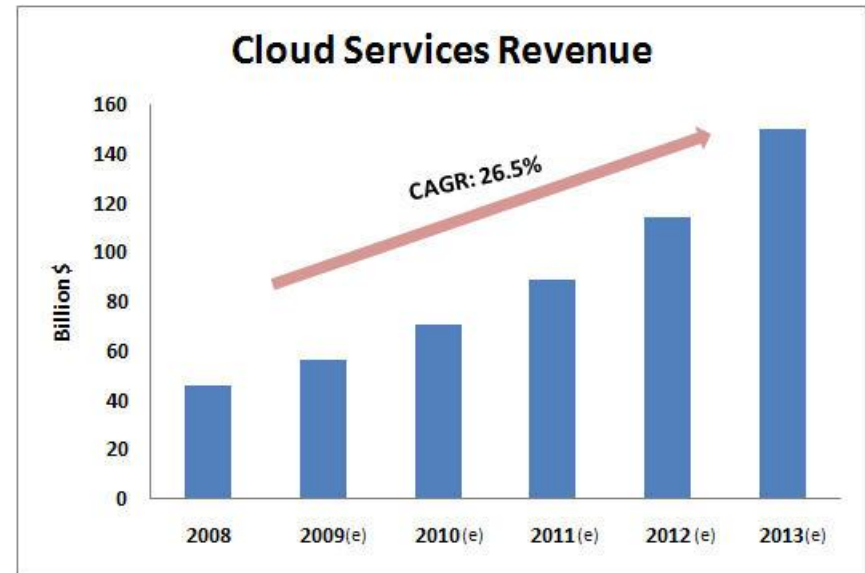
- 3-5 years
- 1-3 years
- Less than 1 year
- Have not in the past, but plan to this year

Trends in Cloud Computing



Cloud Computing is the outsourcing of data center functionality and resources to a third party via a network connection.

- The Cloud can be an alternative to maintaining in-house computing power – saving cost and enabling economies of scale
- Cloud computing can be a substitute for dedicated hardware up through full application outsourcing
- The most well-known cloud services include Google Apps (Gmail, Google Docs, etc), Amazon EC2, Salesforce.com. Application providers are offering cloud based versions of their software.
- According to Gartner, Inc., the industry is poised for strong growth through 2014, when worldwide cloud services revenue is projected to reach \$148.8 billion.



Gartner, Inc., 2009

Drivers & Customers of Bandwidth



Digital Media Content

- Library / Video Content



Cloud Connectivity

- Online back office (IT consolidation)
- Email and Collaboration Applications



Video Conferencing

- Distance Learning / Tutoring



Centralized Computing Resources

- Voice over IP (VoIP) Networks
- Virtual Desktop



Education Customers

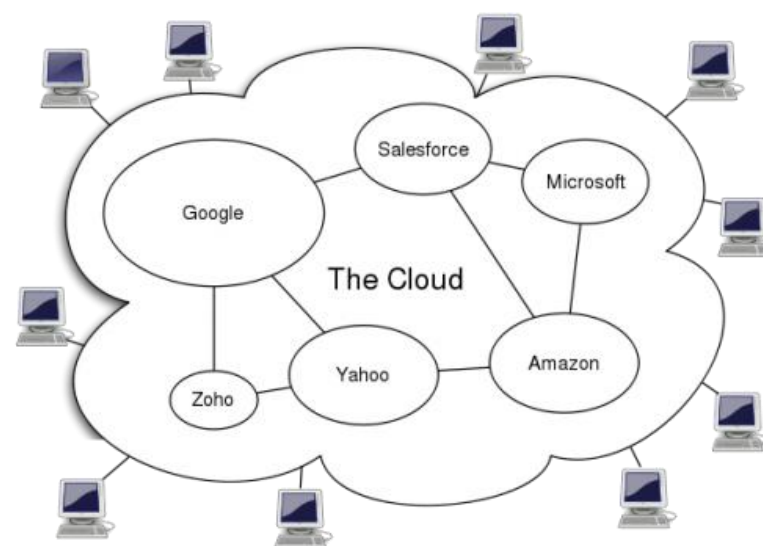


The Different Types of Cloud - Public

Public Model

Service provider makes resources, such as applications and storage available to the general public over the Internet. May be free or offered on a pay-per-usage model.

- 24×7 access from any location with Internet access.
- Software as a service off-loads the costs of servers and the ongoing cost of maintaining them by tech support staff.
- Web-based software gets updated centrally and insures that all students and teachers are using the same version.

