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How To Cloudproof Your Job!

Are you willing to risk your most important application to a beta solution (aka the Cloud)? Be smarter than that!

Ben Serebin
Ehlo & Network Consultant
REEF Solutions (www.reefsolutions.com)

About Me

- Before I started my career in **Information** Technology, my education and experience was in economics/accounting/financial analysis. Financial analysis is part of almost every decision I make for myself and my clients. I been involved in IT for almost 15 years now. Active in 4 organizations
- 1) my company, REEF Solutions, a network & wireless consulting firm that brings **r**eliable, **e**ffective, **e**fficient, and **f**orward thinking technology solutions to startups and established financial and public relations firms. We specialize in Exchange Server and evolving startups into larger well established companies by maximizing their use of technology with excellent return on investment (aka ROI).
- 2) recently joined the board of a social networking startup, poppt.com (an online tool for self-promoting and connecting artists).
- 3) 8 years ago, was elected and continues to serve on the board of trustees and is treasurer of NYCwireless.net, a non-profit that is very active in the wireless hotspot space.
- 4) founded in 2005, and continues to run, the first and only NY area Microsoft Exchange Server User Group, NYExUG.com.

Projects (past/present/future)

- Specialty is Exchange Server, Spam Filtering, DNS, & Wireless.
- Recently Completed Projects Q1 2011: VMware ESXi High Availability VM cluster on commodity hardware (16GB, no DAS, iSCSI based, quad port NICs)
- Upcoming Projects: Deployment of multi-role multi-site Exchange clustering environment, architecting high-availability storage for virtualization environment.
- Current Environment: Running Exchange 2007 Server on Windows 2008 on ESXi 4, server computing environment is entirely virtual, DC1 on ESXi 4 w/DAS and DC2 on VM cluster, Blackberry Enterprise Server Express 5, running on VMware ESXi 4. Current handheld email device is a BlackBerry Bold 9650.

Agenda

- What is the “Cloud”?
- Wikileaking on the “Cloud” (old & new)
- Cloudy Day for the “Cloud” (good ol’ marketing)
- Cloudproofing Take-aways for old Cloud
- Cloudproofing Take-aways for new Cloud
- Strength of the “Cloud”
- Strength of Information Technology Leaders and Advisors
- Recap of the Cloud Situation & Protecting Yourself & Company

Pop Quiz time!

What is the Cloud (new)?

1) Scalable computing at a remote datacenter?
2) Scalable computing in your company?
3) Software as a Service (e.g. salesforce.com)?
4) Infrastructure as a Service (e.g. Amazon)?
5) Development platform as a Service (e.g. Azure)?
6) Web/Email Hosting (Gmail, Office 365)?
7) The Internet?
8) All of the above (this IS the answer – times have changed)

A walk down memory lane on what the Cloud (old) was.

The meaning behind “Cloud” computing has changed mid/end of 2010. This is background on the old Cloud referred to in this presentation as “Cloud (old)”.

- Originally the “Cloud” was about instantly scalable computing. Very very few companies really offered this (e.g. Amazon, Rackspace).
- Microsoft has been marketing “Windows Server” as a Cloud solution. So, your servers are now “Clouds”.

