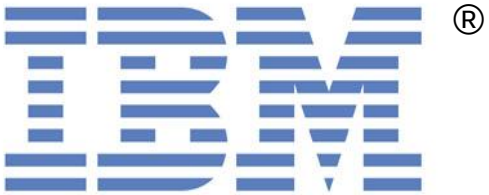
LinuxONE Whiteboard



Version 2015-10-29

Jointly Developed With:

LinuxONE Whiteboard – Introduction and Overview

The purpose of this whiteboard ("WB") is to provide you with a framework to have a more compelling "Why LinuxONE" discussion; to help you identify opportunities where LinuxONE is a good fit; and assist you to align the right next steps to the needs of the audience. This WB can assist you to better understand the challenges organizations face in extending their deployment and use of Linux with distributed systems (including x86 servers) to meet the requirements of more business critical workloads and better understand the benefits of LinuxONE versus that approach. Depending on your background – general versus technical, this WB can be used as a framework for either a very general, high-level, introductory discussion regarding LinuxONE or to support a more specific technical discussion.

When to use this WB:

With new name accounts who are or are considering Linux for business critical workloads
Existing customers who are considering moving workloads off z Systems to distributed servers
Customers or prospects running Linux workloads on "older" distributed systems.

Preparation:

It is important, as with any client meeting, to do your homework about the client. With this WB, your discussion will be much more meaningful and successful if you research how the customer is using Linux today, what Open Source Software is important to them and the platforms they are using.

Discussion Steps in the WB are:

Setting the Stage for the Discussion
Business Demands Driving New Workloads
Challenges with Current Infrastructures Supporting Linux
Dealing with Distributed Systems Limitations
LinuxONE – Linux – Open Source Software and Enterprise-grade Systems
LinuxONE – Linux Your Way
IBM Software Solutions
LinuxONE Solutions and Services
Customer Examples - Proof Points
Recap & Next Steps

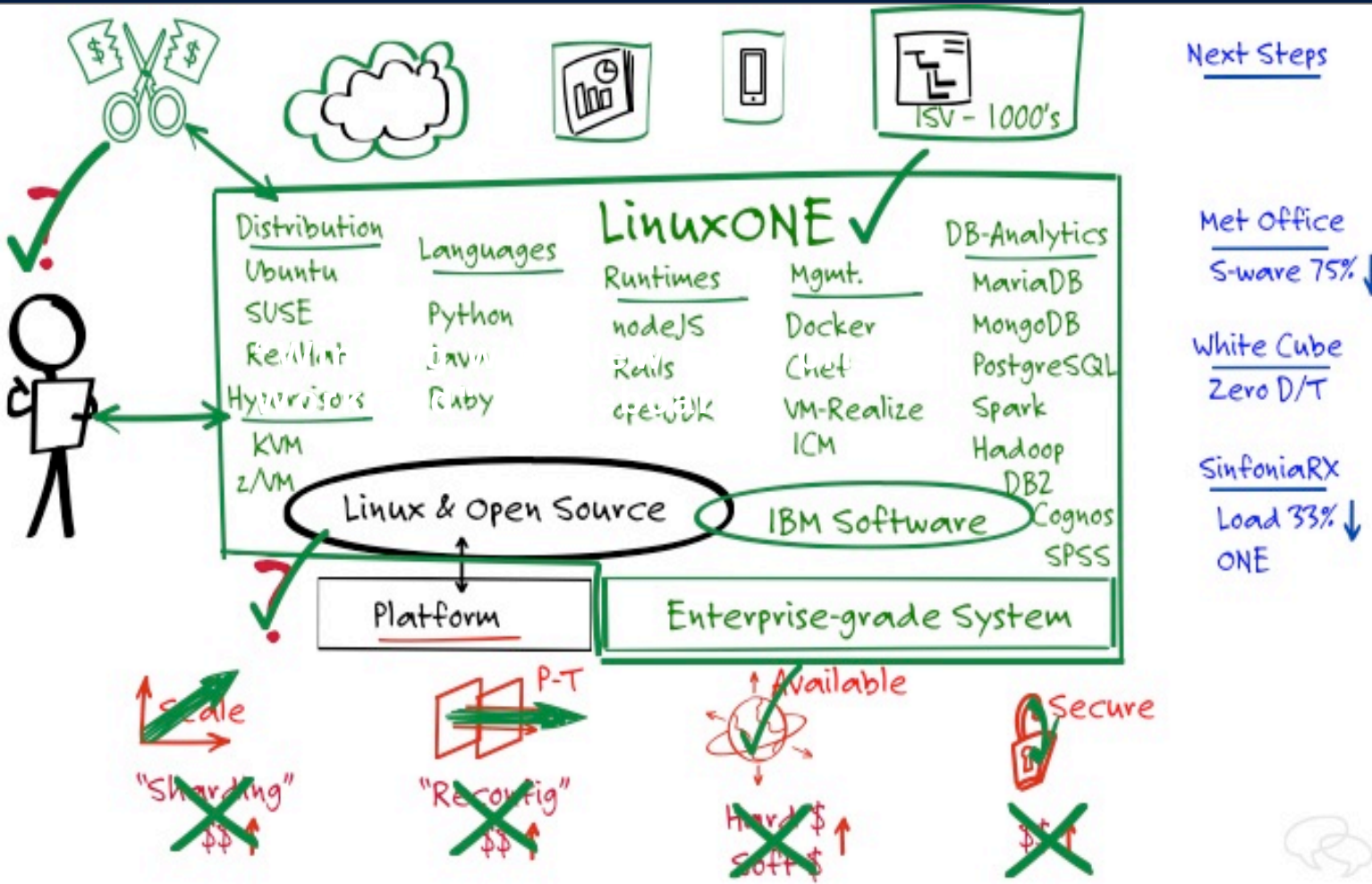
The use of color in this Whiteboard:

Black - Either FACTS or subjects that 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).
Red - Challenges or items that most people may encounter with other infrastructures
Green – LinuxONE capabilities that address issue or challenge

Items you should draw on the board are shown in **< >** and **BOLD** in the color to be used.

NOTE to Presenter: You should always check the Whiteboard Media Library http://w3.tap.ibm.com/medialibrary/media 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.

LinuxONE Whiteboard – Introduction and Overview



1 Step 1 – Setting the Stage for the Discussion

Thanks for taking the time to get together to talk about how you're taking advantage of Linux today; some of the challenges you may encounter as you extend your use of Linux to handle more business critical workloads; and a solution that could help you address those challenges.

