Solution Whiteboard Coaching Guide

Cloud on System z

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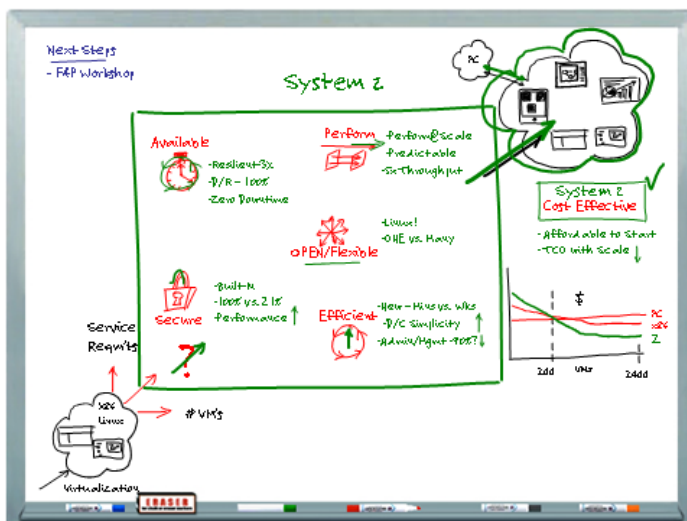Be Different. Where it Counts. Your Message.
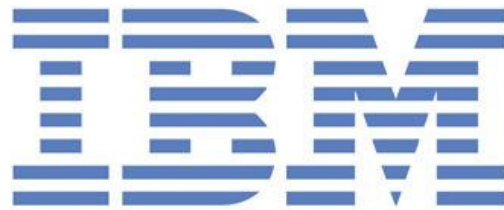
Version 2013-12-12

Introduction to the Whiteboard	

This whiteboard is intended to help **sellers** to better understand and discuss the **importance of** having the right systems infrastructure to take advantage of Cloud Computing. This whiteboard should enable a seller to have an interactive (Discovery & Qualification) discussion that not only helps to uncover the key client challenges and issues with respect to "the cloud" but also enable the seller to describe at a high-level **why and how System z** is the best/most capable/most efficient foundation/platform to be used as a Cloud infrastructure and why customers have selected System z for their cloud initiatives.

The whiteboard is also intended to help get **STG and SWG sellers** involved earlier in the sales cycle by educating SWG, STG and Client reps on how System z provides a better and more effective alternative for Cloud initiatives than going to distributed - x86 or other - alternatives.

The customer target audience for this discussion is the IT manager and/or LOB. Executive/management with budget responsibility for Cloud projects.

The goal of the Whiteboard is to get agreement to conduct a Right Fit for Purpose or other workshop focused on identifying potential Cloud applications or IT services and their requirements and where the IBM Team can help the client to see how an infrastructure built on System z will be the most appropriate (and best) environment versus competitive alternatives

The key advantages of a Whiteboard discussion to the seller are to be able to better control the specific content of the discussion, to be able to focus specifically on the key drivers for decisions for THAT audience, to be able to identify the right next step(s) AND be able to have the discussion ANYWHERE and ANYTIME.

Overview and Going Through This Whiteboard	
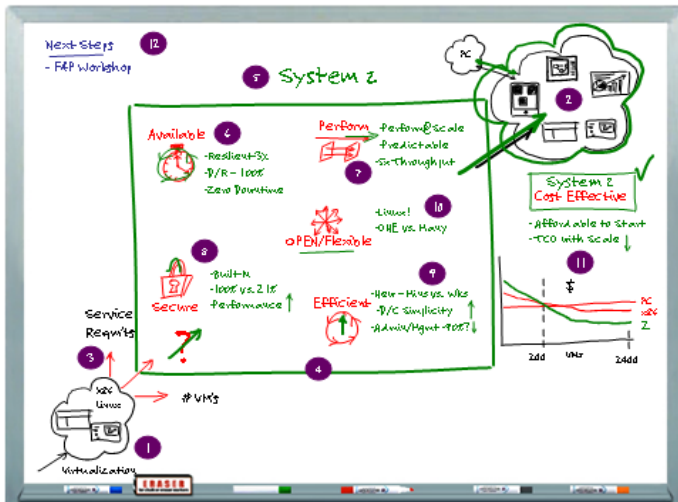
You should always check the Whiteboard Media Library (**http://w3.tap.ibm.com/medialibrary/media_set_view? id=29569)** in preparing to learn and give this whiteboard in particular to make sure that you have relevant and appropriate reference/customer stories and that you are prepared to cover the areas that may be important to the audience.

