



An improved Hosting Platform for XYZ LLC

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Arguments for an improved hosting platform:

- Downtime is expensive
- Inferior, ill-conceived or out-dated systems are unsupportive
- Inefficient use of Human Resources

Downtime is expensive

XYZ LLC has experienced repeated incidents of unplanned downtime eroding product worth and customer confidence.

- Network related failures (ISP, router, firewall, load balancer)
 - Upstream ISP peering issues
 - Network Router
 - Network Firewall
 - Server Load Balancer
 - LAN switch
- Blade server failures
 - Storage
 - Unknown?
- Application-level failures
 - Software crashes
 - Server overloads
- Administrative errors
 - All kinds



Inferior Infrastructure

Inferior or ill-conceived systems are constraining XYZ LLC in different ways:

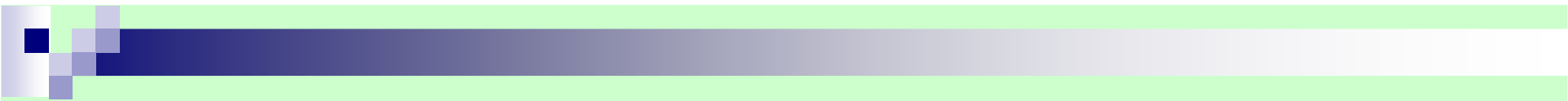
- RLX Blade servers are utilizing CPUs that were new last century. Many web applications written in past years expect more from their servers.
- Systems can't scale with growing customer needs. This leads customers to perceiving the system as slow (and getting slower).
- Storage capacity is limited and does not allow for expanded product offerings and limits the number of customers that can be hosted.
- Defective and aging hardware is responsible for recurring periods of downtime.
- Current system design does not allow for 'high availability'.



Inefficient use of HR

Human resources could be deployed more effectively:

- Customer service is busy addressing system related issues instead of customer related issues.
- Administrators spend most of their time troubleshooting when management and monitoring tools could be doing a better job with little human interaction.
- Because administrators are entrenched in an interrupt driven work mode (constantly chasing fires) there is little time spent improving systems or customer experience.



Recommended Platform Improvements:

- Source supported enterprise-class equipment from mainstream vendors
- Implement High-Availability through redundant systems
- Configure extensive diagnostic and monitoring systems
- Consider commercial E-mail platform

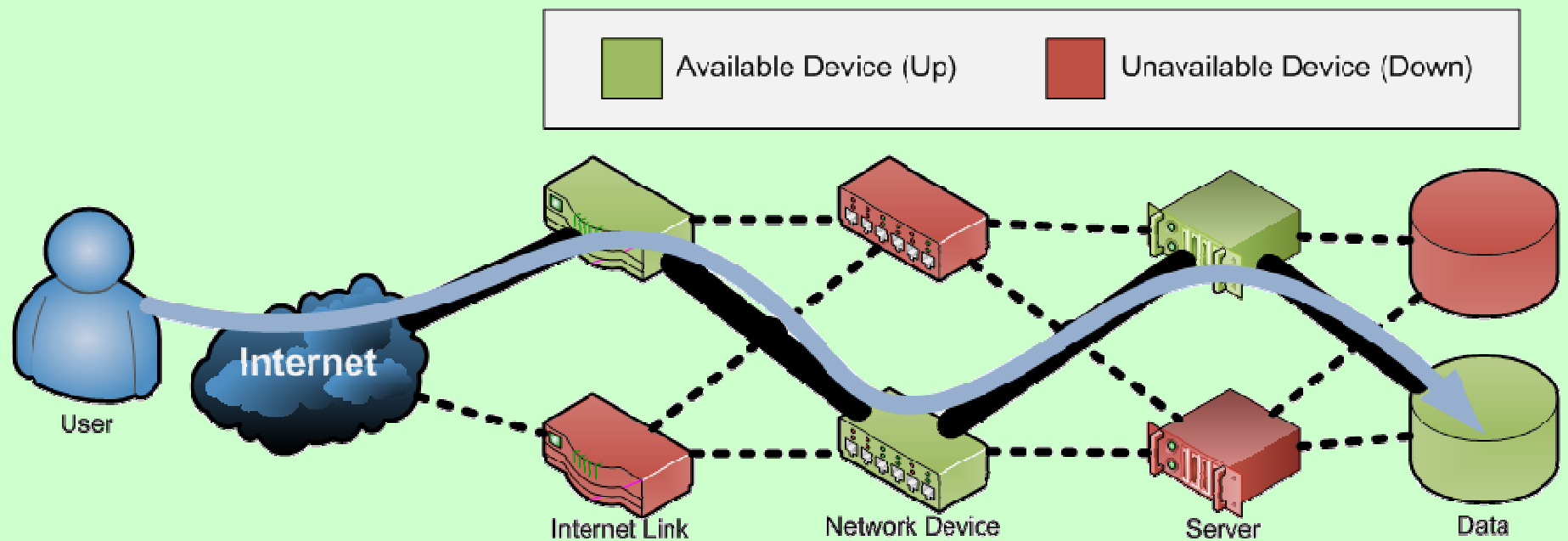
Source enterprise-class equipment from mainstream vendors