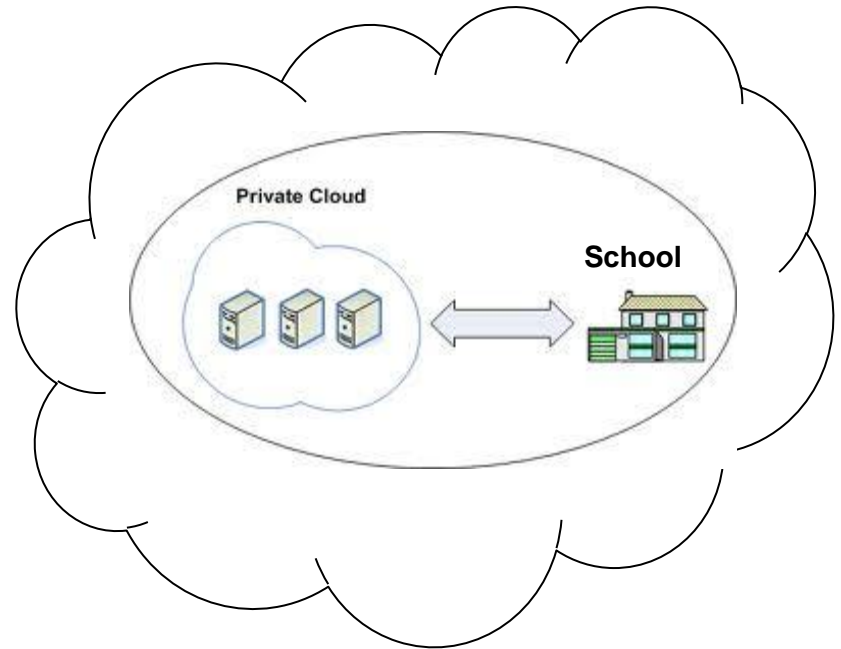


The Different Types of Cloud – Private

Private Model

Centralized service installed on servers, inside a network, managed by the district IT department. Resources, such as applications, documents and other data have secure access with an Internet connection.

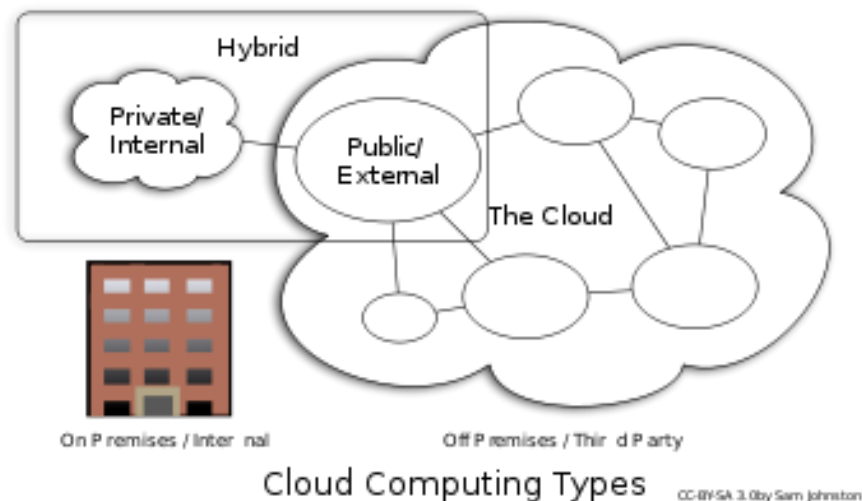
- Security between the public and your school network.
- Applications are streamlined within the school network, or a hosted location – simplifying IT management.
- Reduced licensing and hardware costs through the streamlining of Web applications and private devices.



The Different Types of Cloud- Hybrid

Hybrid Model

- Applications can be run on a proprietary computing architecture that provides hosted services to a limited number of people behind a firewall. Little or no software remains on the students' or teachers' computing device.
- The school can run applications that are unique to their environment.
- Access these applications 24×7 from any device with Internet access.
- Become device independent, thus allowing the purchase of thin clients, netbooks, and other low cost computing devices.
- Install and manage applications centrally.
- Slow the replacement cycle (software runs on servers so no need to buy new computers every few years).





Cloud
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is the world's leading
Google Apps cloud service provider

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**Thousands
of companies**



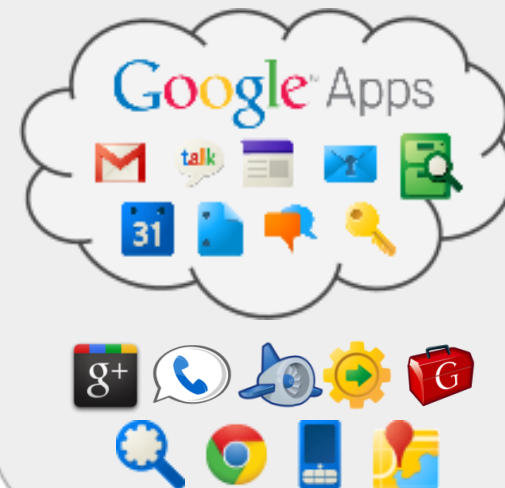
500+ services customers
20,000+ product customers

**Millions
of users**



1 million mailboxes migrated
3.5 million SherpaTools users
110+ countries

**Go More Google
with us**



GOOGLE APPS
AUTHORIZED
RESELLER
Google

Cloud Sherpas is a founding member of the **Google Apps Partner Advisory Board**, headquartered in Atlanta with international offices in Sydney, Brisbane and Wellington.

