z/OS Version 1 Release 12

A Smarter Operating System For a Smarter Planet

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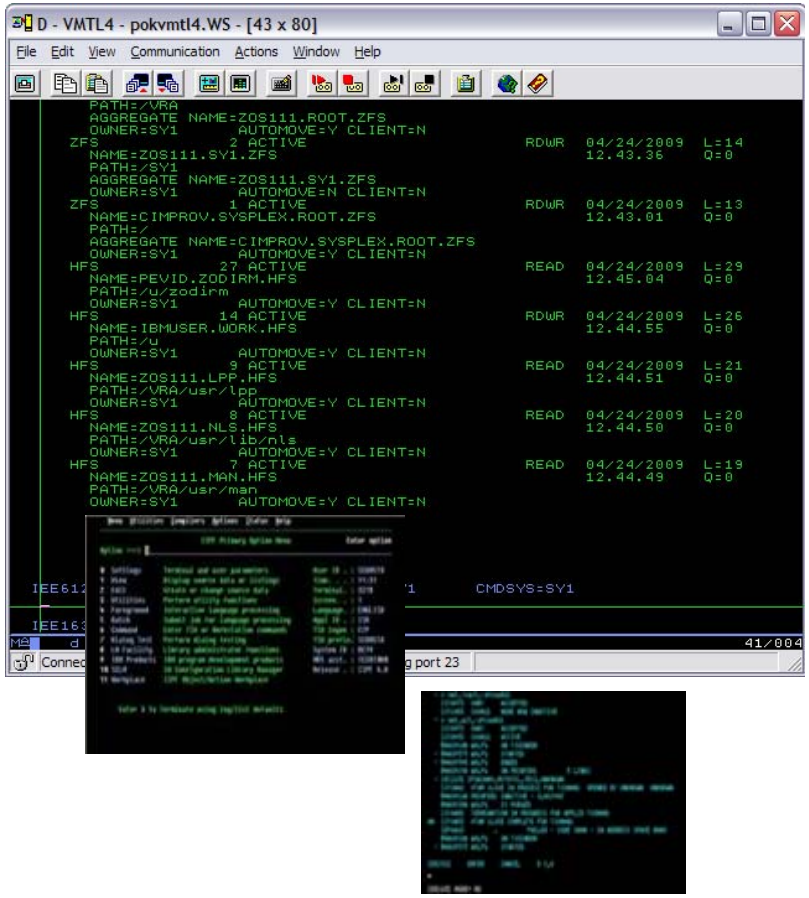
z/OS

- ✓ **Advantages to your operations through performance improvements, less workload disruptions, and improved diagnostics.**
- ✓ **Advantages to your business by taking advantage of a new era for integrated computing, providing faster, highly secure connectivity, supporting end-to-end workload management, and leveraging a whole new class of workload 'optimizers'**
- ✓ **Advantages to your organization with improved productivity. Automatic, real time capabilities mean less operator intervention and built-in expert guidance reduces time to perform tasks. New capability for FICON® disk and tape.**

Available September 24, 2010

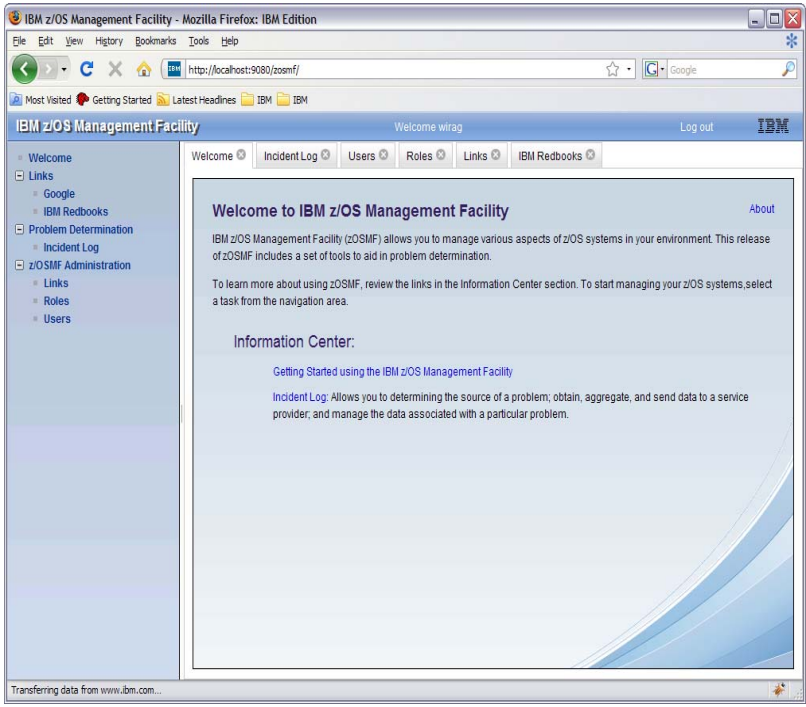
IBM z/OS Management Facility

- **Needs:**
  - There was no central system management portal for z/OS
  - There are many interfaces foreign to users new to platform
  - There are manual tasks requiring extensive documentation
  - Requires years of z/OS experience to be productive