<DRAW person> Linux is a reality for most IT shops today. In fact, studies by organizations such as Gartner and Linux Foundation indicate that 90% of IT shops are using Linux and Open Source Software with 70% of organizations indicating they are looking to use Linux for more business critical workloads.

<DRAW oval – WRITE "Linux & Open Source"> Your decision to take advantage of Linux and Open Source Software was a good one. Especially when you think about the improved agility, flexibility and cost effectiveness they provide.

1 Step 1 – Setting the Stage for the Discussion

2 Step 2 – Business Demands Driving New Workloads

<DRAW question mark above person> The question is, as you consider new workloads, how do you continue to leverage the advantages of Linux and Open Source Software while supporting the increasingly more complex workload demands coming from the business? For example.

<DRAW icons for cloud – analytics> The increasing demand to take advantage of and deliver private or hybrid cloud-based services or enhance your support for analytics and Big Data workloads.

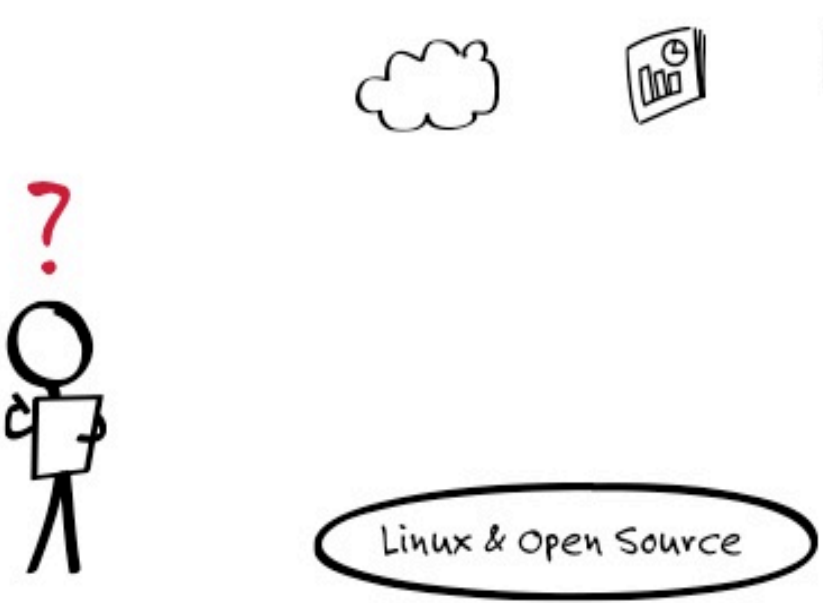
<DRAW icons for mobile devices> Support mobile and mobile-enabled services or mobile-enable existing workloads.

<DRAW icons for applications> And finally, find cost effective ways to develop, deploy or support the hundred of other workloads that both help you run the business and manage the business.

QUESTIONS TO ASK

1. Are these the types of requests coming to you?

Step 2 – Business Demands Driving New Workloads



3

Step 3 – Challenges with Current Platforms

<DRAW question mark> **<DRAW rectangle – WRITE "Platform" – DRAW arrow>** The question then becomes can your current Linux environment whether this is based on a distributed server environment (perhaps based on x86) or a public cloud service meet the demands and challenges associated with these more business critical workloads? For example.

<WRITE "Scale" – DRAW arrows> As the number of users and the amount of data increases, and they both will increase, can the environment scale out and up to meet new requirements?

<WRITE "P/T – DRAW icon"> As the complexity of the services increases along with the number of users, can you deliver the performance and throughput users expect AND require?

<WRITE "Available" – DRAW globe and arrows> Can you ensure that the services will be available on a 24x7, anywhere basis and can recover without disruption from any number of potential failures?

<WRITE "Secure" – DRAW lock> And finally, will the environment enable you to further enhance Linux security to deliver the level of data, application and user security required in today's more threatening and more highly regulated environment?

QUESTIONS TO ASK

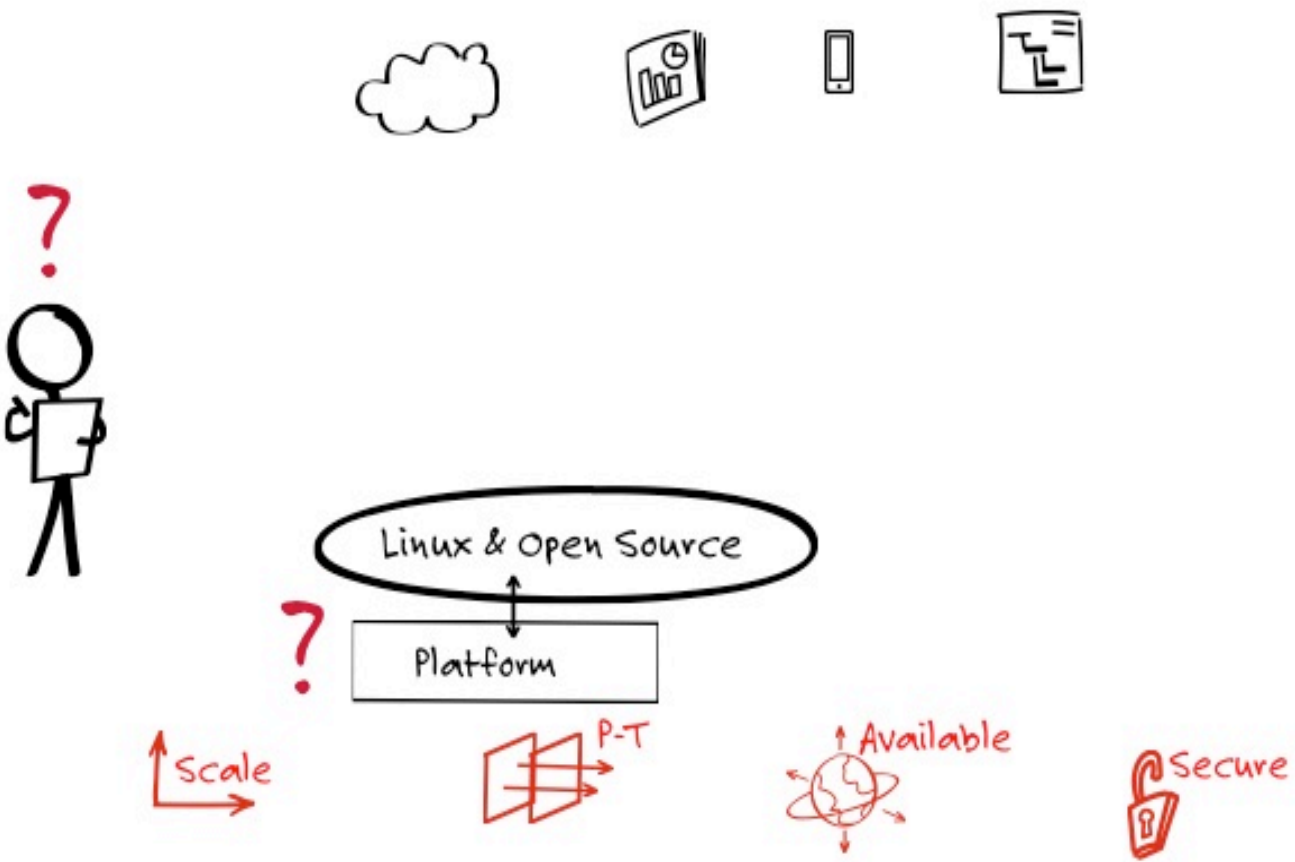
What workloads are you supporting today?