Discussion Steps in this Whiteboard are:

1. **Virtualization and Cloud – Today – Setting the Stage**
2. **Expanding the Cloud**
3. **Cloud Infrastructure Challenges**
4. **Requirements for Tomorrow's Cloud**
5. **System z**
6. **System z - Available**
7. **Performance**
8. **Security**
9. **Efficient**
10. **OPEN/Flexible**
11. **Cost Effective**
12. **Recap & Next Step**

The use of color in this Whiteboard:

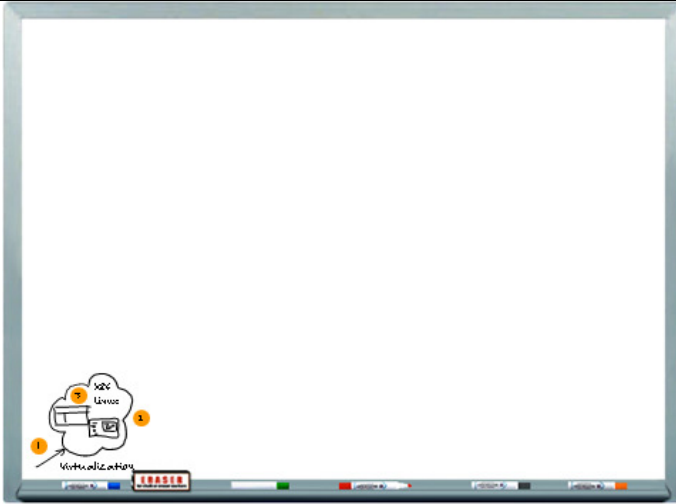**Black** - FACTS or subjects which frame the discussion.

Blue - Topics which we want to emphasize - typically Action-oriented, i.e., someone is going to do something (outlining what we will discuss for example) or has done something (customer story – **which you can add to this whiteboard**).

Red - Challenges or items which most people do not take into account in developing TCO.

Green - Action or activity which either overcomes an issue or provides a positive outcome.

The Items you should draw are shown in **[BOLD].**

| Step ONE – Setting the Stage	
  Questions: What efforts have you taken to-date with respect to virtualization and standardization? What efforts have you or other parts of the organization taken with respect to the Cloud? **NOTE to Presenter:** You probably know the answers to these questions. However mention these and have the customer discuss what they have gained and what they are expecting to gain in the future. This is just to get the customer to relax and to start the conversation. Ask the customer about the applications they are currently running in the cloud and what their experiences have been.	**[Step 1][Arrow – Virtualization]** If you are like most of the companies we talk to you've already realized some of the benefits associated with standardization and **virtualization** of your infrastructure … **[Step 2][Cloud]** … and may have started to take advantage of the Cloud to deliver new services or expand the reach of existing applications. **[Step 3][Application Icons]** … and more than likely these were probably relatively simple or departmental applications that were NOT business critical and were accomplished using a distributed infrastructure built on x86 Windows or Linux or you tried out one of the Cloud Service Providers.

Step TWO – Expanding the Cloud	
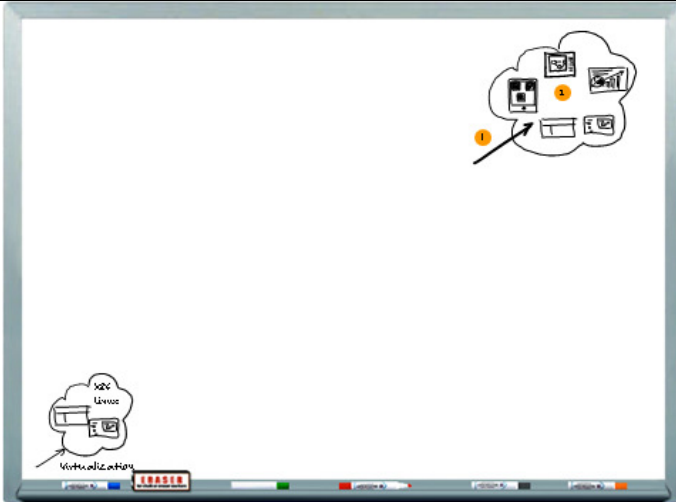
Questions:

Are you considering moving other applications or services to the Cloud? What types of applications? What's driving this? Reach? Mobility? Functionality? Competition? Customers or users?

Are any IT considerations driving any move to the Cloud? If yes, what? | **[Step 1][Arrow – Cloud]** Again, if you're like others, the organization may have realized some success with those "first" cloud services. Based on that, what you may NOW be facing is the Line of Business requesting that you look at deploying more services to the cloud to meet the demands they are getting both internally and externally – for services that incorporate:

[Step 2][Application Icons] … mobility, that support delivery and access to reporting and analytics, BIG DATA; that enable enhanced collaboration and social networking and enable other business critical applications to expand their reach.

