

Platform Selection

June 11th, 2010





Agenda

- Blue Cross Blue Shield of Minnesota Background
- BCBSMN's Platform Selection Process for SAP
- Platform Selection Notes
- Perception of the Mainframe
- Summary



BCBSMN Background

- Chartered in 1933 as Minnesota's first health plan.
- Founding mission: To promote a wider, more economical and timely availability of health services for the people of Minnesota.
- Not-for-profit, taxable organization
 - \$9.1 billion revenue
 - \$8.3 billion paid to providers
 - 2.7 million lives insured, in and out of Minnesota
 - Largest health insurer of Minnesotans
 - 3,800 employees



BCBSMN Background

Blue Cross Blue Shield Association

- The Blues are comprised of 39 independent health plans
- About evenly split between for-profit and non-profit
- Serves 102 million members nationwide
- 90% of all U.S. hospitals participate in BCBS
- 80% of all U.S. physicians participate in BCBS



BCBSMN Background

Manage / contain costs

- Run on a 1% Operating Margin
- Membership flat
- As Non-Profit, need to maintain thresholds on capital/expense

Complex IT environment

- Built tacitly over time
- Unknown interconnections between environments and applications
- Technician's dream – business nightmare

Reconnect with the business



Corporate Perspective

IT Needs to:

- Communicate with the business/customers more in their language
- Be agile so we can quickly react to business needs
- Demystify the complexity surrounding technology
- Deliver on the changes it promises
- Keep complexity “behind the curtain” (allow people to focus on business)
- Ensure IT foundational work (plumbing) is in place when the business needs industry differentiator functionality/technology
- Focus on providing useful information to the business versus focusing on foundational technical data

Customers expect systems to be available, performing adequately, and have data/information up to date. They are a simple click away from a competitor's site



BCBSMN's Platform Selection Process

Previous SAP Environment

- Database located on DB2 on z/OS
- Remainder located on Intel platform
- Needed to upgrade to new release of SAP
- Needed to complete the whole project in 3 months



BCBSMN's Platform Selection Process

IBM zLinux Sizing Analysis

- **Provided IBM performance data**
- **IBM performed analysis**
 - Recommended 18 IFL's
- **We teamed with local IBM experts to analyzed data**
 - Ended up needing approximately 25% of that to run our SAP environment



BCBSMN's Platform Selection Process

Platform Five Year TCO Cost Comparison between zLinux, UNIX, Windows

- **Included initial costs for:**

- All hardware purchase (Servers / CPU's / Racks / KVM's / Power Supplies / Cables / Tape Drives)
- All software purchase (O/S, Security, Backup, etc)
- Hardware / Software annual maintenance
- Technology refresh
- Keep the Place Running costs (patches, software upgrades)
- Disaster Recovery costs (exercises as well as real disasters)

- **Not included initial costs for:**

- Personnel costs
- Network costs
- Data Center costs



BCBSMN's Platform Selection Process

Individual Server / Engine Costs

UNIX Server Cost		
	YR1 Capital	YR1 Expense
Stand-Alone UNIX Server **	\$30,000	\$1,700
Racks / Cabling ****	\$5,000	\$0
Monitoring Software	\$1,200	\$200
Security Software	\$1,500	\$300
Backup Software (per Instance)	\$700	\$100
OS & System Software	\$2,600	\$500
Total Cost Basic Server	\$41,000	\$2,800

4 port Ethernet, 2 each dual port HBA, SAS controller, AIX, Power VM,

**** Rack/Cabling costs assume \$10,000 for Rack, Power Supply, KVM, etc. Assume 5 servers per rack. Assume \$3,000 for server installation and cabling

Intel Server Cost		
	YR1 Capital	YR1 Expense
DL580	\$8,000	\$300
Racks / Cabling	\$3,000	\$0
Monitoring Software	\$800	\$100
Security Software	\$1,200	\$200
Backup Software (per Instance)	\$700	\$100
O/S	\$2,300	\$500
Total Cost per Basic Server	\$16,000	\$1,200
2-Way QuadCore - 12GB Memory 300GB Storage		

zLinux Server Cost		
	YR1 Capital	YR1 Expense
IFL	\$75,000	\$7,500
Racks / Cabling ****	\$0	\$0
Monitoring Software	\$600	\$100
Security Software	\$800	\$100
Backup Software (per Instance)	\$700	\$100
OS & System Software	\$31,500	\$3,100
Total Cost Basic Server	\$108,600	\$10,900