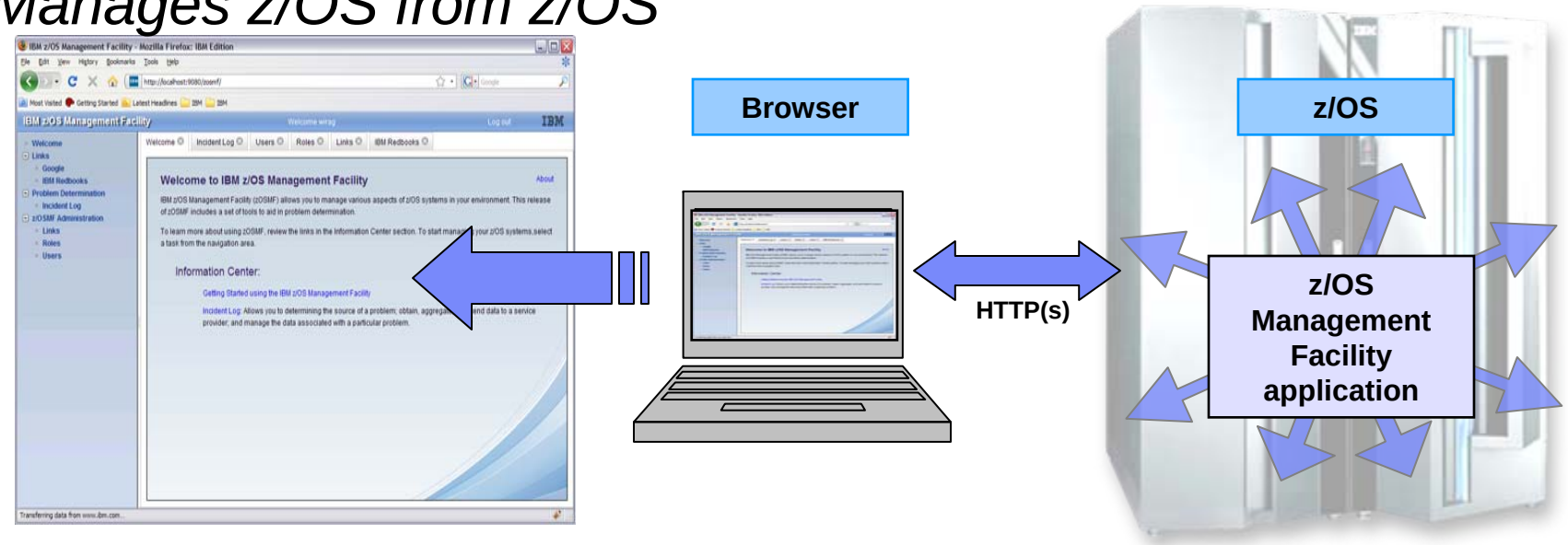
IBM z/OS Management Facility

- **The IBM z/OS Management Facility helps system programmers to more easily manage and administer a mainframe system.**
- **More than a 'screen scraper' or an 'installation shield', the z/OS Management Facility is more:**
  - Automated tasks can help reduce the learning curve and improve productivity.
  - Embedded active user assistance (such as wizards) guides you through tasks and helps provide simplified operations.



IBM z/OS Management Facility

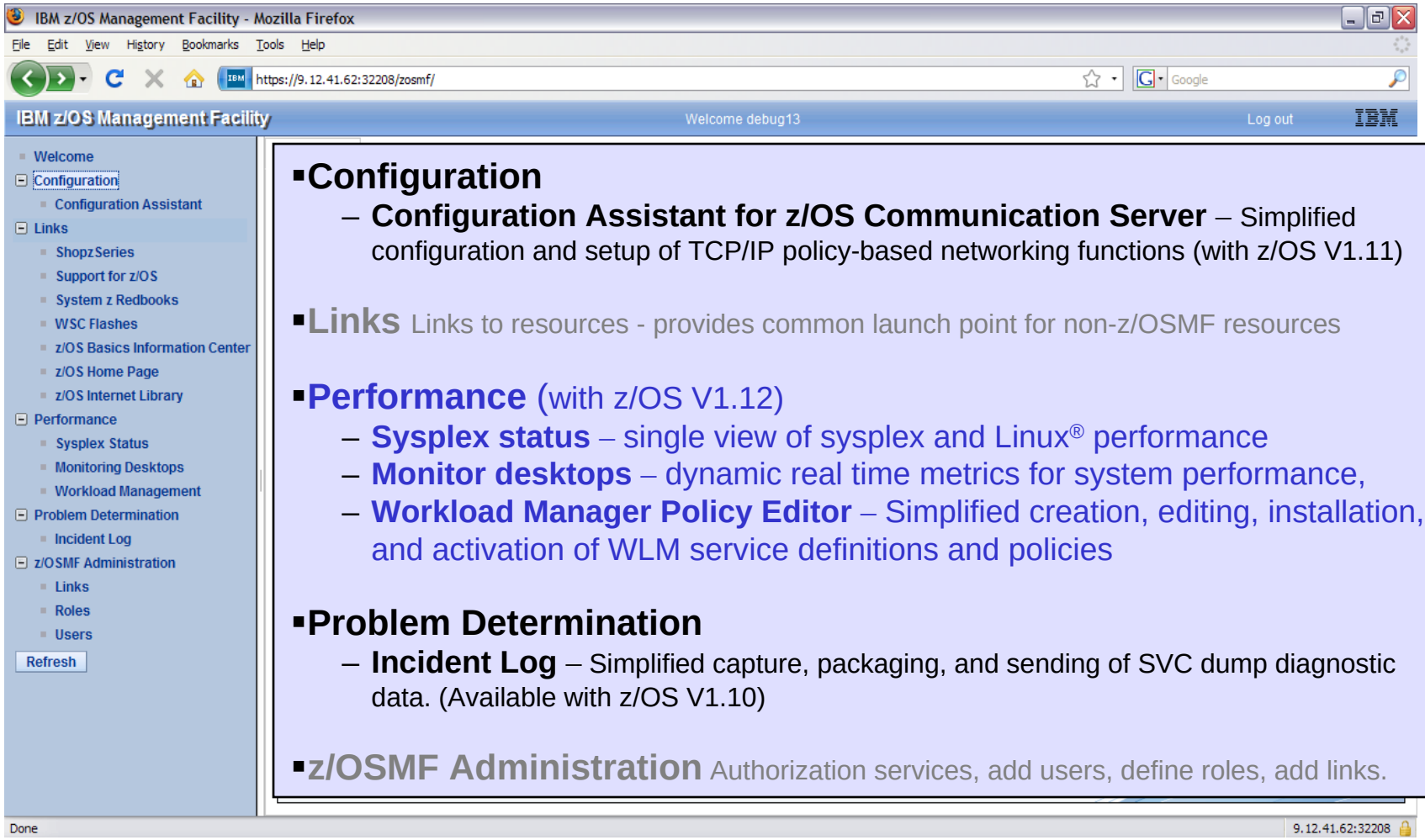
Manages z/OS from z/OS



- **z/OS Management Facility is an application on z/OS**
  - Browser communicates with z/OSMF via secure connection, anywhere, anytime
  - Uses industry standards, such as Java™, DOJO, and CIM
  - Parts of z/OS Management Facility, such as the Incident log capability (V1.11) and WLM Policy Editor (V1.12), use Java and CIM (eligible for zAAP and zIIP)