Pressure to move to the cloud may be coming from others – your CFO – to lower costs or IT organization, who may be looking at how the Cloud can help them to centralize IT resources to be able to deploy new services more quickly, to provision IT resources more efficiently better leverage staff resources, and meet the CFO's goal of reduced costs. |

Step Three – CLOUD Infrastructure Challenges	
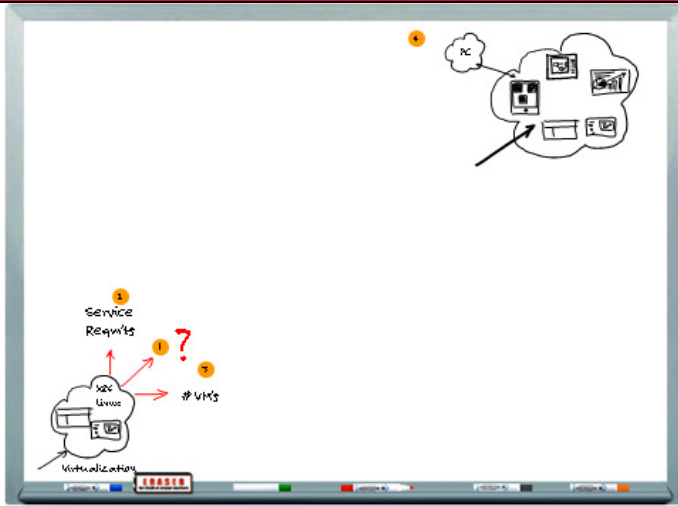
NOTE to Presenter:

Forrester Research in a study it conducted indicated that the next generation of applications moving to the cloud has specialized needs. This second generation of Cloud applications is more business and mission critical, with specific security, performance, and reliability needs that commodity infrastructure cannot easily accommodate. (*The Role Of Mainframes In Cloud: To Meet The Full Range Of Reliability And Security Needs - January 2013*)

Questions:

Have you encountered any issues or challenges with your current Cloud infrastructure? Can you be specific?

If not, are you concerned about their ability to handle future requirements?

[Step 1][Arrow – "?"] The challenge that organizations face as they look to expand their use of the Cloud and introduce more business and mission critical applications is whether their current infrastructure or cloud service provider can "really" meet …

[Step 2][Arrow – Service Reqmt's] … the quality of service requirements that more business critical applications have? The concern that most IT executives have when evaluating what approach they will take for their cloud infrastructure is not only can the infrastructure support the requirements but in the case of service providers who will have the ultimate responsibility to ensure that the environment and services are up and running and meeting SLA's and …

[Step 3][Arrow – VM's] can the environment scale to meet the potential growth in the number of users, the amount of data and the compute resources required to process the these applications.

[Step 4][Arrow – Small Cloud] And can the infrastructure enable you to effectively support a mix of environments supporting various cloud services that may already be in place – whether this is x86-based, Linux-based or Public Cloud services - also referred to as a **Hybrid Cloud.**

Step FOUR – Requirements for Tomorrow's CLOUD	
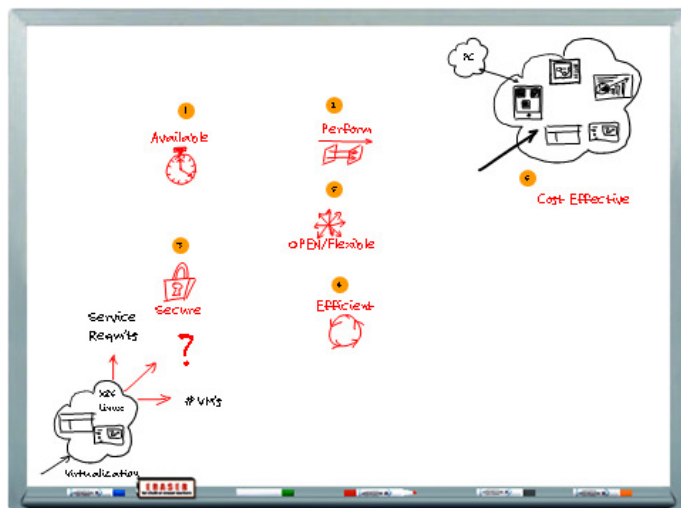
NOTE to Presenter: Forrester Research found the following as key requirements for Private Cloud:

Security – this remains one of, if not, THE top concern for executives as they consider the cloud.

Rapid recovery from failures. Some core enterprise applications have application-recovery SLAs of minutes, including application data. Eighty-eight percent of respondents said that this characteristic of private clouds was critically important or very important.