- HP
 - Incorporated in 1947, currently employs 150,000
 - According to *IDC's Worldwide Quarterly Server Tracker, August 2006* HP has the "number 1 vendor ranking worldwide with 30.5% server shipment share growing 12.0% year over year".
- Cisco
 - Founded in 1984, currently employs 47,000
 - Infonetics Research's recent reports *User Plans for Routers and User Plans for LAN Switches* September 2006 "Cisco leads the list of installed router and LAN switch vendors by far, with 87% of router respondents and 68% of LAN switch respondents using Cisco products"
- NetApp
 - Founded in 1992, employs over 5000
 - According to *IDC Worldwide Quarterly Disk Storage Tracker, September 2006* "The iSCSI SAN market continues to show strong momentum ... Network Appliance continues to lead this market with 27.6% share"
- RedHat
 - Founded in 1993
 - Dominant Linux distribution in the United States



High-Availability

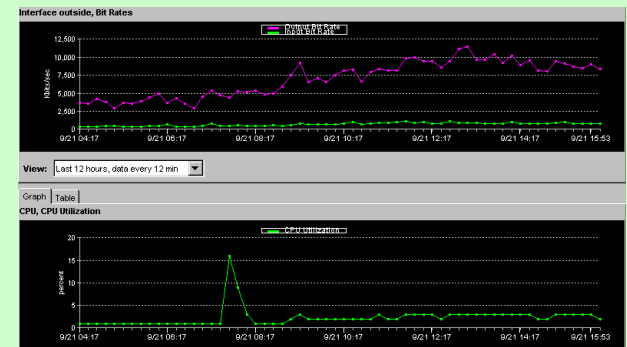
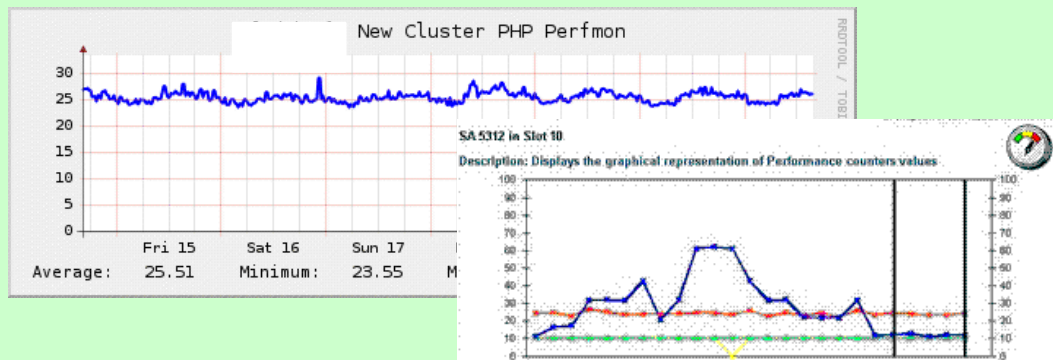
A system with High-Availability design can eliminate most unplanned downtime by introducing redundant hardware and software solutions.