IBM z/OS Management Facility

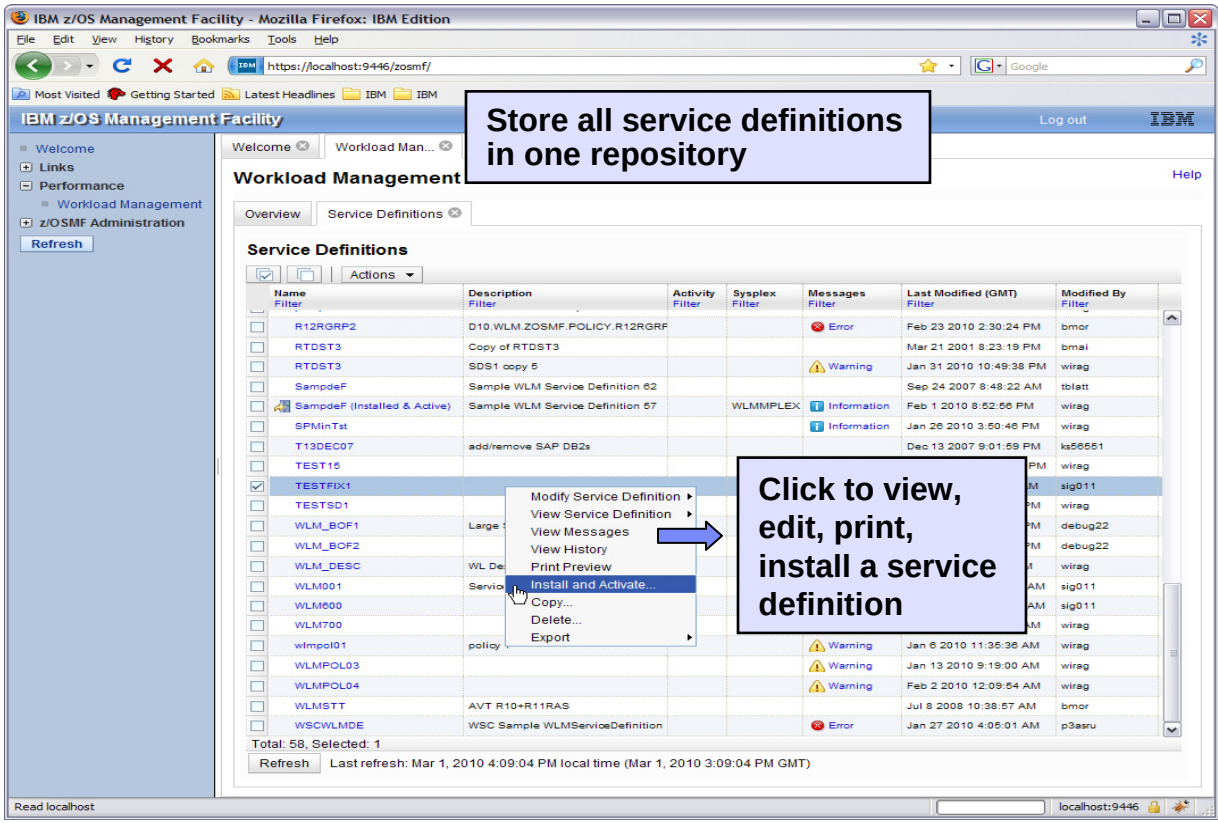
Welcome page



- **Configuration**
  - **Configuration Assistant for z/OS Communication Server** – Simplified configuration and setup of TCP/IP policy-based networking functions (with z/OS V1.11)
- **Links** Links to resources - provides common launch point for non-z/OSMF resources
- **Performance** (with z/OS V1.12)
  - **Sysplex status** – single view of sysplex and Linux® performance
  - **Monitor desktops** – dynamic real time metrics for system performance,
  - **Workload Manager Policy Editor** – Simplified creation, editing, installation, and activation of WLM service definitions and policies
- **Problem Determination**
  - **Incident Log** – Simplified capture, packaging, and sending of SVC dump diagnostic data. (Available with z/OS V1.10)
- **z/OSMF Administration** Authorization services, add users, define roles, add links.

z/OSMF Workload Management (V1.12)

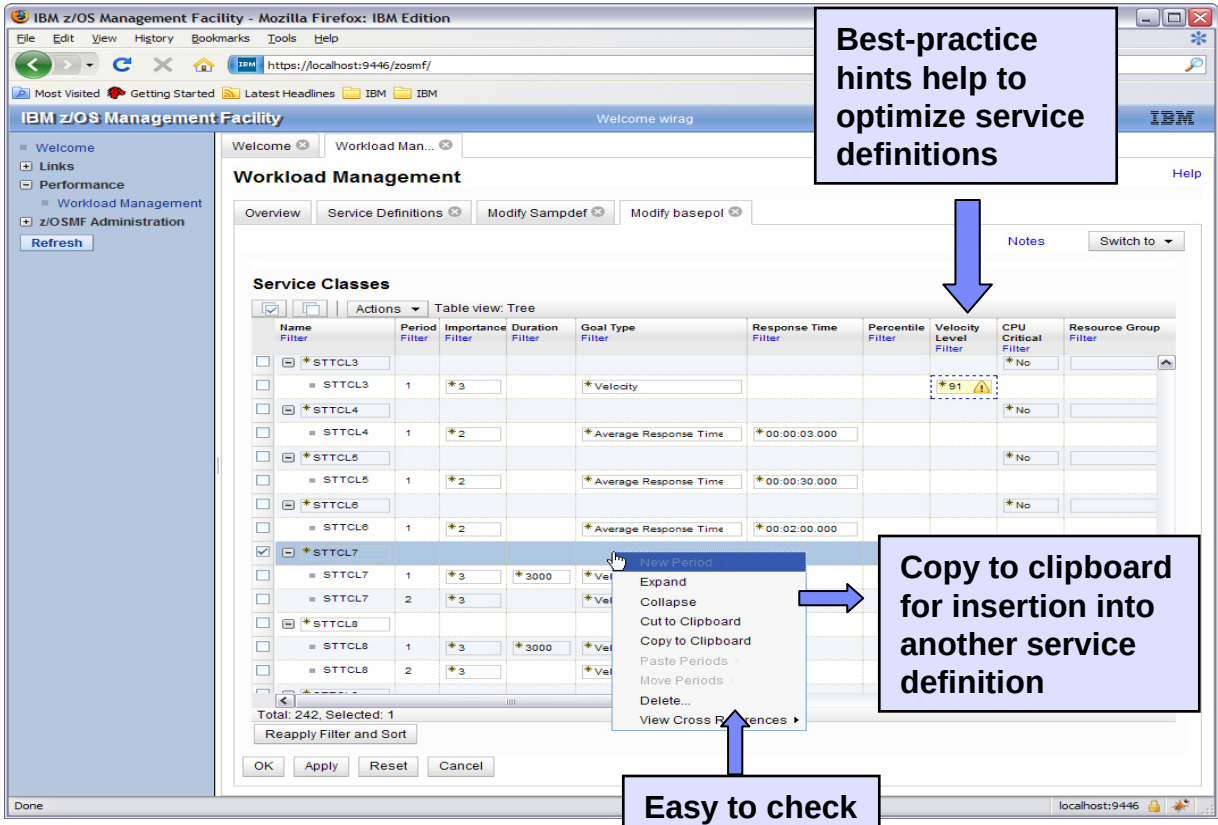
- **WLM Policy Editor is available on the z/OS Management Facility**
  - All the same function as in the Web-download tool and many new features
  - Direct access to the WLM Couple Data Set to install/extract service definitions. No need to FTP WLM policy files!
  - Activation of service policies and monitoring of the WLM status in the sysplex
- **Requires z/OSMF V1.12 and z/OS V1.12**