Zero-downtime environments. A truism in cloud computing is that architectures must quickly recover from inevitable failures in infrastructure. Eighty-six percent of respondents believe that it is critically important or very important for services within their cloud to be engineered to avoid failures — a more traditional view of system reliability.

Guaranteed (read: predictable) application performance. Application performance guarantees is also a priority among our survey respondents; 82% cited them as critically important or very important.

Questions:

Are these in line with what you are seeing?

What are the key priorities that you are seeing?

If we look at these challenges in more detail, the issue for you is whether your Cloud infrastructure can:

[Step 1][Stop Watch – Available] Ensure **HIGH Availability**. Especially as applications that "run the business", "provide access to mission-critical information" move to the cloud. Can it run 24x7? Will it enable you to recover quickly and completely from "issues"? Will it require adding significant infrastructure to meet requirements – more $$$.
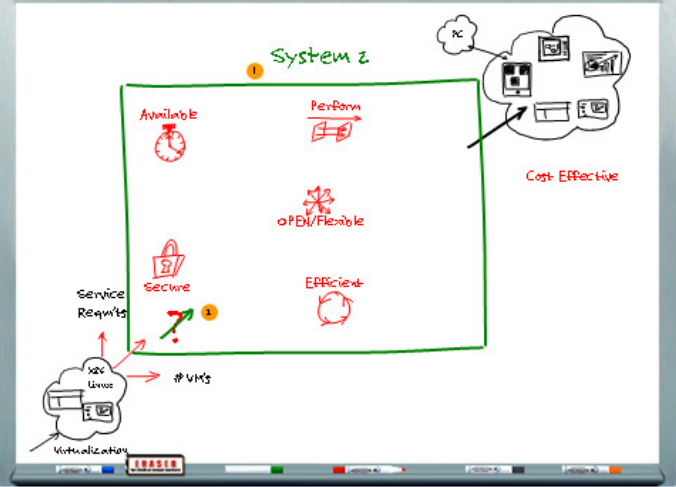
[Step 2][Arrows – Perform] Can it deliver the right level of **performance?** Today's users are NOT a patient lot. Will the Cloud infrastructure provide the application and data access performance to meet all application and user requirements OR will it max out meeting the needs of one application or service at the "expense" of others? Will it perform consistently as the number of users, the amount of data or the number of applications GROWS?

[Step 3][Lock – Secure] With the increasing number of threats that exist today - there are studies which indicate that enterprise IT infrastructures are **attacked 60,000 times per day**, can your infrastructure ensure the **security** of data, users and applications? Will the infrastructure be "safe" from intrusion attacks? Will it enable you to meet industry and/or regulatory requirements? Will it require additional and often costly hardware and/or software to be able to meet those requirements?

[Step 4][Icon – Efficient] Does the environment help you to be more **efficient** in developing, testing and deploying new services? Can it help to reduce operational costs? Does it provide capabilities which help to minimize the efforts associated with ongoing administration and management of the environment as it grows?

[Step 5][Icon – OPEN/Flexible] Does it support **open standards and enable flexibility** in how you deploy and manage Cloud services?

[Step 6][Cost Effective] Finally, how **cost effective** is it in terms of getting going? But more importantly in terms of

	TCO over time and with increased scale?
Step Five - System z	
  NOTE to Presenter: You do NOT need to go through every area in-depth. You should focus your discussion on the key areas that the audience indicated were most important to them BUT make sure to VERY briefly highlight other areas that are key competitive differentiations.	[Step 1][System z – Box] It's dealing with these challenges and requirements where a Systems z-based cloud environment can get you … and your organization [Step 2][Green Arrow] … from where you are today to where you would LIKE to be or NEED to be with cloud computing. In fact, studies indicate that 81 percent of System z customers are deploying cloud vs. 63 percent for x86 and there are good reasons why. What I'd like to do is quickly sketch out how System z can meet the requirements and challenges we just discussed (and that you indicated were most important to you and your organization).