What are your key business critical workloads or applications? Are you seeing that these workloads are being driven to take advantage of Linux?

What does your Linux infrastructure look like?

Has your environment been "good enough" or have their been issues or concerns?

Step 3 - Infrastructure Requirements



4

Step 4 – Dealing with Platform Limitations

<DRAW underline> If your environment is like others we encounter, to meet these requirements you will more than likely have to invest additional time, resources and budget and in the end create an even more complex environment. For example.

<WRITE "Sharding" – "$$" and DRAW up arrow> To deal with database or user growth and the associated scale up and scale out challenges will mean partitioning or "sharding" your databases. This could result in more virtual or physical servers, more software, more complexity and more cost.

<WRITE "Reconfig" – "$$" and DRAW up arrow> To enable the right or appropriate levels of performance and throughput will you need to upgrade or add servers and then reconfigure virtual machines and applications?

<WRITE "Hard $" – "Soft $" and DRAW up arrow> Will you need to add hardware and software and their associated costs to meet availability requirements? And what will it take to support back up and recovery and other contingency requirements?

<DRAW lock and WRITE "$$" and DRAW up arrow> And finally, will you need additional software, hardware or external third-party services to ensure that you minimize security risks?

NOTE TO PRESENTER:

Sharding is another name for "horizontal partitioning" of a database

QUESTIONS TO ASK:

Have you encountered any of these?

What are the specific activities your team has undertaken to try and address these types of challenges?

What incremental costs have you incurred to meet the requirements of more business critical workloads?

Step 4 – Dealing with Platform Limitations

5 Step 5 – LinuxONE – Linux – Open Source Software and Enterprise-grade Systems

If these are some of the issues you are concerned about AND Linux is a key component of your IT strategy, what if you could put in place a Linux environment enabling you to meet these challenges in a more efficient and cost effective manner?

<DRAW lines and WRITE "LinuxONE"> This is precisely what IBM has done with LinuxONE.

<DRAW box - WRITE "Enterprise-grade System"> LinuxONE is a COMPLETE Linux solution, supporting "standard" Linux, Open Source Software and ISV applications and uniquely incorporating an enterprise-grade systems environment to help you to meet the requirements of business critical IT services. For example.

<DRAW arrow DRAW "X"> Your infrastructure can **diagonally** scale to meet new user and data growth levels (without limits). Think about it. In a distributed environment you start with a server, you deploy a few virtual servers and then when it is full you add another server and repeat the process again and again. With LinuxONE you use a similar approach, but only within **one** system. You can have up to eight thousand virtual machines in a single system, or tens of thousands of containers. You get a level of scale that would require many hundreds of physical servers in a distributed environment. Helping you eliminate the overhead, cost and complexity of "sharding" or the cost of additional hardware and software.

<DRAW arrow DRAW "X"> You have the ability to deliver high continuous performance and throughput for 100's even 1000's of applications from a single server. You can support tens of thousands of concurrent users while delivering consistent sub-second end user response time by taking advantage of the industry's fastest processor, the biggest I/O pipe, 10TB memory, 4 levels of cache and much more.

<DRAW check mark DRAW "X"> You can eliminate the availability concerns of your most demanding user. You can spin up containers and virtual servers in seconds or minutes with automated resource provisioning and reallocation, you can temporarily or permanently add physical resources in seconds. You can deliver highly reliable services through nearly 100 percent utilization nearly 100 percent of the time. Simply put, LinuxONE provides an infrastructure that responds to your ever-changing needs while maximizing return on investment.

<DRAW line to close lock DRAW "X"> Finally, you can ensure the highest levels of security and protection at every level, including, applications, containers, virtual servers and partitions. All with full encryption of data, at rest, inflight and in use. With LinuxONE, you can deliver unmatched secure transaction throughput to meet the requirements of the most demanding applications

NOTE TO PRESENTER:

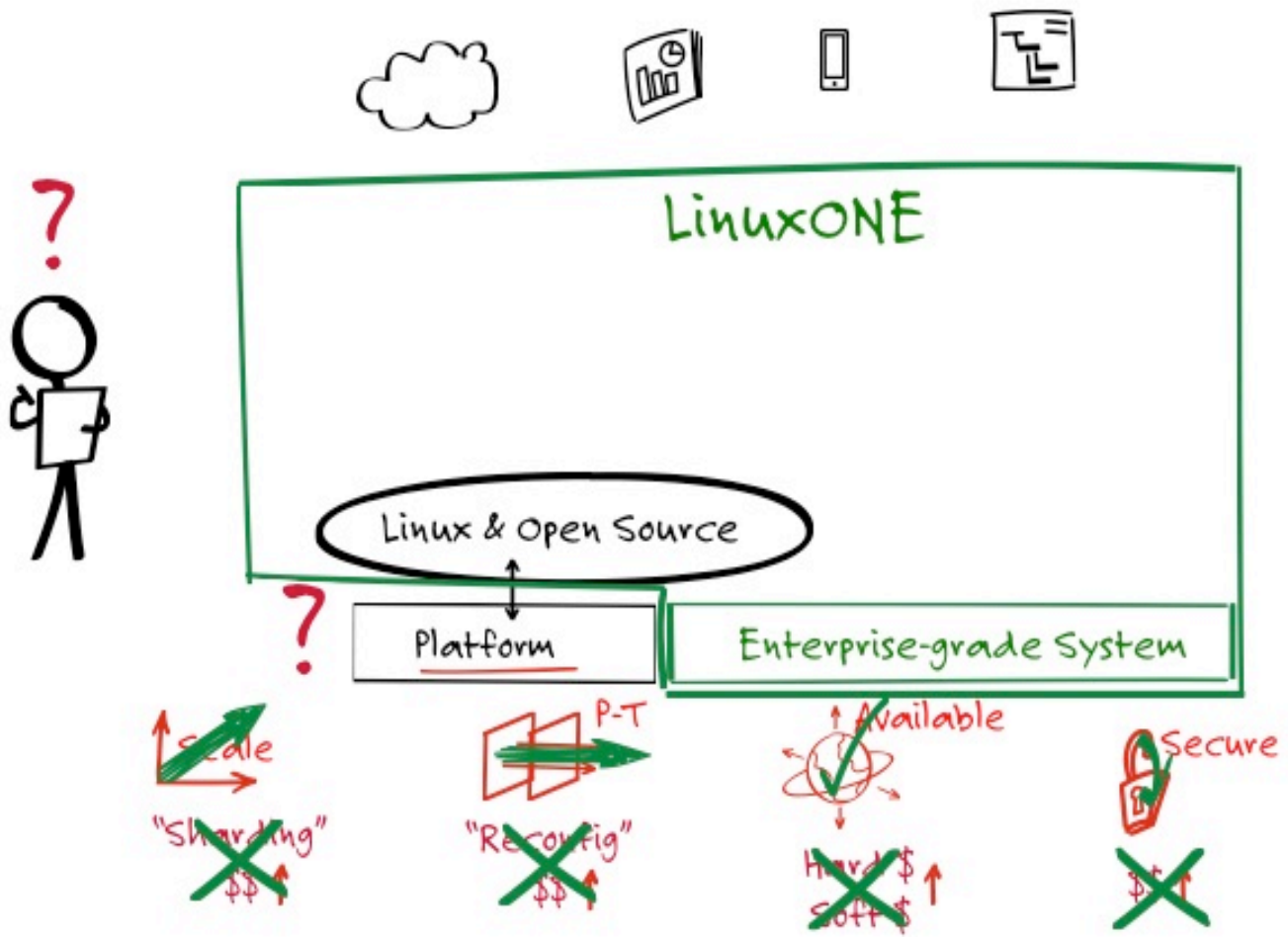
A few examples from our performance labs regarding LinuxONE performance:

30B RESTful web interactions per day, with 470K database reads and writes per second;

2x better performance for open SQL (PostgreSQL, MariaBD) and NoSQL (MongoDB) database; capable of supporting the LARGEST single instance of MongoDB with a footprint of +1TB, processing +2B documents, while maintaining fetch times under 5ms.

Diagonal scaling refers the ability to massively scale out and scale up at the same time.

Step 5 – LinuxONE – Linux – Open Source Software and Enterprise-grade Systems



6

Step 6 – LinuxONE – Linux Your Way

Most importantly, with LinuxONE you can incorporate the Linux and Open Source Software you're using in your environment today.

<WRITE "Distributions – Ubuntu – SUSE - RedHat"> You have your choice of Linux distributions. LinuxONE is in the standard distribution of Linux from Ubuntu, SUSE and RedHat.

<WRITE "Hypervisors – KVM"> It supports a number of hypervisors, including, KVM.

<WRITE "Languages – Python – Java - Ruby"> Your teams can leverage the languages they use today, including, Python, Java, Ruby, Puppet, and many others.

<WRITE "Runtimes – nodeJS – Rails - openJDK"> Allowing you to take advantage of runtimes such as, nodeJS, Rails, openJDK.

<WRITE "Manage – Docker – Chef - VM-Realize"> You can continue to manage the Linux environment with Docker, Chef, VMware Realize and OpenStack.

<WRITE "Databases & Analytics – MariaDB – mongoDB – PostgreSQL-,Spark - Hadoop"> And with LinuxONE you have the most scalable, high performance infrastructure to support databases and analytics software, including MariaDB, mongoDB, PostgreSQL, Oracle and MySQL, Spark, and Hadoop.

LinuxONE ensures you can continue to use Linux, Open Source Software and ISV applications "your way".

IMPORTANT NOTE TO PRESENTER:

You DO NOT need to list out all of the open source software above. This is merely a representative list. You should do your homework and list or mention software that is important to or has been mentioned by the audience. You should list out the software that important to **THAT** audience.

Details are provided in the Seller Education presentation *"The Best Platform for Open-Source / Open-Source Ecosystem Enablement"*

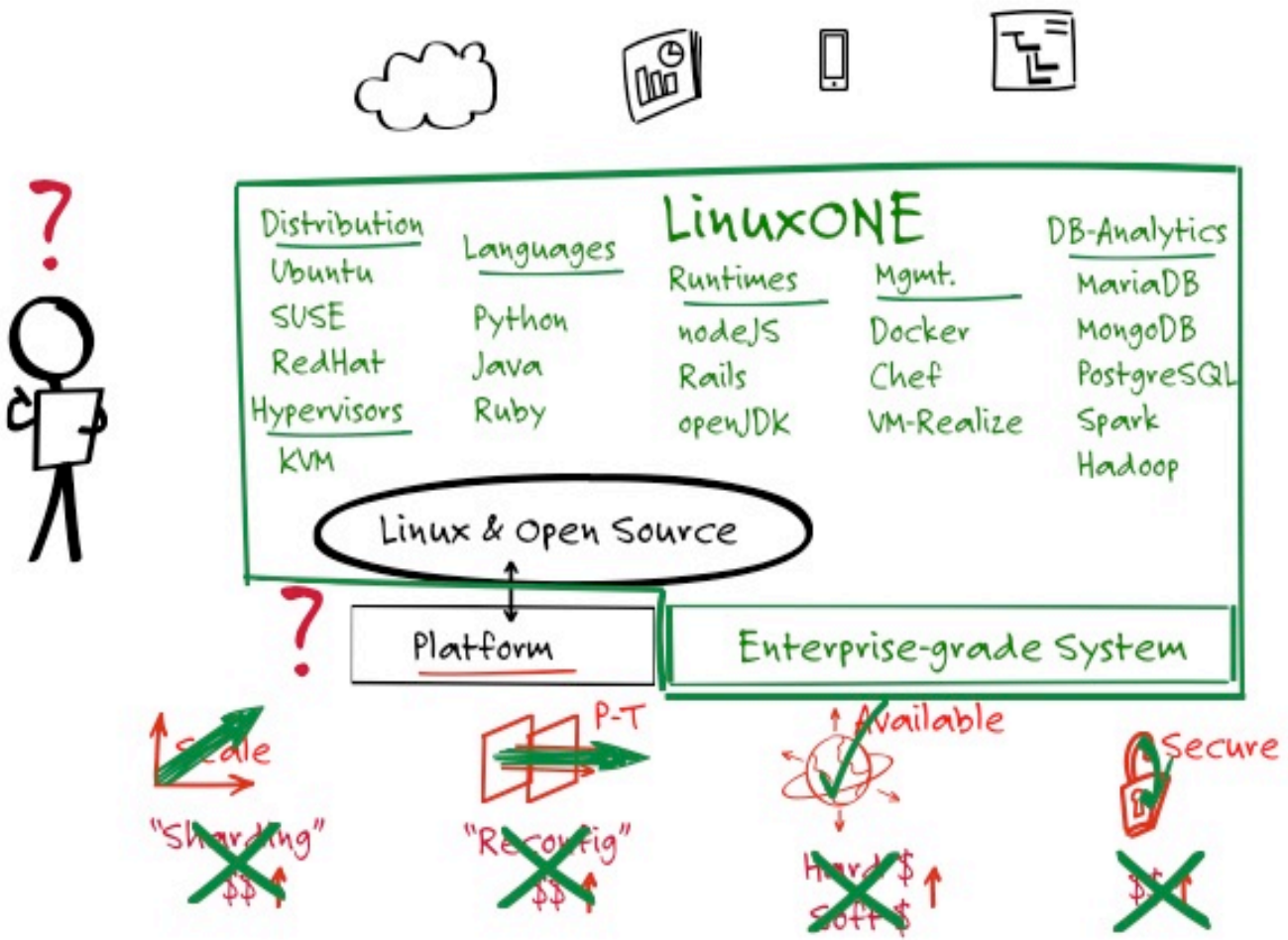
Replays:
http://w3.ibm.com/sales/support/ShowDoc.wss?docid=SGDI155702O68747C34&node=brands,B5000|brands,B5T00|clientset,IA