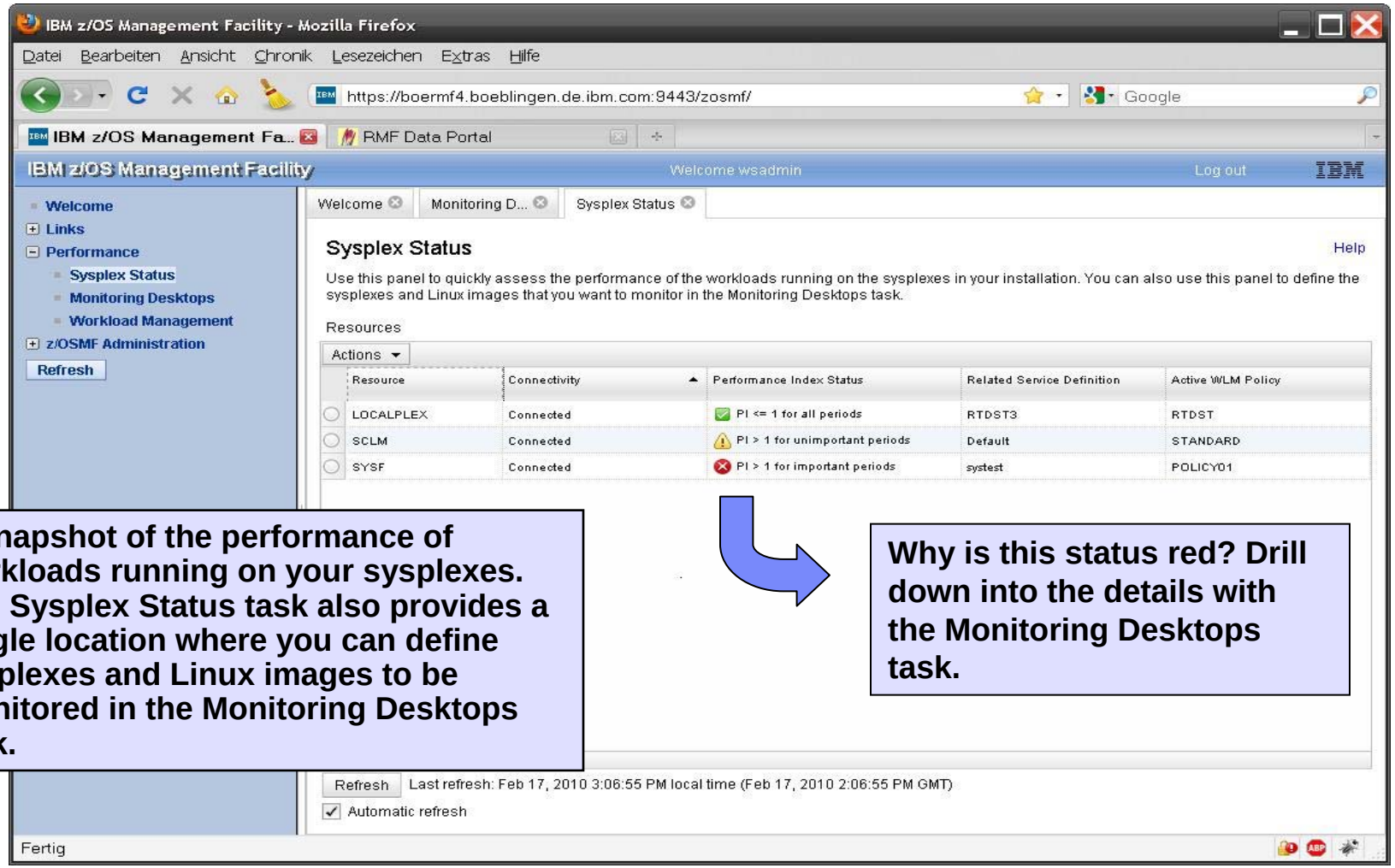
z/OSMF Workload Management (V1.12)

Editing service definitions

- **Simplified creation, modification and review of service definitions**
  - Policy elements are presented in tables
  - Tables can be edited, filtered, and sorted
  - Best-practice hints are displayed automatically
  - Several service definitions can be opened simultaneously
  - Cut, Copy, Paste of policy elements between service definitions



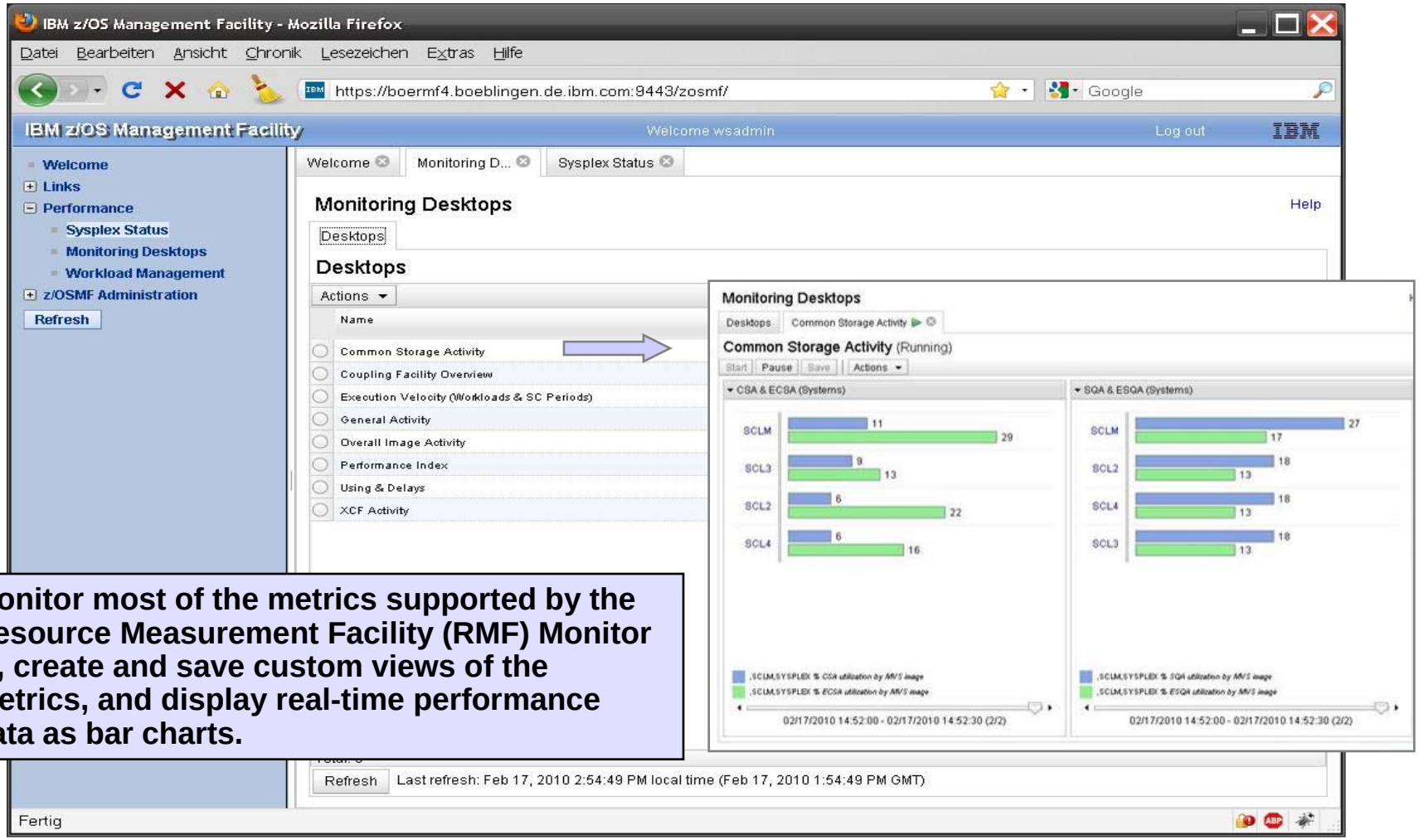
Resource Monitoring: Sysplex Status



A snapshot of the performance of workloads running on your sysplexes. The Sysplex Status task also provides a single location where you can define sysplexes and Linux images to be monitored in the Monitoring Desktops task.