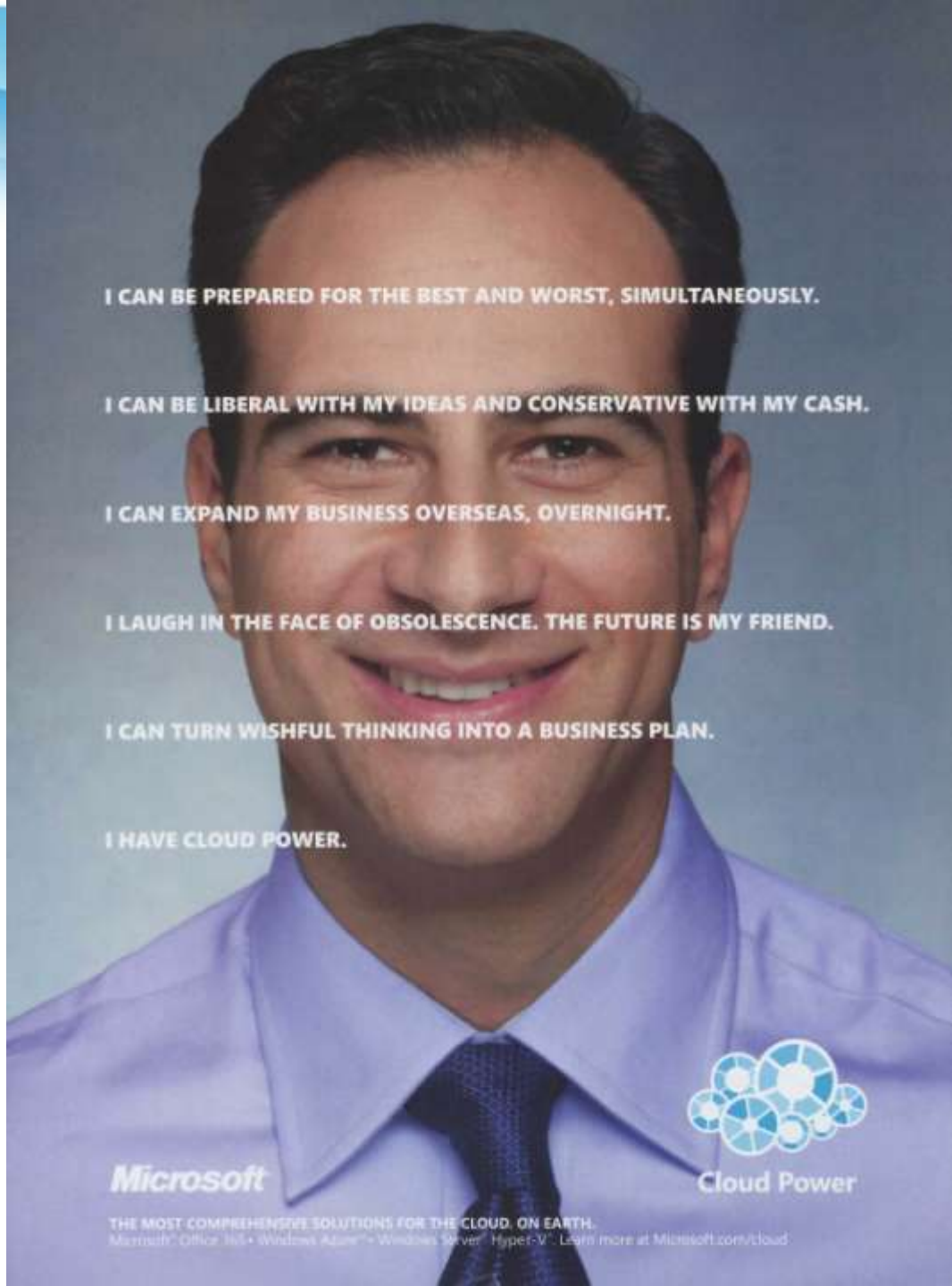
Reality vs Marketing, Marketing wins!

Marketing the Clouds

Text from ad on right (back of BusinessWeek in April 2011)