Additional information can be found at:
http://www.ibm.com/systems/z/os/linux/open-source-software.html

QUESTION TO ASK:

Can you help me understand what Open Source Software is important to your organization, now? Going forward?

Step 6 – LinuxONE – Linux Your Way



7

Step 7 – IBM Software Solutions

In addition to supporting this wide range of Open Source Software, IBM also provides a number of software solutions that can add significant value to LinuxONE enabled solutions and can increase the value of Open Source Software. **<DRAW oval and WRITE "IBM Software>** For example.

<WRITE "IBM z/VM"> Hypervisors, including IBM z/VM.

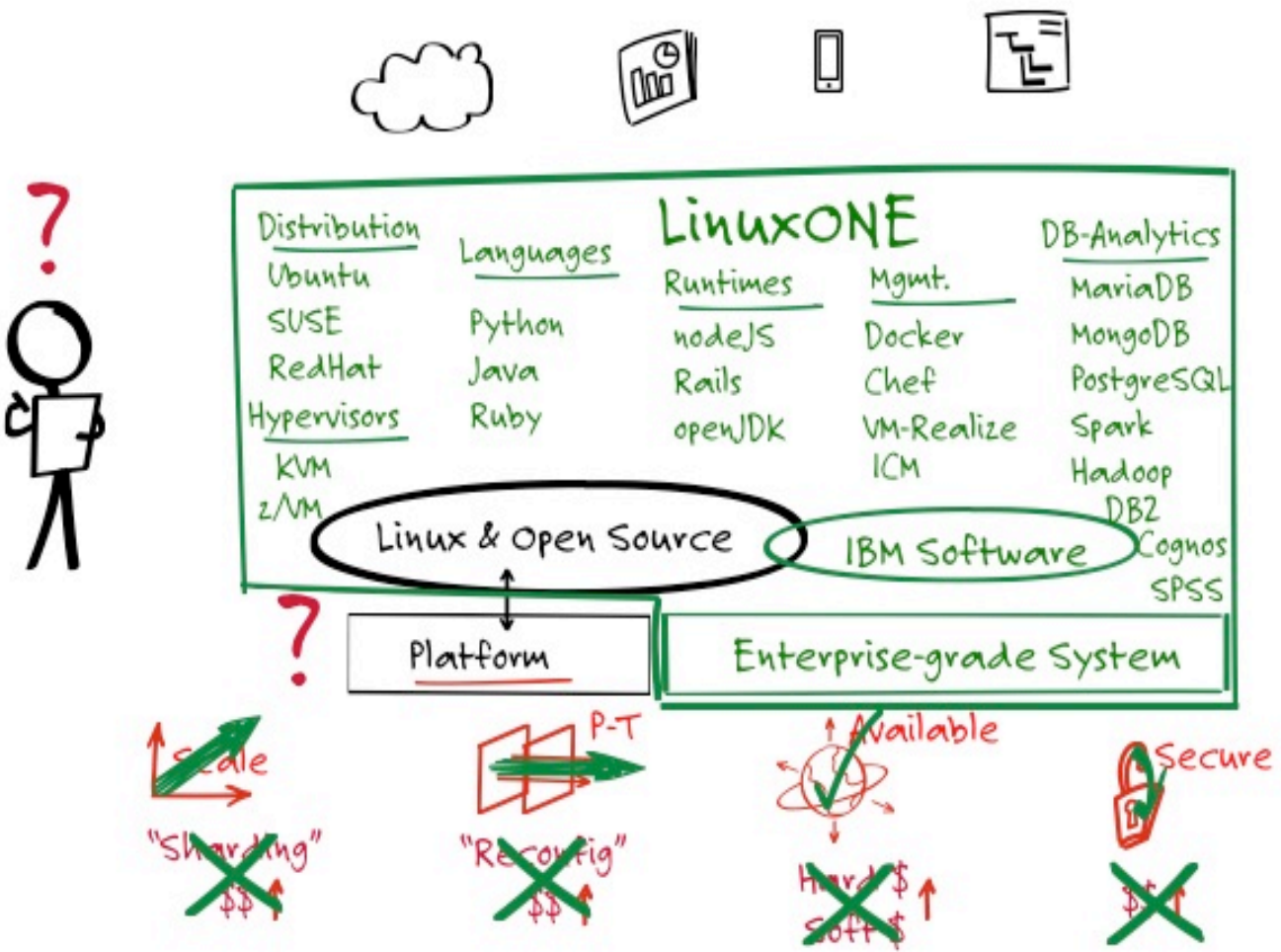
<WRITE "ICM"> Enabling Technologies and Management Software, including**:** IBM Cloud Manager with OpenStack, Infrastructure Suite for z/VM and Linux, VMSecure, and zVPS,

<WRITE "DB2 – Cognos -SPSS"> And, Database and Analytics software, including**:** DB2, Cognos, SPSS, DB2 BLU, BigInsights, IT Operational Analytics, and IBM zAware,

IMPORTANT NOTE TO PRESENTER:

You should do your homework and list or mention software that may be appropriate important for this particular the audience.