Why is this status red? Drill down into the details with the Monitoring Desktops task.

Resource Monitoring: Monitoring Desktops



Monitor most of the metrics supported by the Resource Measurement Facility (RMF) Monitor III, create and save custom views of the metrics, and display real-time performance data as bar charts.

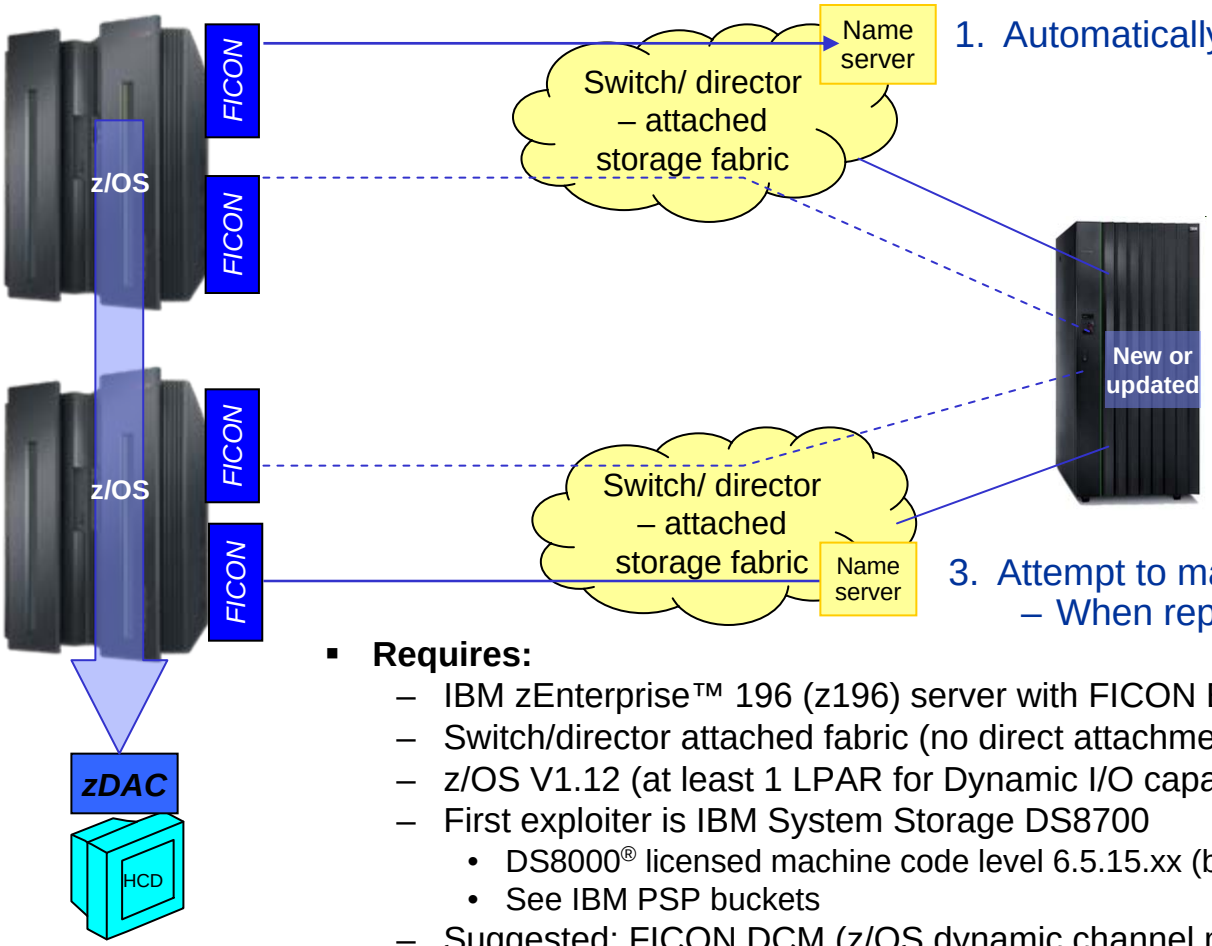
Simplified FICON I/O configuration

z/OS FICON discovery and auto-configuration (zDAC)

- **Automatic discovery and configuration for FICON disk and tape devices**
  - Reduces level of IT skill and time required to configure new devices
  - Uses intelligent analysis to help validate server and storage definitions are compatible with each other
  - Uses built-in best practices to help configure for high availability, helps avoid single points of failure
- **Transparent to existing configurations and settings**
  - Invoked through, integrated with z/OS Hardware Configuration Definition (HCD) and z/OS Hardware Configuration Manager (HCM)
  - Use with single systems or sysplexes
  - No migration actions required

Simplified FICON configuration definitions

z/OS FICON discovery and auto configuration (zDAC) can …



1. Automatically discover what is new or updated
2. Propose a channel configuration based on:
   - High availability best practices
   - Customer configuration policies
   - Existing configurations
3. Attempt to make a symmetric configuration
   - When repeated for each server in a Sysplex

- **Requires:**
  - IBM zEnterprise™ 196 (z196) server with FICON Express8 or FICON Express4
  - Switch/director attached fabric (no direct attachment)
  - z/OS V1.12 (at least 1 LPAR for Dynamic I/O capability)
  - First exploiter is IBM System Storage DS8700
    - DS8000® licensed machine code level 6.5.15.xx (bundle version 75.15.xx.xx), or later.
    - See IBM PSP buckets
  - Suggested: FICON DCM (z/OS dynamic channel management) to help manage performance

z/OS V1.12 – Performance for many key workloads

- **Up to 44% improvement for VSAM-based workloads (batch and online)***
  - Applications using VSAM KSDSs (such as CICS®, VSAM, VSAM RLS IMS VSAM, and Catalog) are anticipated to benefit.
- **Up to 30-50% improvement for z/OS XML System Services validating parsing***
  - Applications that use z/OS XML System Services validation (such as DB2® 10, Enterprise COBOL V4.2, and those that use the IBM XML Toolkit for z/OS) are anticipated to benefit.
  - **Als** Revolutionary XML fragment validation - By revalidating only the XML fragments being updated, for example DB2 10 for z/OS pureXML™ can avoid the costly revalidation of entire XML documents, which without this function can take many times longer.
- **Up to 50-90% for SVC dump capture time***
- **Up to 11% performance improvement for z/OS V1.12 XL C/C++ workloads*** with new z196 instructions