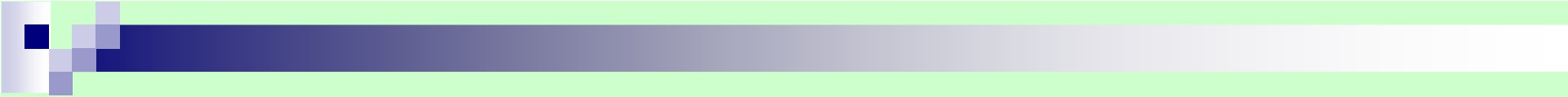


Diagnostic and Monitoring

Extensive use of diagnostic and monitoring systems directly impacts HR efficiency and user experience:

- Notify administrators of problems before they affect customers. Since issues are escalated before they become emergencies, administration activities can be scheduled in advance (no on call / full-time admin staffing necessary).
- Automatically page contacts in case of an emergency.
- Assist in troubleshooting to speed resolution of issues.
- Analyze performance of individual components allowing management to scale the system more effectively.





Commercial Email Platform

- Source all email packages from the same vendor instead of custom integrating many inferior freeware products
- Allow for easy rollout of revenue generating mail features
- Lessen dependence on a customized solution that would be hard for generic IT resources to manage.

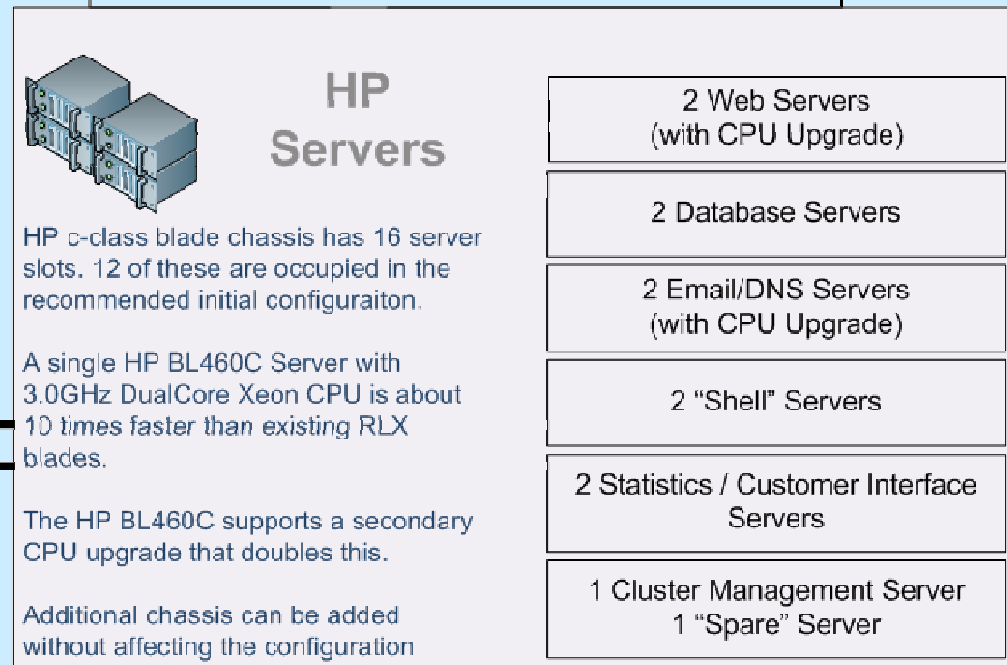
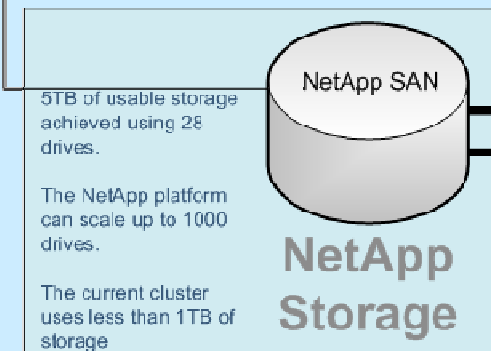
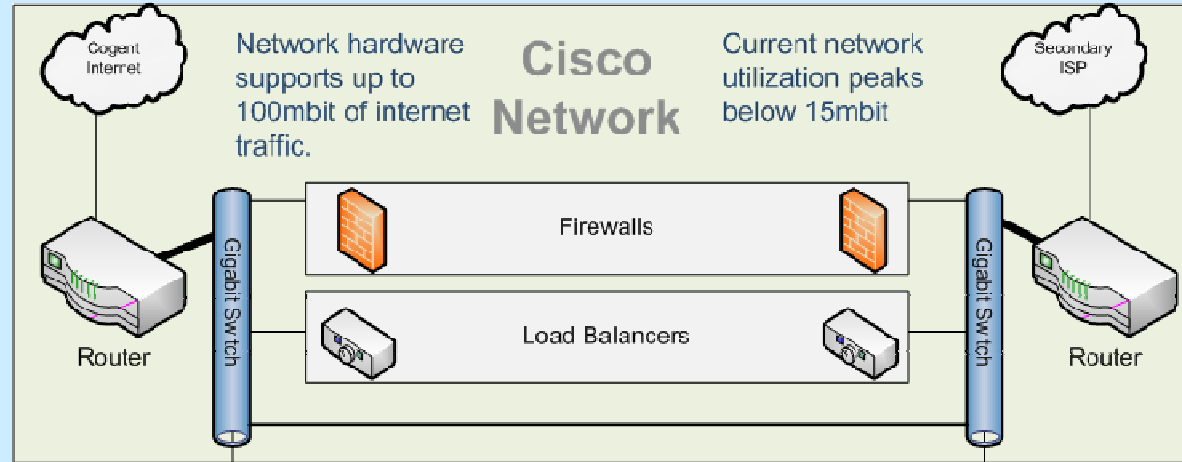
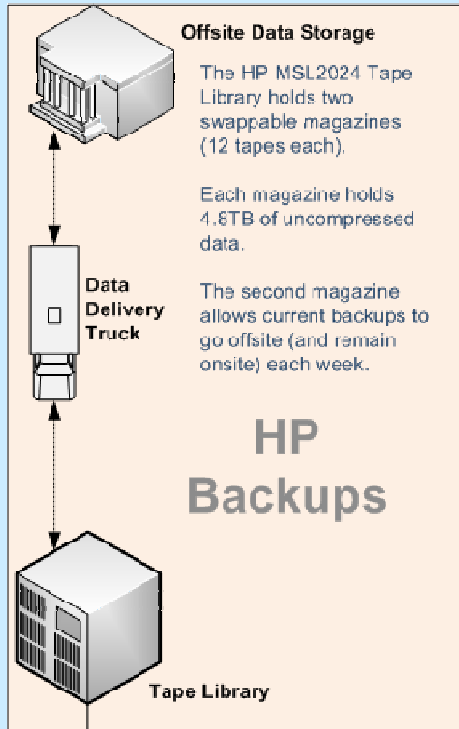