Step 7 – IBM Software Solutions



Step 8 – LinuxONE Solutions

To help you put in place private or hybrid cloud infrastructure, deliver analytics services or develop and deliver mobile-enabled workloads. IBM is providing a number of LinuxONE solutions. Each of these is built on a DEVOPS reference architecture incorporating, open source or IBM software and IBM lab quick start services to get you up and running more quickly. For example

<DRAW cloud> The cloud solution incorporates OpenStack-based solutions from IBM or the industry, simplifying management of a virtualized cloud environment. With a library of over a dozen patterns, you can automatically provision and de-provision workloads and applications for a private cloud environment. You can also support hybrid cloud strategies, leveraging a consistent set of tools and technologies to achieve greater efficiency and lower costs for IT service delivery.

<DRAW rectangle around analytics icon> LinuxONE business analytics and database solutions can reduce implementation cost and complexity and provide unmatched business resiliency, security, and flexibility. You can put in place a solution incorporating software packages – from IBM, the industry, or the open community – enabling faster analytics capabilities for large volumes of structured or unstructured data.

<DRAW rectangle around mobile icon> LinuxONE mobile solutions provide end-to-end capabilities for rapidly developing, deploying, and securing enterprise MOBILE applications. You can deliver on an open and highly responsive infrastructure that scales to meet the peak demand, offers unmatched security at the device, data, application, and transaction level, while delivering the best possible experience for your users.

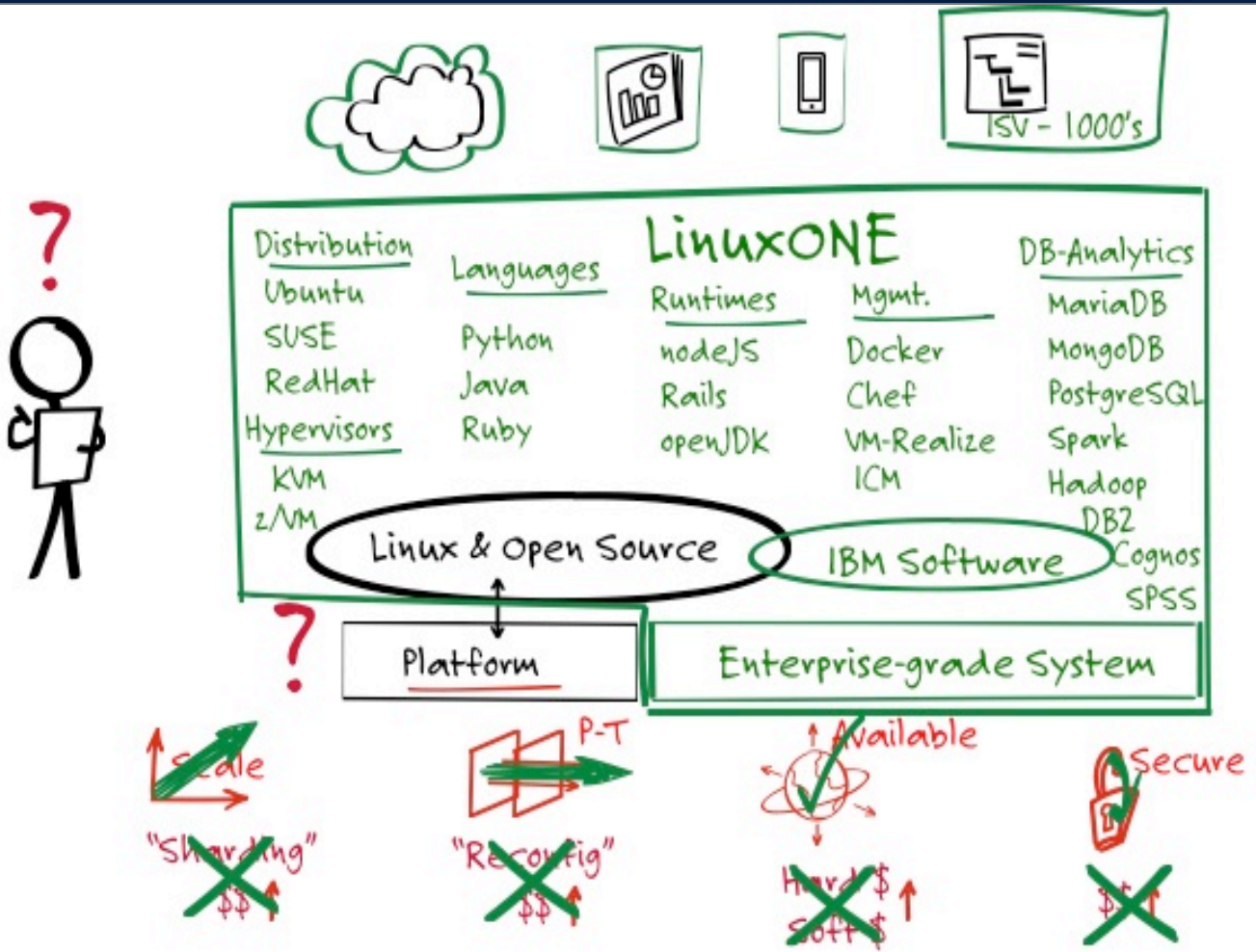
<DRAW rectangle and WRITE "ISV - 1000's> Additionally, LinuxONE supports and has been validated for 1000's of Linux-based ISV applications.

So, if you're running or looking to run very large I/O or cache-intensive workloads like database or transaction processing; you're looking to consolidate large numbers of low utilization commodity x86 servers, your software costs are continuing to creep up and up; workload availability is critical and any system failure cannot be tolerated; a security breach would be catastrophic; AND Linux is strategic to you, then you should be considering LinuxONE.

IMPORTANT NOTE TO PRESENTER:

You should do your homework and list or mention software that may be appropriate important for this particular the audience.

Step 8 – LinuxONE Solutions



Step 9 – Customer Examples – Proof Points

Let me give you a couple of examples of organizations that made the decision to go with LinuxONE.