* **Based on IBM Lab results, your results will vary.**
- VSAM performance improvement is through the use of VSAM CA Reclaim; actual benefit may be more or less and will depend on the degree of VSAM data fragmentation and how the data is accessed. It is anticipated that VSAM key sequenced data sets (KSDS) that are severely fragmented or rarely reorganized will see the most benefit. For applications that delete a large number of records from a narrow key range and then immediately re-insert them, CA Reclaim could result in some performance degradation.
- z/OS XML System Services validation parsing performance will depend on the amount of data being parsed and the degree of complexity of the schema.
- Actual SVC dump time will depend on amount of data being captured and the amount of that data dumped from auxiliary storage.
- Performance improvements are based on internal IBM lab measurements, and the performance improvement of over 11% was observed using compute-intensive integer workload code generated by the z/OS V1.12 XL C/C++ compiler with high optimization when compared to code generated using the z/OS V1.11 XL C/C++ compiler, on a z196 server.

z/OS Performance Enhancements (V1.12)

- **Network performance is improved.**
  - Processing overhead for Application Transparent -- Transport Layer Security (AT-TLS) can be improved by **30%*.**
  - Network throughput for **interactive** workloads can be improved by **30-50%*** using the new Inbound Workload Queuing (IWQ) function, which is exclusive to OSA-Express3 on IBM zEnterprise 196 (z196) and IBM System z10™ servers
- **Shorter DB2 9 for z/OS restart time***
- **Performance improvement for string manipulative-intensive workloads** (such as Perl) on z10™ and z196 servers, results will vary depending on application language and degree of string manipulation)
- **Data error? Recover a previous version of your data faster –** Significant DFSMSdss™ Dump/Restore/Copydump performance improvements - Use 256K blocks rather than 64K blocks… keep an eye on it.

* Based on IBM Lab results, your results will vary.

- The AT-TLS CPU consumption results were obtained on System z10, model 2097-E64. Actual AT-TLS CPU consumption improvement will depend on the amount of data being transmitted and whether the workload is interactive or streaming. Throughput gain due to this improvement in CPU consumption is likely, but would vary depending on overall utilization of the z/OS image.
- The interactive networking throughput measurements were obtained on System z10, model 2097-E64 with OSA Express 3 Inbound Workload Queuing function. Actual benefit will depend on amount of data being transferred, presence of bulk-data traffic in the mix, and whether communication is z/OS to z/OS, or z/OS to distributed system.
- DB2 9 for z/OS startup time reduction is through z/OS Allocation, DFSMSdfp, and GRS improvements; actual benefit will depend on number of data sets opened. It is anticipated that address spaces opening up many thousands of data sets will see more benefit.

z/OS V1.12 Availability Enhancements

- **VSAM Control Area (CA) Reclaim**
  - Improve application performance, storage utilization, and availability by avoiding the planned outages used for defragmenting and reorganizing VSAM KSDSs to eliminate empty Control Areas.
  - Applications that use VSAM KSDS (such as IMS, CICS, Catalog) can benefit.
- **z/OS Run Time Diagnostics**
  - Helps you reduce the time spent deciding what actions to take to resolve a problem. This function is designed to analyze and help identify possible problem areas in as little as one minute, whereby an experienced operator might take up to 20 minutes.
- **Smart components**
  - GRS and XCF have the ability / option to automatically preserve sysplex availability by taking themselves off line before small problems can turn in to big ones.
- **Timed Auto Reply**
  - Gives z/OS the option to respond automatically to certain messages when you cannot, preventing small incidents from cascading to larger ones.
  - Depending on operator workload, it can take up to 30 minutes to respond to a message, in which time the incident may be cascaded through multiple images and systems. Now, optional ability to respond in seconds!

z/OS Predictive Failure Analysis

- **PFA can help you avoid 'soft' failures (available starting with V1.10)**
  - Hard failures have a clear start and a clear cause, but soft failures are caused by abnormal, but allowable behavior. Multiple atypical, but legal actions can cause soft failures.
- **z/OS system heuristically learns from its own environment and is able to anticipate and report on potential system issues (however rare) before they are an impact to your business.**
  - Common storage usage checking (V1.10) is designed to detect increased use of common storage – can helps operators identify and respond to the top contributors of the change.
  - LOGREC arrival rate detection (V1.10) is designed to measure software failures using LOGRECs – can help you determine if the address space or the z/OS image is damaged.
  - Frame and slot usage checking (V1.11) is designed to detect increased usage of virtual storage – can enable operators and automation to respond to situations from storage leaks.
  - Message arrival rate detection (with z/OS V1.11) is designed to monitor the volume of messages of a system - can help you determine whether a problem exists and where.
  - SMF Message Arrival rate detection (planned for z/OS V1.12) is designed to monitor volume of SMF records – is designed to issue an alert warning.
- **Additional customization for your environment -** Ability to specify atypical jobs and address spaces to be excluded from learning algorithms (V1.12)

z/OS Availability Enhancements

Parallel Sysplex updates (V1.12)

- **Sysplex function**
  - NEW zDAC – simplifies FICON tape and disk configuration – can attempt to configure a symmetric configuration for a sysplex
  - z/OS Management Facility – New Sysplex Status function provides a quick simple consolidated view of resources in a sysplex
  - Option for SFM to automatically partition systems with malfunctioning critical members to preserve sysplex availability
  - New health checks for Coupling facility structures and sysplex-aware zFS
  - Updated CFSIZER tool, support for larger CF structures
- **Sysplex distributor**
  - Sysplex Distributor Hot Standby capability
  - Sysplex Distributor self-healing capabilities with problem detection and recovery, event notification, and stack isolation
  - Inbound workload queuing (OSA-Express3) can help improve Sysplex Distributor throughput
  - NEW ! Trusted TCP connections to
    - Allows endpoints within a z/OS image, Sysplex, or Subplex to establish a trust relationship with no overhead and CPU-related costs of SSL/TLS with client authentication
    - Security information exchanged using secure XCF messaging
- **Synergy with z196 server**
  - Up to 80 Coupling Links
  - Up to 128 coupling CHPIDs
  - Up to 255 connectors to cache structures (247 to lock structures)
  - Up to 2047 structures per CF image
  - Non disruptive data capture

Enhancements in Networking Security (V1.12)