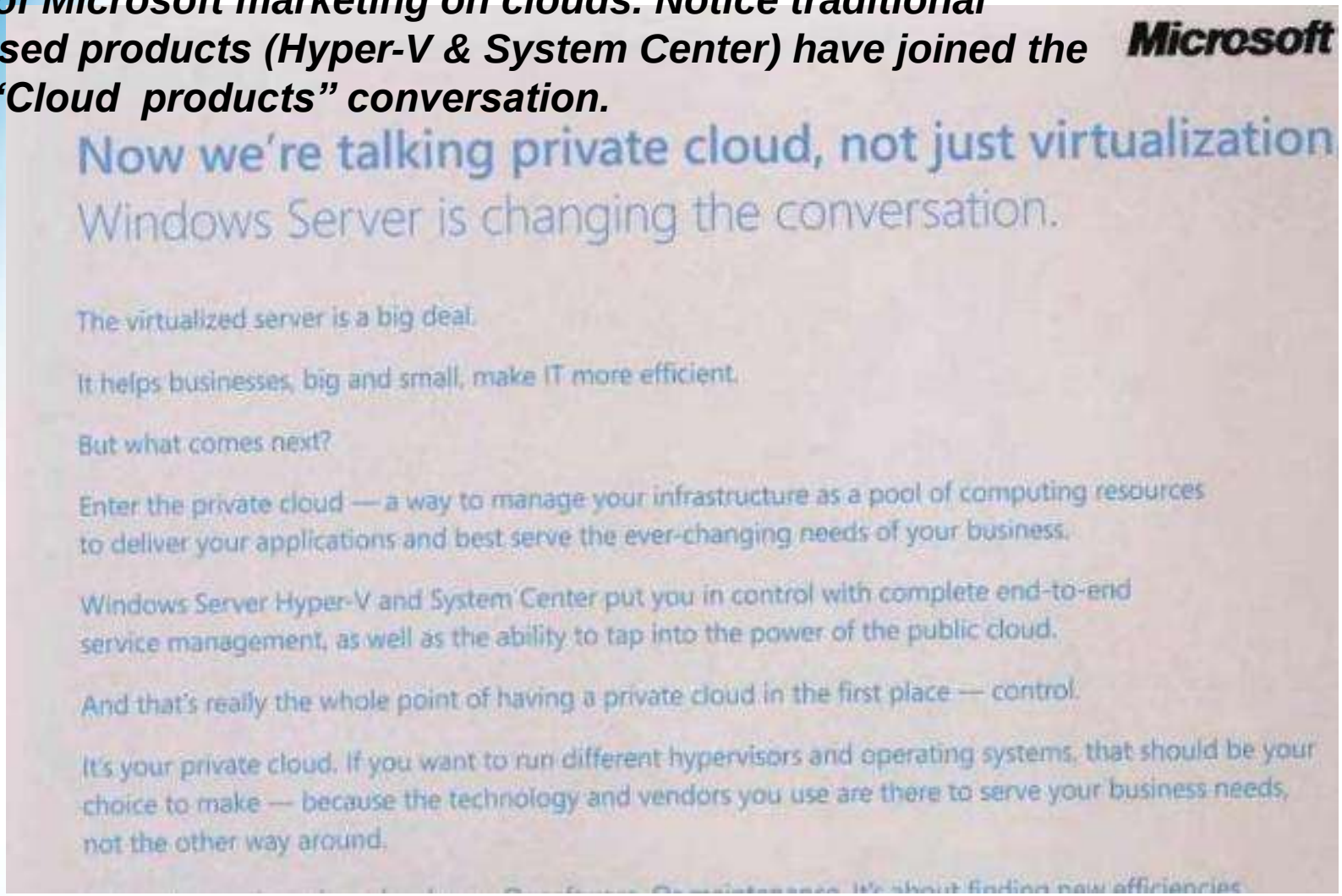
- I can be prepared for the best and worst, simultaneously.
- I can be liberal with my ideas and conservative with my cash.
- I can expand my business overseas, overnight.
- I laugh in the face of obsolescence, the future is my friend.
- I can turn wishful thinking into a business plan.
- I have cloud power.

Analysis: Majority Cloud marketing is VERY vague. Business owners/decision makers most likely do not understand what the "Cloud" is promoting outside of use the Cloud". Rarely are specific products highlighted.



More Marketing the Clouds

Example of Microsoft marketing on clouds. Notice traditional "LAN" based products (Hyper-V & System Center) have joined the realm of "Cloud products" conversation.