Note: All costs estimates



BCBSMN's Platform Selection Process

		Intel								
Server Function	Qty	# of Processors	# of Software PVU's	Initial Cost	Yr 1 Maint	Yr 2 Maint	Yr 3 Maint	HW Refresh	Yr 4 Maint	Yr 5 Maint
Primary Prod Servers	3	6	600	\$48,000	\$3,600	\$3,600	\$3,600	\$57,600	\$4,300	\$4,300
High Availability (HA) Prod Servers	3	6	600	\$48,000	\$3,600	\$3,600	\$3,600	\$57,600	\$4,300	\$4,300
Primary QA Servers	3	6	600	\$48,000	\$3,600	\$3,600	\$3,600	\$57,600	\$4,300	\$4,300
High Availability (HA) QA Servers	3	6	600	\$48,000	\$3,600	\$3,600	\$3,600	\$57,600	\$4,300	\$4,300
Primary Dev Servers	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
High Availability (HA) Dev Servers	2	4	400	\$32,000	\$2,400	\$2,400	\$2,400	\$38,400	\$3,000	\$3,000
Primary PRL Servers	3	6	600	\$48,000	\$3,600	\$3,600	\$3,600	\$57,600	\$4,300	\$4,300
High Availability (HA) PRL Servers	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Primary UPG Servers	2	4	400	\$32,000	\$2,400	\$2,400	\$2,400	\$38,400	\$3,000	\$3,000
High Availability (HA) UPG Servers	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Network Switches in Data Center				\$200,000	\$15,000	\$15,000	\$15,000	\$220,000	\$20,000	\$20,000
Total	19	38	3800	\$504,000	\$37,800	\$37,800	\$37,800	\$584,800	\$47,500	\$47,500
				\$1,249,700						

Assumes 10% growth in processing capacity over three years



BCBSMN's Platform Selection Process

		UNIX								
Server Function	Qty	# of Processors	# of Software PVU's	Initial Cost	Yr 1 Maint	Yr 2 Maint	Yr 3 Maint	HW Refresh	Yr 4 Maint	Yr 5 Maint
Primary Prod Servers	3	6	600	\$123,000	\$8,400	\$8,400	\$8,400	\$147,600	\$10,000	\$10,000
High Availability (HA) Prod Servers	3	6	600	\$123,000	\$8,400	\$8,400	\$8,400	\$147,600	\$10,000	\$10,000
Primary QA Servers	3	6	600	\$123,000	\$8,400	\$8,400	\$8,400	\$147,600	\$10,000	\$10,000
High Availability (HA) QA Servers	3	6	600	\$123,000	\$8,400	\$8,400	\$8,400	\$147,600	\$10,000	\$10,000
Primary Dev Servers	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
High Availability (HA) Dev Servers	2	4	400	\$82,000	\$5,600	\$5,600	\$5,600	\$99,000	\$6,700	\$6,700
Primary PRL Servers	3	6	600	\$123,000	\$8,400	\$8,400	\$8,400	\$147,600	\$10,000	\$10,000
High Availability (HA) PRL Servers	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Primary UPG Servers	2	4	400	\$82,000	\$5,600	\$5,600	\$5,600	\$99,000	\$6,700	\$6,700
High Availability (HA) UPG Servers	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Network Switches in Data Center				\$200,000	\$15,000	\$15,000	\$15,000	\$220,000	\$20,000	\$20,000
Total	19	38	3,800	\$979,000	\$68,200	\$68,200	\$68,200	\$1,156,000	\$83,400	\$83,400
								\$2,506,400		

Assumes 10% growth in processing capacity over three years



BCBSMN's Platform Selection Process

		zLinux								
Server Function	Qty	# of Processors	# of Software PVU's	Initial Cost	Yr 1 Maint	Yr 2 Maint	Yr 3 Maint	HW Refresh	Yr 4 Maint	Yr 5 Maint
IFL's	6	6	720	\$651,600	\$65,400	\$65,400	\$65,400	\$0	\$78,480	\$78,480
Racks / Cabling				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Network Switches in Data Center				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	6	6	720	\$651,600	\$65,400	\$65,400	\$65,400	\$0	\$78,480	\$78,480
				\$1,004,760						

Assumes 10% growth in processing capacity over three years



BCBSMN's Platform Selection Process

Surface Cost Per Server/Engine	
Intel	\$16,000
UNIX	\$41,000
zLinux	\$108,600

5 Year SAP Cost	
UNIX	\$2,506,400
INTEL	\$1,249,700
zLinux	\$1,004,760

The costs included are for /Hardware and System related Software (O/S, Monitoring, Security, Backup).