- **NEW! Support for IKEv2**
  - Internet Key Exchange version 2 (IKEv2) is specified by RFC 4302. z/OS one of the early adopters.
- **IPSec and IKE**:
  - 256-bit AES Cipher Block Chaining (CBC), 128-bit and 256-bit AES Galois Counter Mode (GCM) and Galois Message Authentication Code (GMAC), AES128-XCBC-96
  - HMAC-SHA-256-128, HMAC-SHA-384-192, and HMAC-SHA-512-256
  - Support for elliptic curve digital signature algorithm (ECDSA) authentication and Diffie-Hellman (ECDH) key agreement
  - Federal Information Processing Standard (FIPS) FIPS 140-2 (via System SSL and ICSF)
- **System SSL**:
  - Elliptic Curve Cryptography (ECC), ECDSA (Elliptic Curve Digital Signature Algorithm).
    - ECC for PKI and RACDCERT too
  - PKCS#11 token that have RSA key sizes up to 4096-bits, DSA keys and Diffie-Hellman keys.
- **ICSF**
  - Support for translation of external RSA tokens wrapped with key encrypting keys into smart card format. - you will need an IBM System z9® or System z10 server with the Crypto Express2 feature
  - planned to exploit the enhancements made to the CPACF in support of separate key wrapping keys for DES/TDES and AES. This is designed to provide the same functions available using the PCI card, but with the advantage of CPACF performance.

z/OS and IPv6

- **Industry sources indicate we have about 2 years before IPv4 addresses run out!**
  - http://www.potaroo.net/tools/ipv4/index.html
- **z/OS V1.10 is IPv6 certified!**
  - "Special Interoperability Test Certification of the IBM z/OS Version 1.10 Operating System for IBM Mainframe Computer Systems for Internet Protocol Version 6 Capability", US government, Defense Information Systems Agency, Joint Interoperability Test Command
    - (http://jitc.fhu.disa.mil/adv_ip/register/certs/ibmzosv110_dec08.pdf)
- **For z/OS V1.11**
  - Comm Server support for IPv6 temporary auto-configured addresses (RFC4941)
  - Comm Server support for IPv6 Type 0 Routing Headers (RFC5095)
  - ICSF provides new services to support the AES-based AES-XCBC-MAC-96 and AES-XCBC-PRF-128 algorithms - intended to meet new government IPv6 standards
- **For z/OS V1.12**
  - Health checks for IPv4 and IPv6 routing
  - Support for DFSMSrmm™, IKEv2, ability to Send DNS Queries Over IPv6, support for security-related RFC3484 and RFC5014

z/OS Security Server – RACF®

Helping to address security and compliance[1] guidelines

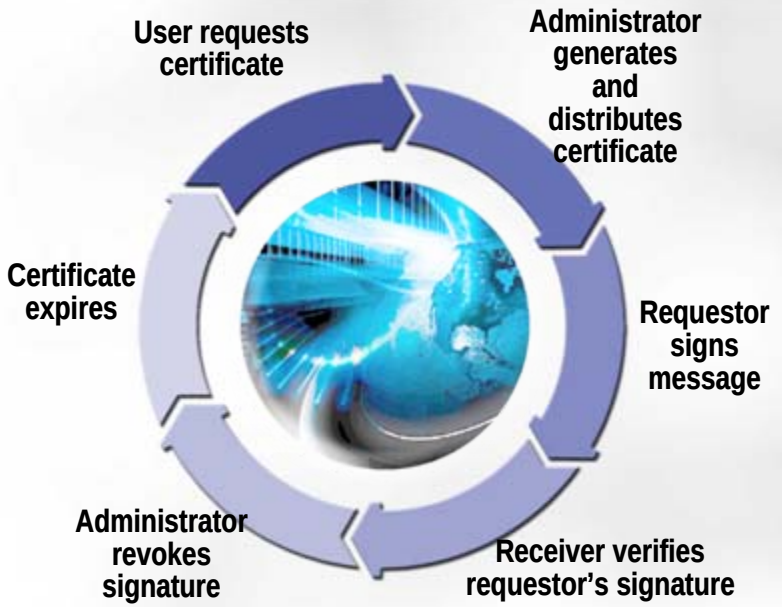
- **Enhancements with z/OS V1.12**
  - RACF functionality (RACF RACDCERT)
  - Support for long certificate names – integrate with other certificate authorities easier
  - Create certificates with expiration dates far in the future.
  - Create and sign certificates with Elliptic Curve Cryptography (ECC) keys, in addition to RSA and DSA keys.
  - The Command Prefix Facility (CPF) is planned to support security checking similar to that provided for the ROUTE operator command
- **Tivoli® Directory Server for z/OS (LDAP)**
  - More security management capabilities
  - Salted SHA for passwords – Help make dictionary attacks more difficult
  - Syntaxes and matching rules similar to IBM Tivoli Directory Server (distributed)

1. It is the customer's responsibility to identify, interpret, and comply with laws or regulatory requirements that affect its business. IBM does not represent that its products or services will ensure that the customer is in compliance with the law.

z/OS PKI Services

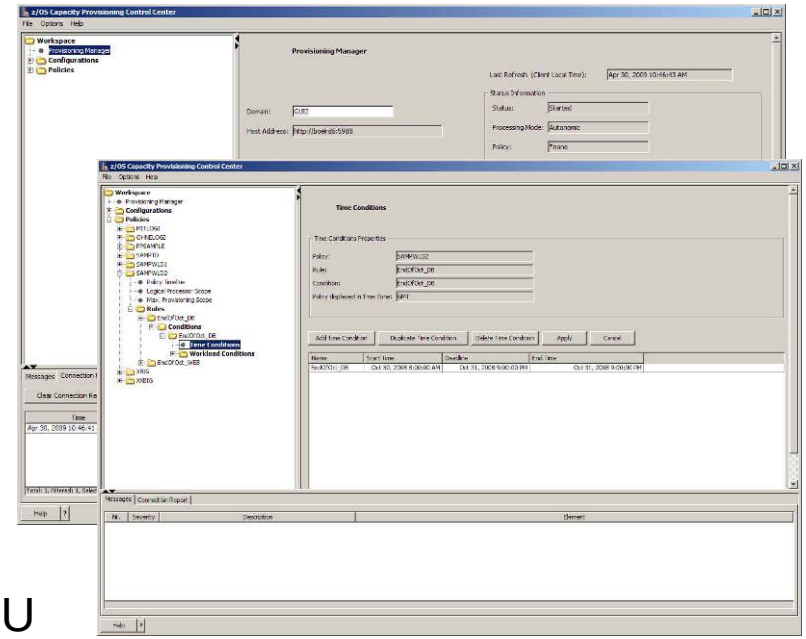
A complete digital certificate solution

- **If your organization spends more than $200,000 a year on digital certificates, then it may be worth it to invest in z/OS PKI Services to address your certificate needs**
- **Provides full certificate life cycle management**
  - Generate certificates for end users, network devices, browsers, and servers
  - Administration, approval, renewal, and revocation processes can be automated
- **PKI Services, many updates over the years!**
  - Improved automated e-mail notification for certificate requests, renewals, expirations (V1.9)
  - Support for Unicode (UTF8 subset) – helps improve compatibility with existing CAs. (V1.10)
  - New key archival/recovery capabilities – provides a backup process for recovery of keys (V1.11)
  - Support for ECC keys (in addition to RSA and DSA), automation to find unused cert. serial numbers, support for Certification Management Protocol (CMP) for integration with existing Certificate Authority solutions (V1.12)