Microsoft

Now we're talking private cloud, not just virtualization

Windows Server is changing the conversation.

The virtualized server is a big deal.

It helps businesses, big and small, make IT more efficient.

But what comes next?

Enter the private cloud — a way to manage your infrastructure as a pool of computing resources to deliver your applications and best serve the ever-changing needs of your business.

Windows Server Hyper-V and System Center put you in control with complete end-to-end service management, as well as the ability to tap into the power of the public cloud.

And that's really the whole point of having a private cloud in the first place — control.

It's your private cloud. If you want to run different hypervisors and operating systems, that should be your choice to make — because the technology and vendors you use are there to serve your business needs, not the other way around.

Is the Cloud running Windows Cloud OS?

Are "Private Clouds" really just dedicated servers?

Cloud-proofing Against for Hosted Solutions

Only as strong as it's weakest link!

- **Longer outages** – bigger/more complicated solution can take long for recovery. E.g. Google Gmail "storage bug" took out 200k+ users for up to 18 hrs. Took 5 days to fully recover (starting 2/27/11). Required tape restores (who knew they used tape backups). Contrary to reported "no email lost", email bounced (aka email not received by clients = lost). Google solution: extend your contract for free. Demand to know the SLA guarantees (uptime vs compensation).
- **Applications should be designed for Cloud usage** – WAN vs LAN behavior require different functionality/capabilities. Do not think taking a LAN based product, and moving it into the Cloud is considered a good Cloud solution. Outlook & Exchange on a LAN operates VERY differently (better performance) than over the WAN (e.g. significantly slower for sending/receiving emails, local desktop performance slower on large mailboxes, reduced security due to opening LDAP ports for GAL lookups, etc)
- **Support more costly & lack of phone support**. Google & Amazon don't offer phone with the "advertised" Cloud offering. When support is factored in, a Cloud hosted solution can be more costly. Demand SLAs agreements as well.
- **Lack of portability** - Difficult to switch? Switching from a Hosted solution is very time consuming since everything is client side based. On-premise or Exchange controlled offers server to server migration abilities.
- **Slower Performance** – When the hosted solution slows down (e.g. sending/receiving time-outs, message arrival times, some users report slower performance, etc) are difficult to troubleshoot. Hosted vendor can blame the internet. Ask about SLA for message delivery times. Dedicated Exchange implementations insures message delivery times are 1-2 minutes, while hosted can be up to 30 minutes. This is the "norm" for hosted solutions.
- **Forced Upgrades or Features Missing** – Hosted Exchange vendors can upgrades Exchange, can require client side upgrade (e.g. 2010 forcing 2007+) or remove Public Folders access (e.g. Office 365). This can be costly and increase the Total Cost of Ownership (TCO). Make sure to factor in upgrading Office every 2-3 years when using a hosted solutions.

Cloudproofing Against Cloud (old) (e.g. Amazon's EC2, Rackspace, VMware, etc)

Only as strong as it's weakest link!

- **Longer outages** – bigger/more complicated solution can take longer for recovery. E.g. Amazon's EC2 platform (entire East Coast Availability Zone experience an outage starting from 4/21/11 for 5 days. Amazon had supposedly designed the "Availability Zone" to protect against such failure. Obviously, it was unsuccessful. Websites and storage related applications were down/unavailable during this time.
- **Unknown Pricing (sky-high pricing)** - price can widely vary on usage outside of the control of the customer (e.g. bandwidth, value vs enterprise storage used, I/O requests, etc). Hard to predict costs!
- **Applications should be designed for Cloud usage/storage** – WAN vs LAN and local vs remote shared storage require different functionality/capabilities. Do not think taking a LAN and direct attached storage based product, and moving it into a Cloud solution is considered a good Cloud solution. The database I/O patterns & I/O requirements can be problematic for shared I/O systems.
- **Support cost more than advertised & lack of call-in support**. Amazon don't offer phone with the "advertised" Cloud offering. Make sure "AWS Premium Support" is factored in..
- **Slower Performance** – When the Cloud I/O or network slows down (e.g. sending/receiving time-outs, database access issues, message arrival times, some users report slower performance, etc) are difficult to troubleshoot. Hosted vendor can blame the internet or state the I/O pattern is within the "acceptable" range. Ask about SLA for I/O and network slows.
- **Single point of contact (Support/Account) / Support Communication** – when there is an outage or a problem, make sure you price out a single point of contact for support/account management if your company considers whatever application is being deployed into the Cloud. Lack of information. Week after Amazon's EC outage, and there's still no support statement on the cause or a solution to protect against a similar outage in the future.