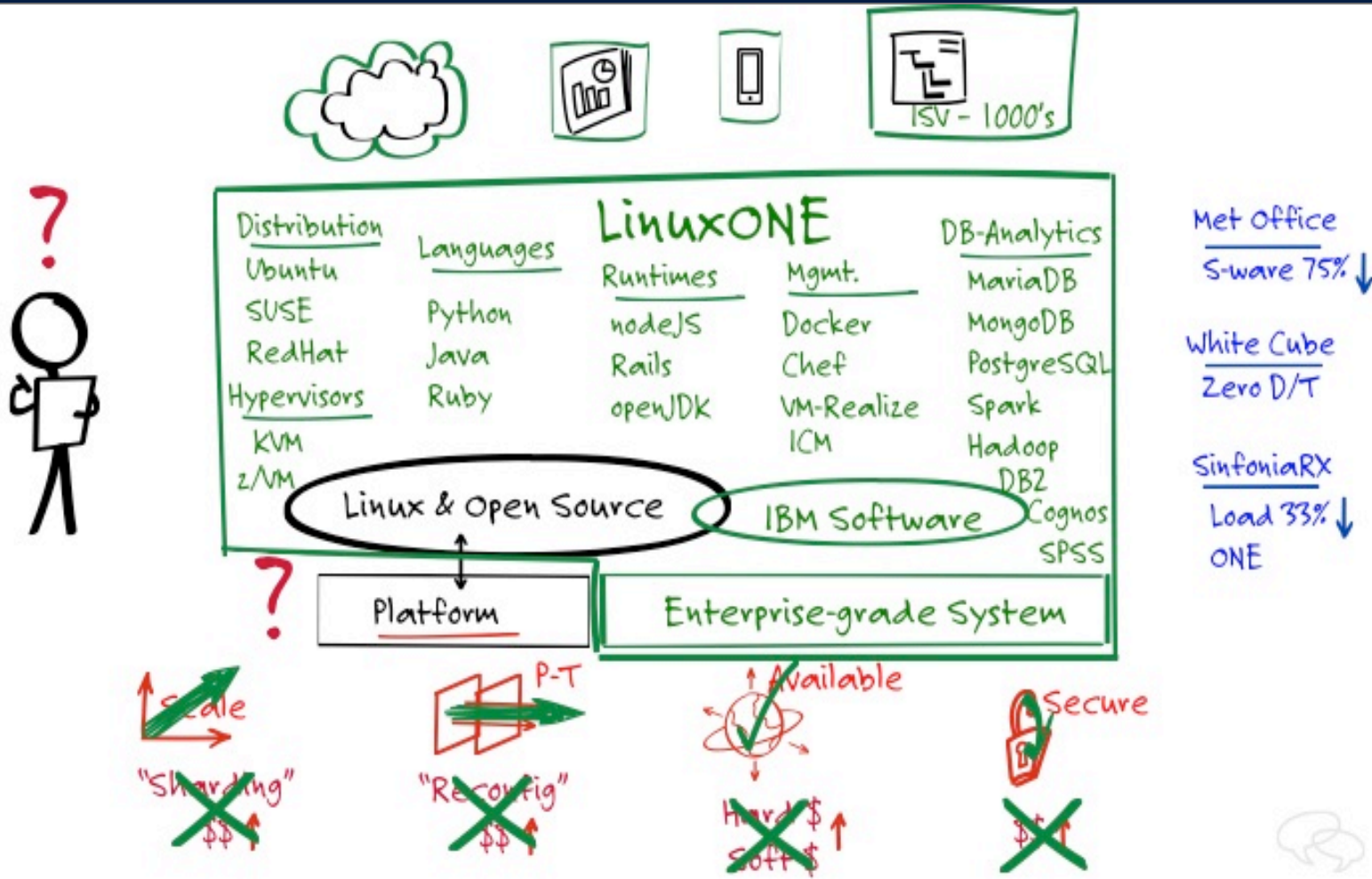
<WRITE "Met Office – S-ware 75%" DRAW down arrow> The Met Office, a government agency in the UK was running an Oracle-based system, running on distributed Linux servers to handle post-processing of data from its weather supercomputer. They have reduced their Oracle costs by 75% by consolidating systems incorporating 204 x86 cores to 17 LinuxONE cores.

<WRITE "WhiteCube – ZERO D/T> WhiteCube in the UK, a contemporary art gallery, needed a system that could help them deal with geographic expansion but most importantly ensure that their auction system could support rapid scalability and continuous availability. Ensuring that bidders would be able to participate in real-time auctions without disruption. Their previous system could not meet those demands, so they moved to a LinuxONE solution. Since then they have had ZERO downtime and are still using the same Linux management and admin tools they used before but on ONE system NOT 12.

<WRITE "Load - 33%" Draw down arrow and WRITE "ONE"> Finally, SinfoniaRX in the US needed to meet dramatic user growth and at the same time deliver real-time response time from analytic data base applications. Their previous Linux environment became THE bottleneck. With LinuxONE the have cut their data load times by 1/3 improving I/O performance for better data analysis and deliver the response time required by their users. Additionally, by simplifying their environment to LinuxONE they are managing the system with one Linux programmer on a part-time basis.

NOTE TO PRESENTER: The emphasis of the references you use should be on supporting new and more complex Linux workloads. You should use references that will resonate with the audience, in terms of size and type of organization, region, existing infrastructure, etc. **You should check the media library for current references.**