Step SIX – System z - Availability	
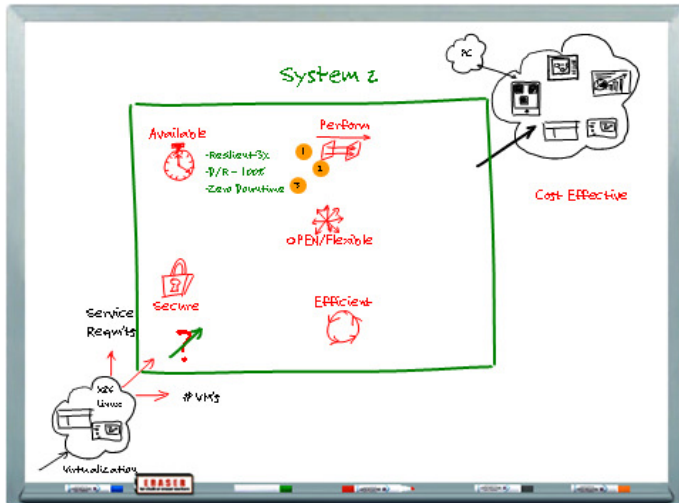
Note to Presenter:
ZIVIT: http://www-01.ibm.com/software/success/cssdb.nsf/CS/RNAE-94VRZN?OpenDocument&Site=eserverzseries&cty=en_us (published **May 2013**)
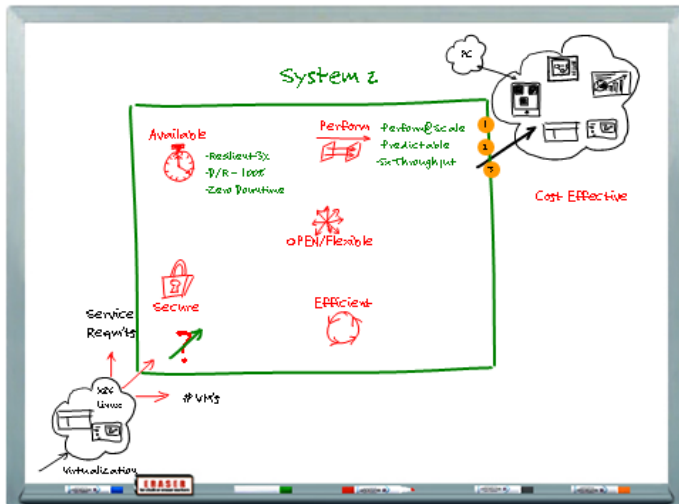**Sparda Datenverarbeitung eG: Internal reference:**
http://w3-01.ibm.com/sales/ssi/cgi-bin/ssialias?infotype=CR&subtype=NA&htmlfid=0GLOS-7YTK8R&appname=crmd   (Published Jan2010, Last updated/reviewed Feb2013)

[Step 1][Resilient – 3X] High availability is critical to many if not most Cloud services. System z has demonstrated significantly higher **resiliency** over distributed environments and in particular x86 platforms. An Interglobal study found that System z is **3X more resilient** than other environments. **Sparda Datenverarbeitung eG** relies on SUSE Linux Enterprise Server to support online banking services for their 4.2 million customers – with System z they are experiencing over **99 percent availability.**

[Step 2][Disaster Recovery - Up Arrow] System z can also enable you to simplify your disaster recovery operations. For many organizations disaster recovery complexity is an issue – with distributed infrastructures, the growing number of servers, networking requirements, increased software to manage, etc., can make disaster recovery more challenging, time-consuming and often "unsuccessful". For example, System z customers typically **test COMPLETE recovery annually**, especially for business critical workloads. If you have a **distributed server environment, what %** of those servers do you test to completion every year?

[Step 3][Zero-downtime] Forrester found that eighty-six percent of respondents believe that it is critically important or very important for services within their cloud to be engineered to avoid failures. System z has demonstrated almost zero-downtime - **less than 5 minutes per year**. For example, **ZIVIT** has more than 400 Linux guest operating systems using the IBM z/VM virtualization environment on the z196 mainframes. This provides **automatic failover with systems recovery in less than one hour without data loss**.

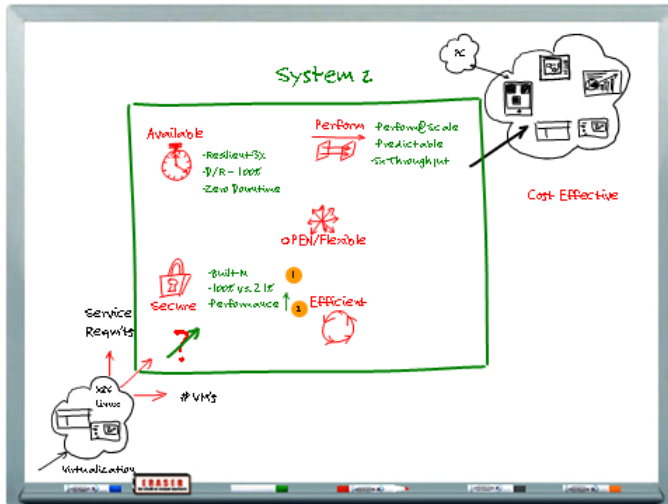| Step SEVEN – Performance	
  NOTE to Presenter: **EVRY:** http://www-01.ibm.com/software/success/cssdb.nsf/CS/STRD-9BMGEK?OpenDocument&Site=eserverzseries&cty=en_us (Sep 2013)	**With respect to performance…** **[Step 1][Perform@Scale]** System z gives an organization the ability to **scale** to meet demand at the same time ensuring **performance** quality. System z provides unmatched scalability to support high business growth – by being able to add capacity dynamically to running applications. The key is that System z provides Linear Response Time as the System scales from 1 TB to 50 TB. For example, IBM System z customer **EVRY** processes around 100 million transactions each day, but during one holiday period online shopping events pushed daily transactions to a peak of 128 million – IT management reported that System z **handled this peak in transaction volumes without "breaking a sweat".** **[Step 2][Predictable]** With the increasing need to provide more users with **predictable**, Real-Time access to data, System z can provide significant advantages - with single system design and the co-location of data with applications – whether this is Linux to Linux or Linux to Legacy - there are significantly fewer network hops to get to data than in x86 environments - and that means faster access and improved ability to take ACTION. **[Step 3][5X Throughput]** System z incorporates the fastest processors in the commercial systems market today. Its I/O design has demonstrated 5X throughput over x86 platforms.