Cloud computing offers huge benefits



Radically lowers
the cost



Feature
introduction
at
consumer speed



More secure



Access from
any device



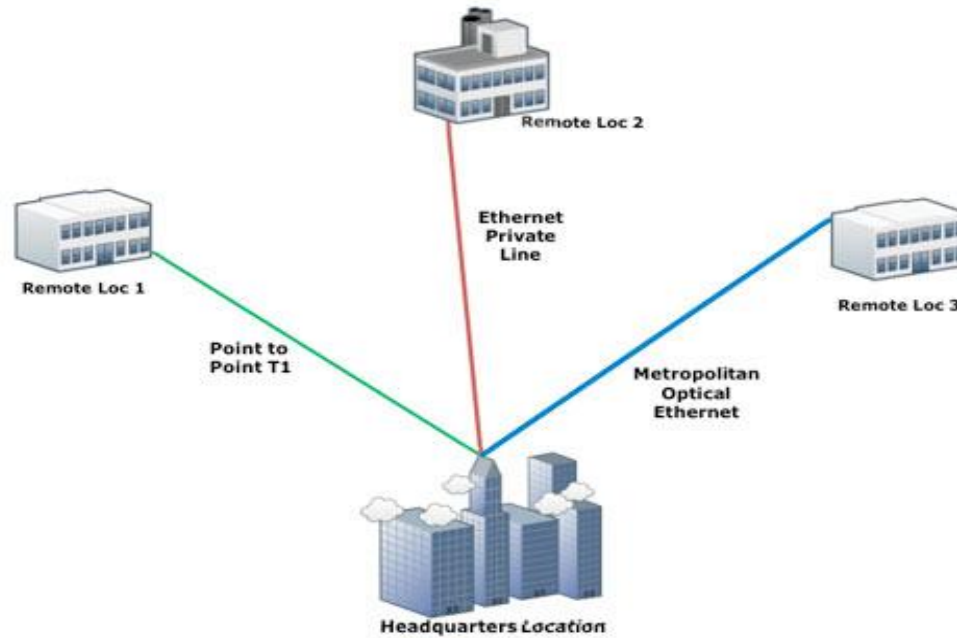
New classes of
applications



Cloud Migration *Network Design Considerations*



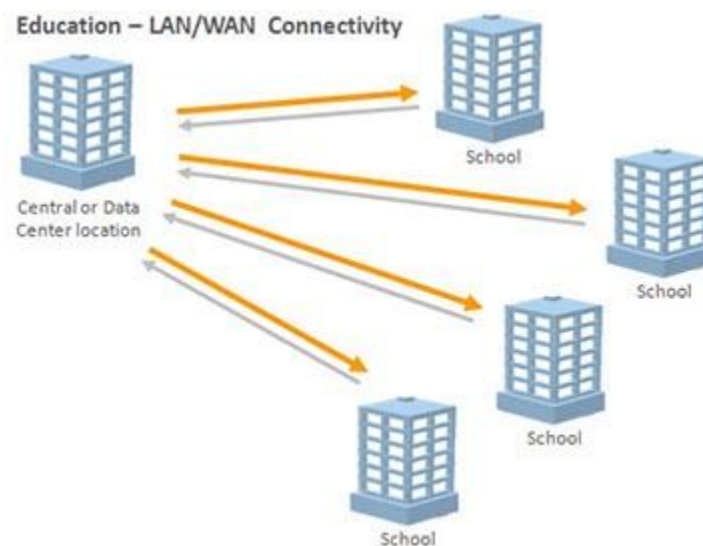
How much Bandwidth do I need?
Is Hub & Spoke Network the right design?



HUB AND SPOKE NETWORK

WAN and the Cloud

- In the past, WAN was used to create connectivity to internal servers for applications and to distribute Internet traffic
- WAN is now also providing the backbone of virtual desktops and cloud-based Data Centers
 - Storage, app development, or data analysis
 - Depending on the application, substantially higher internal and external bandwidth may be required to achieve performance objectives



Preparing Your Network for the Cloud



Extra demand on the WAN. How to Adapt?

- Bandwidth needs will be more dynamic
 - LAN speeds interconnecting sites and to Internet/External connections
- Application bandwidth demands will vary
 - Establish a private network where you can manage security, QOS settings to ensure performance; add bandwidth as needed
 - Network demand is up but client PC upgrades may slow
- Cloud computing relies on external bandwidth as well as internal bandwidth
 - Establish higher capacity Internet or dedicated connections to providers



Questions?

- * For those listening through your computer, please use the chat feature to ask a question.
- * For those listening over the phone, please un-mute to ask a question live.

Next Steps

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