Middleware /ISV software not included. Also not included is labor related costs for day to day on-going maintenance.



BCBSMN's Platform Selection Process

Gathered Industry Information

- **Talked to references**
 - Limited number of companies running DB2 on z/OS and remaining on zLinux
 - Found two we could talk to
- **Documented Pros/Cons for zLinux**



BCBSMN's Platform Selection Process

Document "Virtual" Vision for zLinux

- **There's strength in numbers for zLinux – the more you add, the less each guest costs**
- **Additional workloads can be migrated to the zLinux platform in the future**
 - **zLinux is true "shared" environment. When resources not being used, other applications can utilize them**
 - **Not necessary to purchase additional Hardware/Software for each project**
 - **Software licensed by processor (engine) or PVU**
 - **Software Upgrade Fees that kill z/OS do not exist on zLinux**
- **Create "estimated TCO"**
 - **Conservative numbers**
- **Disaster Recovery follows DR on Mainframe**



BCBSMN's Platform Selection Process

- **Presented Analysis to Executive Management**
- **We let the numbers speak for themselves**
- **Presented risks for zLinux platform**
 - Technician acceptance
 - Potential turnover and plan to deal with it
 - Vendor compliance on ISV software other than SAP
- **Recommended zLinux**



BCBSMN's Platform Selection Process

Implementation

- **Went as planned. zLinux was the only platform option to enable the completion of the project within the given time frame.**
- **Created and Implemented full Disaster Recovery capabilities**
- **For the "bumps" we did experience, IBM was a great help (even when it was a SAP issue)**
- **In addition to SAP, we hosted the following on zLinux (with no additional hardware/software costs):**
 - Stellant (now Oracle UCM)
 - MQSeries
 - eTrust (distributed Security)
 - Development servers



BCBSMN's Platform Selection Process

Current zLinux Roadmap

Platform of choice

- Initial Workload:

SAP

MQSeries

ServiceNow

Dev Stellent

eTrust Admin

Dev RAD servers

Selected Development Oracle Databases



BCBSMN's Platform Selection Process

Current zLinux Roadmap

Platform of choice

- In Process of migrating existing workloads to zLinux:

WAS

Portals

Message broker

DNS

MQSeries (all dist environments)



BCBSMN's Platform Selection Process

Current zLinux Roadmap

Platform of choice

- Next Wave of Migrations (dependent on HW Lease expiration):
All Stellent All Oracle DB2/UDB Data warehouse



Platform Selection Notes

Pain Points

- **Memory:**

- Applications can never have enough
- Understand how it works on mainframe hardware (less is more)
- Learning curve

- **Performance:**

- Bad application code will not perform better on zLinux

- **Monitoring:**

- Consuming resources (remember this is a shared environment)
- Understanding the output from the tools (performance tool kit)
- Internal technician resistance



Platform Selection Notes

IBM zLinux Sizing Analysis Cautions

- **Need to team with correct internal IBM personnel**
- **IBM Legal department: cautious sizing statements**
- **IBM technical people conservative with estimates**
- **IBM analysis points to non-zLinux platforms if you take it at face value**



Platform Selection Notes

Understand Political/Cultural Impact

- **TCO may be difficult:**
 - Hard Costs:
 - Include cost for HA environment?
 - Include cost for non-production environment?
 - Include cost for racks and cabling?
 - Include cost for environmentals (power / cooling / floor space)
 - Include FTE numbers?
 - Software licensing costs
 - Soft Costs:
 - Time to delivery
 - Flexibility



Platform Selection Notes

Understand Political/Cultural Impact

- **Technology Preferences:**
 - People will leave the company
 - Management
 - Technicians
 - Beware of passive resistance to stated direction
- **People will need to learn/adapt to contradicting principals**
- **Teams will (probably) need to be restructured**