Step EIGHT – Security	

NOTE to Presenter:

Vantiv: http://www-01.ibm.com/software/success/cssdb.nsf/CS/ARBN-97VNJ8?OpenDocument&Site=eserverzseries&cty=en_us

[Step 1][Built-in - 100% vs 21%] As demonstrated in a study by Solitaire Interglobal in 2012, System z incorporates **100% of the Corporate Security features required versus 21%** in x86 systems. For any organization exposure to sensitive data can be costly in many ways. System z hypervisors contain the needed controls to help ensure the security of applications and data hosted in highly virtualized environments. What this means is that you can have confidence that your data, your systems and your applications are being "protected" in the most effective environment around and that can mean you can pass that confidence on to your users, customers and partners.

System z security controls have been evaluated by an independent third party against an internationally recognized set of security requirements. In fact, System z PR/SM has earned a Common Criteria EAL 5+ certification which is one of most rigorous for a general purpose computing platform, and attests to the stringent isolation that System z can enforce to ensure the isolation of workloads.

IBM's System z also leverages hardware to help optimize security functions with cryptography functions built directly into the CPUs and with the CryptoExpress coprocessor cards help provides the security demanded by sensitive financial transactions & workloads.

[Step 2][Security Performance – Up Arrow] It's not just that you have the security **capabilities** it's that you can get the **performance** required as well. One example of how System z helped an organization **– Vantiv** implemented a robust crypto security solution that handles 19 billion credit card transactions on an annual basis as well as easily handling over 103 million cryptographic operations on a daily basis.

Step NINE – Efficient	
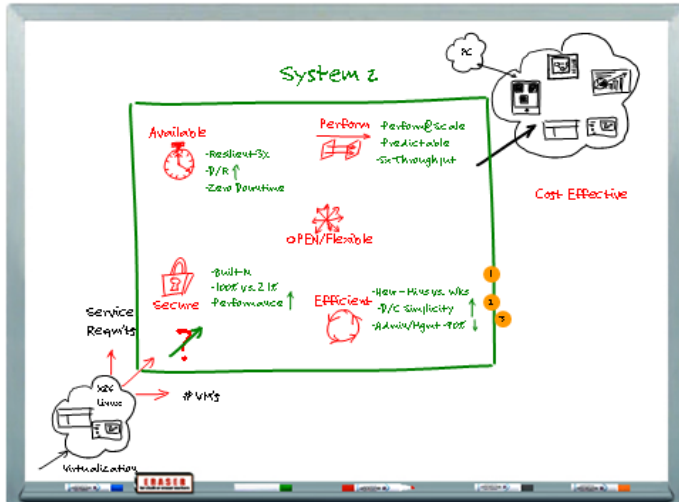
NOTE to Presenter:

Nationwide:
http://www.ibm.com/software/success/cssdb.nsf/CS/JSTS
-7JERD7?OpenDocument&Site=eserverzseries&cty=en_us
(Published Sep 2008; Validated May 2013)

Izumiya: http://www-
01.ibm.com/software/success/cssdb.nsf/CS/ARBN-
98DKUK?OpenDocument&Site=default&cty=en_us

System z has consistently demonstrated that it can provide the most operationally efficient environment.

[Step 1][New – Mins vs. Weeks] By reducing the complexity and expense associated with distributed environments, System z is helping organizations **deploy new innovative services MORE quickly**. For example, at **large U.S. bank**, when they needed a new server for an application they would go through the 6-week procurement cycle with System z – its 30 minutes for a new environment which can fully support their requirements. At **Nationwide** where they are supporting 600 developers on one physical server, they have been able to accelerate the deployment process such that they have been able to deploy 15 applications into their JAVA Cloud in one weekend.