Step 9 – Customer Examples – Proof Points



10

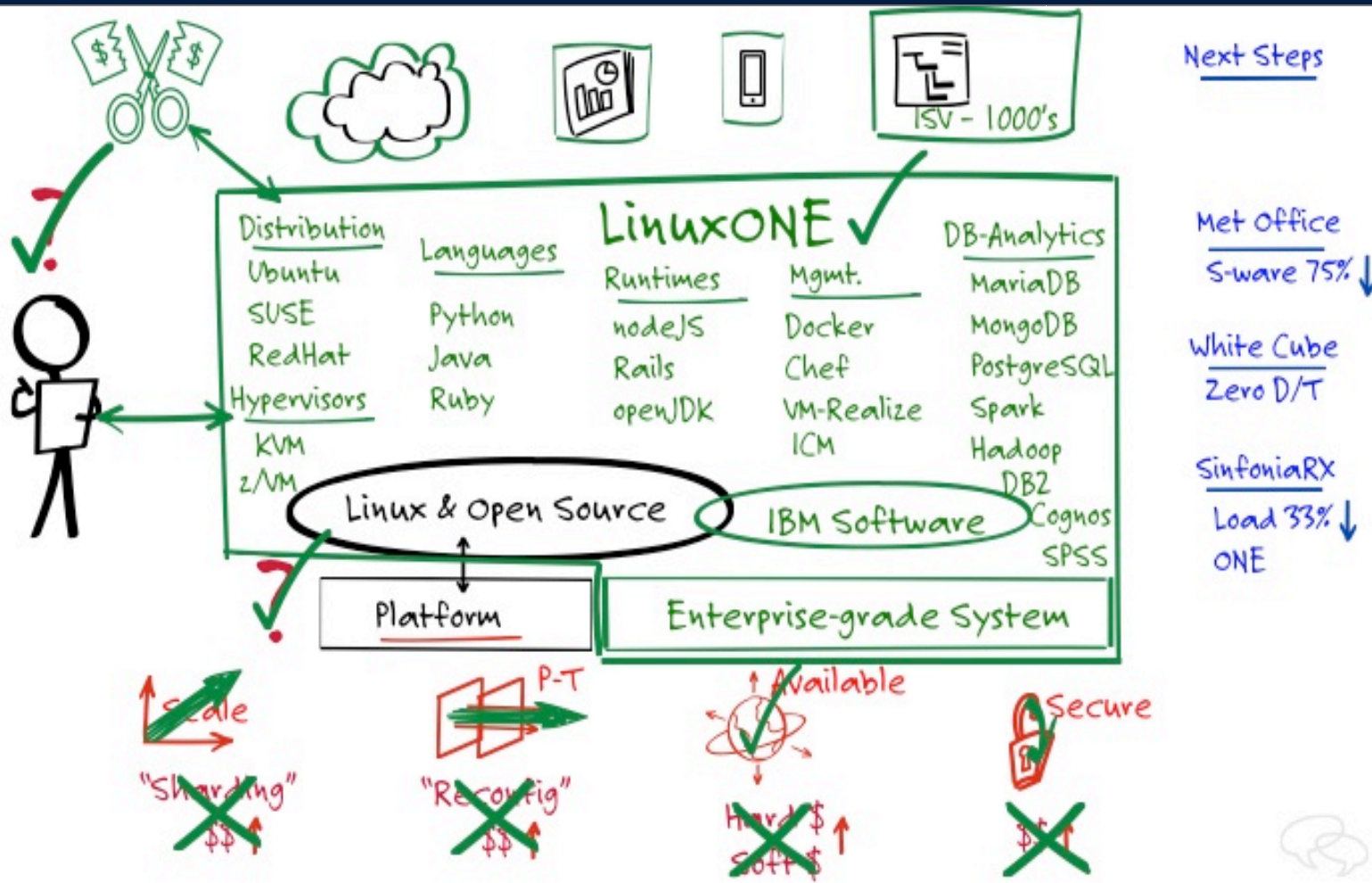
Step 10 – Recap and Next Steps

<DRAW check marks> I hope I've given you an appreciation of how you can put in place a Linux environment that can eliminate the questions of dealing with the challenges associated with the growth, performance, availability and security requirements that come with the wide range of workloads being demanded by today's business. **<DRAW arrow>** Enabling you to take advantage of the Linux and Open Source Software you run today with a more available, scalable and resilient environment.

<DRAW Check mark – pricing icon - arrow> A solution you can put in place NOW without Capex budget by taking advantage of the new elastic pricing programs we have put in place. For example, a Pay-for-Use model that requires **NO** up front payment; with a Monthly Per-Core Rental Model for the Linux Software Stack together with Low risk by giving you the right to return equipment after only 1 year. Our intent is to make it easier and more effective for you to put in place a Linux environment to meet all your new workloads requirements.

<WRITE "Next Steps" DRAW Underline> Based on what we've discussed so far, I'd like to suggest the following next steps.

Step 10 – Recap and Next Steps



NOTES on Next Steps

NOTE TO PRESENTER ON NEXT STEPS:

YOU SHOULD HAVE A SPECIFIC NEXT STEP FOR THE AUDIENCE. Below are several potential next steps. Make sure to get agreement from the audience and write it on the whiteboard.

<WRITE "Workload -> Collaborative Cloud"> We could meet with you and your team to identify a workload that you could run in a LinuxONE "sandbox" on our LinuxONE Collaborative Cloud. This would give your team an appreciation of what the environment is – specifically that it is a STANDARD Linux environment – as well as the performance and throughput advantages.

<WRITE "Software Review"> We could also get with your Team to further discuss the specific Linux and Open Source Software running in your environment, some of the IBM Linux solutions that could further assist you as well as the LinuxONE Solutions for Cloud, Analytics, Mobile and DevOps.

<WRITE "Fit for Purpose Workshop"> We could also set up for our Teams to work with you and your Team to identify specific applications and services that are encountering difficulties today and conduct a Fit for Purpose workshop to identify specifically the LinuxONE solution that is best for you.

<WRITE "TCO Study"> Finally, if you have questions about the economics associated with moving from your x86 environment to LinuxONE, we could arrange for our Eagle Team conduct a Total Cost of Operations study, what we call an Eagle Study.

NOTES on Pricing

NOTE TO PRESENTER ON PRICING:

YOU SHOULD CHECK THE MEDIA LIBRARY FOR UP-TO-DATE INFORMATION ON PRICING.

THIS REPRESENTS A MAJOR CHANGE in Linux pricing

Available with proven virtualization with Open Standards
New LinuxONE systems
First instance of an IFL(s) on an existing Mainframe
z13 / zEC12 / zBC12, HW Maintenance, (z/VM, IBM Wave)
Based on your configuration
Pay-for-Use HW – No up front payment required
Fixed Lease Payment: Discounted initial price which can be as low as 35% of a typically discounted price, financed on an operating lease with fixed monthly or quarterly payments
Variable Usage Payment: Additional payments made each quarter which varies based on actual usage –costs scale up or down as usage changes
Title remains with IBM
Choice at contract end –return, buy, replace
Low risk –right to return equipment after only 1 year
36 month fixed lease and 36 month usage contract provide cancellation options with a pre-stated fee depending on system
Monthly Per-Core Rental Model for Linux Software Stack
Full software Linux Portfolio Available
Order what you need, when you need it
    Type(s) of software needed on desired number of cores
    Term - One month or a longer term, or setup as monthly recurring charge until cancelled
- Order additional licenses as needed; decrease licenses with 30 days notice
- Monthly rental cancelation terms apply to all cancellations (including license reductions)

ADDITIONAL CONSIDERATIONS:

HW terms assume IBM Global Financing provides HW leasing contract and is subject to credit approval and other conditions Clients must run ILMT to produce reports for SW compliance