Platform Selection Notes

Understand Financial Impact

- **View and acquire hardware on TCO basis versus primarily acquisition basis**
- **Could be greater up front costs (depending on how you manage the mainframe acquisitions), but lower on-going and long term costs**



Platform Selection Notes

Benefits of the zLinux Environment

- **New projects will be delivered faster with lower cost & increased reliability:**
 - No need to always acquire additional hardware
 - Leverages advantages of a true shared resource environment
 - Overall environment far simplified
 - Less cabling – cable mainframe once
 - Fewer racks – servers all internal to the mainframe
 - Connections logical versus physical
 - One person can do all from their desk
 - Improved workload management capabilities
- **Blends stable “mainframe attitude” with fast paced “distributed attitude” – best of both worlds**
- **The more that’s added to the platform, the lower the overall cost**
- **Permits IT to focus on the business versus technology**



Perception of the Mainframe

Would you rather have a \$10,000 server or a \$1,000,000 Mainframe?

- UNIX/Intel environments cost 2x – 3x more than the Mainframe (w/ zLinux)
- Stability/Reliability is Higher on Mainframe zLinux
- Utilization is higher on Mainframe zLinux (you're able to use what you buy)
- Server provisioning / retirement is quicker on Mainframe zLinux
- Mainframe zLinux simplifies technology complexity (Servers/Networks/DR, etc)
- The more you put on the mainframe:
 - The lower the overall cost (including zLinux)
 - The rate of increased FTEs for support is lower
 - Disaster Recovery is simplified
- The more you put on a UNIX/Intel platform:
 - The higher the overall cost
 - The rate of increased FTEs for support is far higher
 - Disaster Recovery is more expensive and difficult to accomplish



Perception of the Mainframe

Users can make their own changes instead of waiting for IT to make the changes in the cumbersome mainframe environment. IT FTE's will decrease.

- The UNIX/Intel environments are overall more complicated
- IT staffs have increased to handle the new workload
- Business users have performed some "IT" functions. However, in most cases fundamental activities are not handled (backups, DR, patching, security, etc)

Vendor software costs will decrease due to increased competition

- Vendor licensing is as expensive as on z/OS



Perception of the Mainframe

Technology will be able to rapidly change direction due to the cheap cost of the environments

- It's more difficult to change due to lack of enterprise focus
- Technology has changed, but is not as stable
- Often a departmental solution is used for an enterprise solution
- IT organizations spend valuable time on hardware & O/S level activities



Perception of the Mainframe

The mainframe technology is outdated

- Mainframe technology has been Highly Available for years
- Mainframe technology has had clustering capabilities for years
- Mainframe technology has utilized virtual machines, memory, I/O, and Networks for years
- Mainframe technology's system optimization/monitoring software has been mature (and still maturing) for years
- Mainframe technology continues to be the only platform to run mixed workloads – ability required to truly consolidate processing
- Mainframe technology has leveraged rapid provisioning, capacity flexibility, sharing of resources, and security (all components of Cloud Computing) for years
- Mainframe technology has leveraged Thin Client functionality for years(3270)
- Architectural advances has kept the mainframe on the technology cutting edge with world-class availability



Perception of the Mainframe

The mainframe is dead

- In 2000, the mainframe market share was 17%
- In 2009, the mainframe market share was 30%
- Mainframe (including zLinux) provides better:
 - SLA's
 - Growth capabilities
 - Cost containment
 - Service Management
 - Improved organizational structure
- Mainframe technology continues to not only handle high I/O transactional workloads but also high processing workloads such as Java, XML, encryption, SOA, and Analytics.

The UNIX/Intel environment Technology Evolution

- Continually focus on replicating the mainframe technology and functionality
- Continues to rely on model of every company having major IT FTE commitment
- Continues to put technology importance in front of business importance



Summary

zLinux will:

- Lower TCO
- Simplify the overall IT environment
- Increase resiliency / stability / and DR capabilities
- Allow you to free up staff to focus on the business
- Allow you to provision/retire servers rapidly
- Keep complexity “behind the curtain”

zLinux is not a one-size-fits-all solution. Need to make sure the financial statements work out prior to entering the game

Does your business care what O/S is used or simply business results?

Blue Cross Blue Shield of Minnesota





Thank You

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