[Step 2][Data Center Simplicity - Up Arrow] System z can also enable you to **simplify your data center** operations. Its ability to scale vertically versus the x86 alternative of scaling horizontally can make a big difference with space and associated costs. System z can provide you with one of if not THE most efficient environments to run Linux (as well as x86 workloads). For example, **Izumiya** consolidated 115 distributed servers to a single server which will reduce server installation area from 1,800 square feet to 180 square feet and IT system and administration cost by 20 percent. **Nationwide's** System z based cloud solution reduced power, cooling and floor space requirements by 80% and saved an estimated $46 million to date over its previous distributed environment.

[Step 3][Admin-Mgmt – 90% Down Arrow] Fewer systems along with the right system administration and management tools can mean fewer staff resources to operate and manage the environment - studies have shown that System z can require 1/10th the number of staff resources versus x86. With Linux on System z - staff can leverage their current Linux skills WITHOUT change.

Step TEN – OPEN/Flexible	
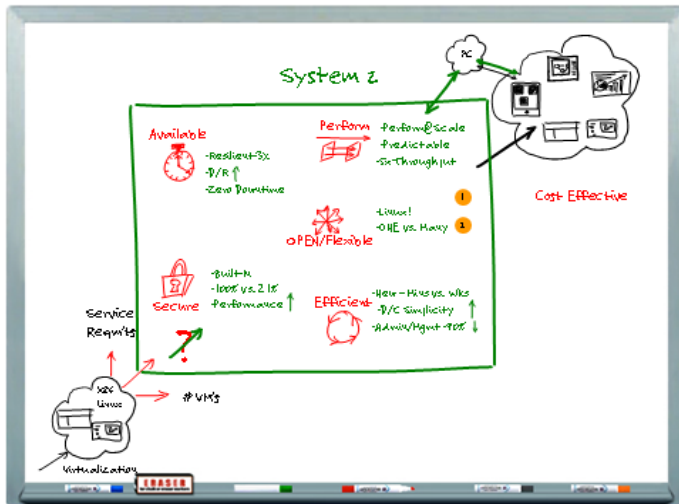
Note to Presenter:

U.S. City - http://www-01.ibm.com/software/success/cssdb.nsf/CS/DLAS-8XWQEU?OpenDocument&Site=eserverzseries&cty=en_us (Published **Sep 2012**)

SRP - http://www.ibm.com/software/success/cssdb.nsf/CS/JRDS-7S8NEV?OpenDocument&Site=eserverzseries&cty=en_us (Published May 2009, Validated Aug 2011)

[Step 1][Linux] For many organizations System z has not been on their radar because they felt they could not run their key applications in the System z environment. The reality is that **Linux** on System z (Enterprise Linux Server (ELS)) **IS the same Linux** that you have running in other server environments. ELS supports industry standard Linux distributions (SUSE, RedHat), Applications, and programing languages, and interfaces.

Over 3000 ISVs support their applications on Linux on System z (e.g. Oracle, SAP, LAMP stack, etc.) With Linux on System z you can reduce the number of servers and therefore reduce software licenses and the complexity of managing those licenses across multiple distributed servers.

For example, a **U.S. city** was able to reduce database license costs by over 30%. **SRP** noted "A key success for us is the ability to consolidate multiple workloads into one instance of Red Hat Enterprise Linux as opposed to running in our traditional environment, where each workload would have to run on a separate server; that's a huge benefit for us".

[Step 2][ONE vs. MANY - Arrows – Clouds] If you've started down the path to Cloud, you may already have virtualized environments in place – this creates silos of management which can hinder time to deployment for applications and also increase the complexity and cost of management.

IBM stands alone in offering **cloud solutions that span architectures with a proven management solution** for visibility, control, and automation. For example, enabling you to reduce the number of integration points for supported hypervisors (e.g. PowerVM, z/VM, HyperV, VMware, OpenStack, etc.) from **MANY to ONE.**