Recommended Platform Design

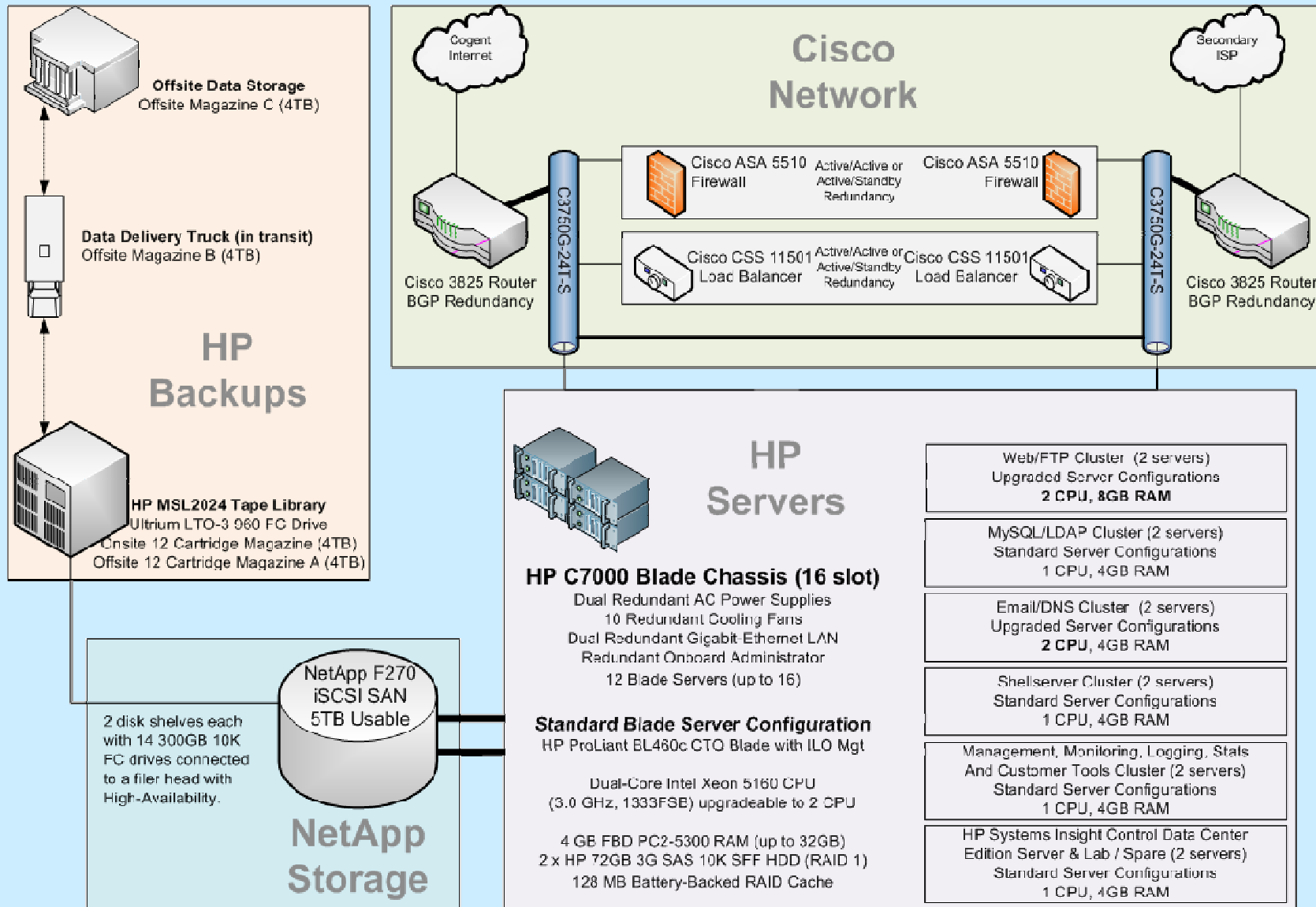
Key Points:

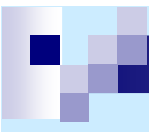
- All production systems are in High-Availability configurations.
- All vendors are first-class and will be serving for the long-haul.
- High speed network design supports internet loads up to 100mbit (currently never above 15mbit).
- HP Blade Server model eliminates cable management issues, provides remote console access, centralizes hardware diagnostic and management efforts. Easily facilitates upgrades of existing blades or additional blades to multiply computing power.
- Gigabit LAN ensures no local network bottlenecks.
- GFS iSCSI network-accessible filesystem allows for speeds several magnitudes faster than current NFS systems. Paves way for FC SAN upgrade.
- Industry-standard tape backup solution allows XYZ LLC to always maintain a backup set of all data in an offline format on location and offsite in a secure data storage facility.