Shared Weakness of the Cloud (new & old)

Gmail uses tape backups has had to use them to recover data in the past.

RTO = Recovery Time Objective (aka how fast is the recovery after failure

- Hackers target large companies. Big network have bulls-eyes on them (e.g. Sony, Epislon, etc) Hackers target large companies (more bang for the buck), which Cloud vendor will get hacked first?
- Domino effect makes low RTOs difficult to meet. When a large environment fails, it's typically out for a significant amount of time. Look at recent Amazon outages (4/21-25/11, 5 days), VMware (4/25/11 for 13+ hrs), Gmail (2/23, 2/27, 2/28, 3/1, 3/2, 3/3, 3/3 outages which required tape restores, lost mail, and many hours of downtime), & Microsoft's Office 265 (5/10/11 for 9+ hrs hrs) that took out a large # of customers.
- Lots of fine print. You'll need to thoroughly review the SLA, terms and conditions, and what is included in the pricing. Amazon's multi-day outage didn't violate the SLA and require payment due to some classifications on what an "outage" is.

And even more weakness of the Cloud

- [Hosted Exchange] Backups are not supported by almost all hosted Cloud vendors. Shouldn't your management/company set backup retention times?
- [Gmail] Focus on groupware functionality in Exchange (shared calendar, wireless syncing of email/tasks/memos, public folders, etc)?
- [Gmail/Office 365] Gmail: creating a user account and then deleting it, requires waiting 6 days before you can create it again. I've been told that Office 365 has a 24 hr waiting period for this.
- Any specialized email application you are running which require Exchange in-house (e.g. work flow)?
- Is it HIP & SOX complaint if Cloud hosting requires relaying mail via a SMTP relay?
- Cloud environments are a work in progress and I would consider "beta". Do you trust beta code for mission critical applications?

Strength of the Cloud

- Popular in the media, marketing, and people like talking about it.
- Instantly scalable computing resources which is great for web based applications. Not great for email.
- Cheap for basic sending/receiving non-SLAed protected solution w/o support.
- Good for testing environments w/o concern for affecting production network.

Strength of Information Technology Leaders and Advisors

- Very important. Your role is to educate users which includes management. That's why it's called "Information Technology". Providing information.
- Learn as much about Cloud technology offerings as possible.
- Know the pricing and pitfalls.
- Understand your clients needs and pain points and make sure Cloud offerings do not affect it.

Recap of the Cloud – making the conversation work for you!

- Refer to the Cloud as the Internet.
- Highlight the uncontrolled pricing costs (Cloud infrastructure).
- Backups are important, you should control the retention period. How else do you restore contacts/calendar/notes/Public Folder data.
- WHEN there is an outage, is your company willing to be treated like a “residential cable company subscriber” for your Enterprise email.
- As of mid 2011, the sweet spot is web development or specialized processing needs. If Amazon, VMware, AND Microsot can have long outages, it’s not ready!
- I would not jeopardize your job on a vendor’s solution (reliability & security). Make sure you document in email the dangers of moving to the Cloud without adequate testing and management accepting the known issues.

Thanks for coming.

Question of the month and raffles.

See you at May's meeting. www.nyexug.com