Step ELEVEN – Cost Effective	
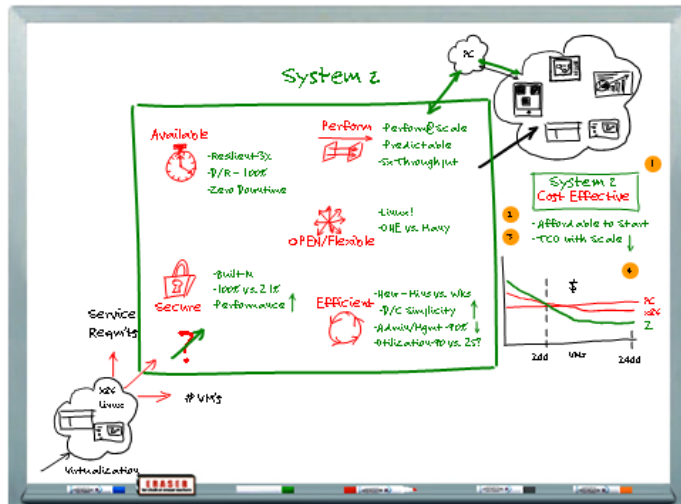
NOTE to Presenter - YOU SHOULD CHECK LOCAL PRICING - BE IN A POSITION TO MENTION THE LOWEST PRICE FOR SYSTEM Z IN YOUR REGION - IT WILL STILL BE A SURPRISE TO MOST IF NOT ALL AUDIENCES.

CRN Award -
http://www.smartercomputingblog.com/system-z/zenterprise-cloud-award/

[Step 1][System z – Box] Some people understand that System z can provide a more robust environment BUT cost is an issue - better stated - IS THE ISSUE. I'd like to set the record straight.

[Step 2][Affordable to Start] You can put in place a System z environment for as little as $75K (USD) What you will find with System z is, VERY Cost Comparable for the Value with other server environments whether this is x86 or various "flavors" of RISC platforms.

[Step 3][TCO with Scale – Down Arrow] It's also about Total Cost of Ownership difference between System z and both Public Cloud Service Providers and x86 implementations.

[Step 4][Graph] Recently, CRN selected the IBM zEnterprise BC12 for its cloud innovation award. One of the key factors in addition to its ability to provide a robust, high performance cloud environment was its ability to provide lower cost as you scale. If you look at the cost per virtual machine as the environment scales, which is inevitable with increased Cloud use, System z is less expensive than either approach as you go past 200 virtual machines – not a very large implementation.

In fact, as you grow to more than 2400 virtual machines, System z can be as much as 50% less expensive per virtual machine in an x86 environment and close to 70% less expensive than Public Cloud offerings.

Step TWELVE – Recap & Next Steps	
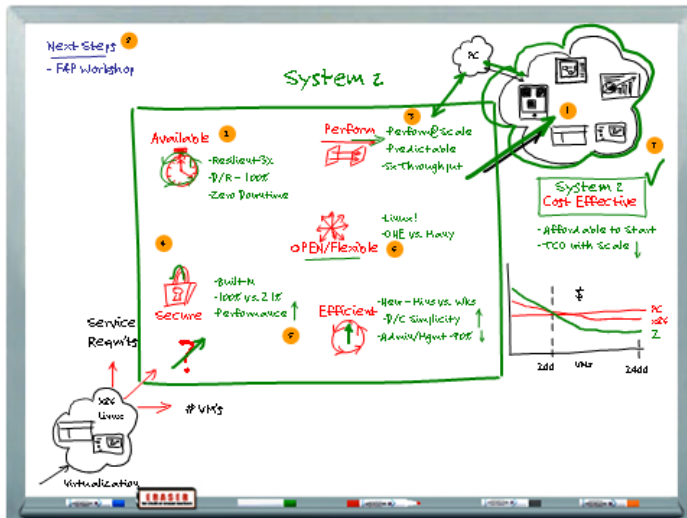
NOTE to Presenter: You should identify an appropriate next step based on the conversation. A Fit for Purpose Workshop may be appropriate, but you want to have the attendees sponsor a meeting with a key decision maker or perhaps someone from another department. The key is to ensure that you identify and get agreement for the Next Steps.

[Step 1] [Green Arrow – Green Cloud] I hope I've given you a better appreciation about how System z can enable you to better support your Cloud requirements today and in the future whether this means supporting services focused on Big Data, mobility, hybrid cloud, social networking or new innovative services to improve competitive advantage; to reach new markets and new customers to drive new revenues; or, to create an exceptional customer experience that helps lock-in customers. System z can ensure that your Cloud infrastructure provides:

[Step 2][Green Arrows around Clock] High availability and reliability

[Step 3][Greed Arrow] Consistent high performance for all your applications

[Step 4][Green over Lock] Which helps you to meet the ever increasing number of security and compliance requirements

[Step 5][Up arrow] Is efficient…

[Step 6][Underline Open and Flexible] Open and flexible

[Step 7][Check mark] And is much more cost effective than alternative approaches

[Step 8][Next Steps] What I would like to suggest is getting your team together to meet with us to look at the applications and services that you are currently providing through the cloud or are considering providing and help you determine what is the right environment for that workload – we call that a **Fit for Purpose Workshop**. We've conducted thousands of these around the world and they have helped organizations just like yours to see how IBM solutions can help them to take advantage of the Cloud.

When can we get together?