Recommended Platform Diagram:



Recommended Platform Diagram:





Mirapoint Email Platform

- Source all email packages from the same vendor instead of custom integrating many inferior freeware products:
 - POP
 - IMAP
 - Webmail
 - Mail Storage
 - Mail Transport
 - Anti-Spam
 - Anti-Virus
- Allow for easy rollout of revenue generating mail features:
 - Mobile Email (XYZ LLC email available on mobile phones and PDAs)
 - Allow Anti-Spam / Anti-Virus feature-sets to be 'value added' for upgraded mail packages
 - Host "Group" Calendaring (like Microsoft Exchange)
 - Allow customers to manage their own mail accounts and settings
 - Others...
- Lessen dependence on a customized solution that would be hard for generic IT resources to manage.

TCO Study

Approximate 3-year hardware/software cost.

Cisco Network		
	3825 IP Routers, 3750G-24T-S LAN Switches, ASA 5510 Firewalls, and CSS 11501 Load Balancers	\$65,750.00
HP Servers		
	C7000 Loaded Chassis and Interconnect Modules 12 BL460C-5160 Servers (various configurations)	\$84,000.00
NetApp Storage		
	FAS270-HA 5TB Usable Storage and Backup Software	\$78,000.00
HP Backup		
	HP MSL2024 LTO3 FC Tape Library 48 LTO3 Tapes, and Tape Accessories	\$19,500.00
RedHat Operating System for Servers		
	RedHat Linux Enterprise ES GFS and RedHat Net Provisioning/Management License	\$70,000.00

3-Year TCO	\$317,250.00
Total Cost per Customer*	\$31.73
TCC/Month*	\$0.88
% Revenue*	18%

**Assumes \$5/mo per Customer, 10k accounts.*

All components include vendor support contracts for 3 years (technical assistance, repairs, parts).

TCO Study with Mirapoint Mail

Approximate 3-year hardware/software cost.

Cisco Network	3825 IP Routers, 3750G-24T-S LAN Switches, ASA 5510 Firewalls, and CSS 11501 Load Balancers	\$65,750.00
HP Servers	C7000 Loaded Chassis and Interconnect Modules	\$84,000.00
	10 BL460C-5160 Servers (various configurations)	\$72,000.00
NetApp Storage	FAS270-HA 5TB Usable Storage and Backup Software	\$78,000.00
HP Backup	HP MSL2024 LTO3 FC Tape Library	\$19,500.00
	48 LTO3 Tapes, and Tape Accessories	
RedHat Operating System for Servers	RedHat Linux Enterprise ES	\$70,000.00
	GFS and RedHat Net Provisioning/Management License	
Mirapoint Mail Solution		
	Mirapoint M5000S Servers, Client Access Licenses*	\$205,000.00
	Brocade Silkworm 205E FC Switch	

3-Year TCO	\$510,250.00
Total Cost per Customer*	\$51.03
TCC/Month*	\$1.42
% Revenue*	28%

*Assumes \$5/mo per Customer, 10k accounts.

All components include vendor support contracts for 3 years (technical assistance, repairs, parts).

Next steps:

- **Confirm solution configuration and execute implementation:**
 - Negotiate terms with backup internet provider, Telehouse, Tucows and offsite data storage company.
 - Order and receive hardware and software.
 - Lab solution in the Berkshires.
 - Install new systems in Telehouse and integrate with backend systems (new helpdesk / billing servers).
 - Transfer copy of production data (webpages and email)
 - Point customer domains at new systems.

- **Diversify product lines:**
 - Mobile Email (PDA, mobile phone connectivity)
 - Shopping Cart / Webpage creator
 - Windows Hosting
 - Virtual Server Hosting / Dedicated Server Rental