Simplified Usage of On/Off Capacity On Demand

Efficient management of System z10 and zEnterprise server capacity



- **Capacity management challenge**
  - Events and workload spikes can be unexpected
  - Manual capacity management may be time-consuming or subject to some error
- **z/OS Capacity Provisioning Manager**
  - Manual or automatic monitoring, activation, and deactivation of OOCoD
  - Flexibility – can activate OOCoD incrementally even in combination with CBU
  - Efficiency – policy based capacity management
  - Familiarity – modern GUI that uses RMF and CIM to gather system metrics
  - With z/OS V1.11 – now uses BCPii base component, TCP/IP connections not needed for connections to HMC or Support Element.
  - With z/OS V1.12 – workload driven provisioning for CICS and IMS™ transaction classes.

http://www.ibm.com/systems/z/os/zos/features/wlm/

z/OS Simplifying Operations and Programming (V1.12)

- **z/OS XML System Services**
  - XML validation parsing performance improvements
  - New fragment validation
- **Language Environment®** – support for non-overrideable options – avoid user modifications, simplify migration
- **SDSF** – New Java classes to access SDSF information from Java apps, new REXX™ interface simplify access to the system log for SDSF REXX
- **New health checks:**
  - Write checks in METAL C (in addition to HLASM and SYSREXX™)
  - Parallel Sysplex® CF structures, configuration data sets, CFRM protocols
  - SMB, DFSMS™, IOS, IPv6
  - Additional migration checks are planned
- **SMF** – To help you better understand the resources consumed by batch jobs and improve the accuracy of chargeback programs, z/OS V1.12 will be designed to record the CPU time consumed for job steps in initiator address spaces using new fields in SMF Type 30 records.

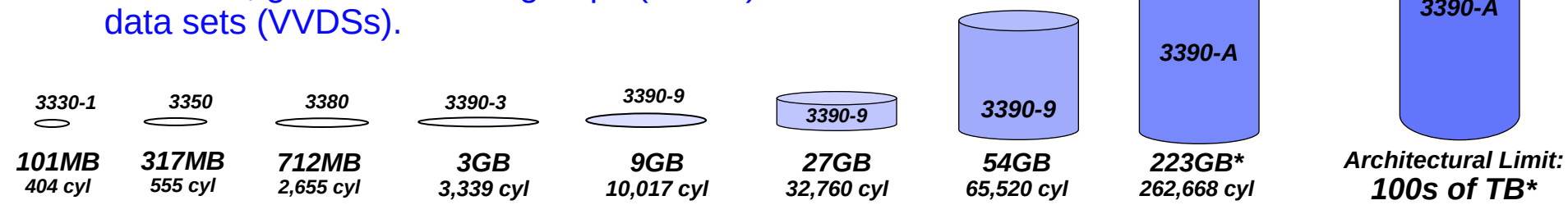
Rational® z/OS V1.12 XL C/C++

Maximize C/C++ application performance

- **What's new:**
  - Exploits zEnterprise 196 hardware instructions
  - Improved optimization technology
  - Improving developers productivity with new diagnostic and debugging capabilities
  - Introduced new C++0x language features which improves code portability
  - Enhanced Metal C RENT support allowing exploitation by CICS
- **Features / Business Value:**
  - Allows you to produce high-performing z/OS-based C/C++ applications that are optimized for System z to maximize return on investment on System z
  - Provide features to help programmers diagnose and debug problems
  - Provide support for new C++0x features to improve code portability and provide more coding options
  - Enhance Metal C support

Taking z/OS Storage Volumes to the Extreme

- **An Extended Address Volume (EAV) helps address storage constraints for very large storage environments**
- **EAV can help simplify storage management by enabling you to manage fewer, larger volumes, as opposed to many small volumes**
- **Available with z/OS V1.10 and IBM System Storage™ DS8000 Turbo (R4.1 and later)**
  - Initially, 223 GB volumes supported by VSAM – applications that uses VSAM data sets (including DB2, CICS, zFS file systems, SMP/E CSI data sets, and NFS mounted data sets) can benefit.
  - With z/OS V1.11, support for extended format sequential data sets
  - With z/OS V1.12, support extended to sequential (both basic and large) data sets, partitioned (PDS/PDSE) data sets, catalogs, BDAM data sets, JES spool and checkpoint data sets, standalone Dump extended format dump data sets, DFSMSrmm data sets, generation data groups (GDGs) and VSAM volume data sets (VVDSs).



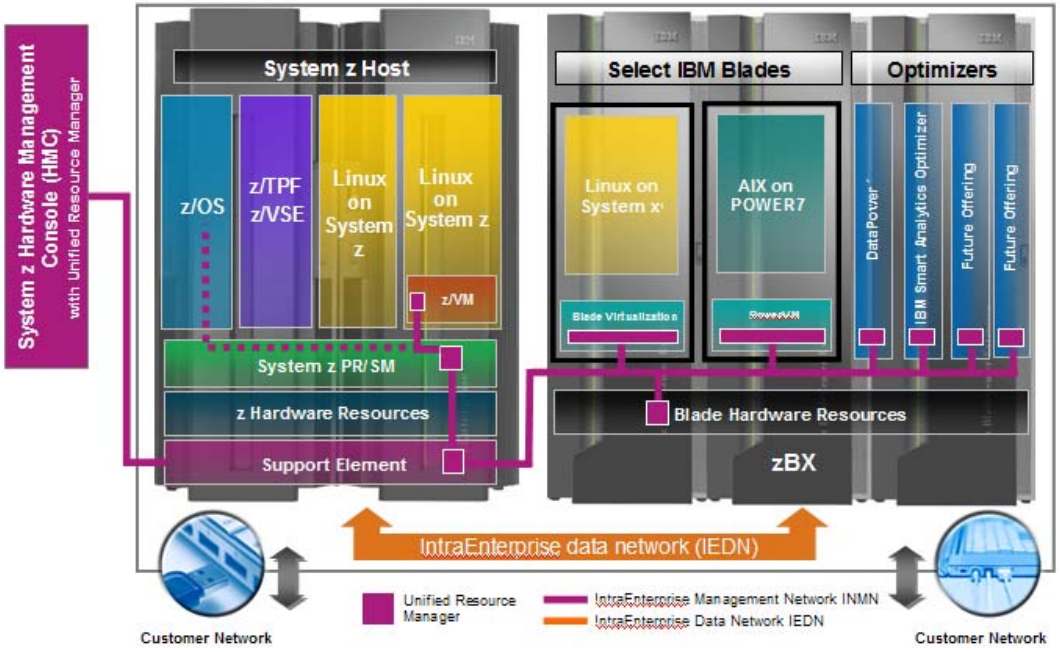
IBM zEnterprise System

Targeting the systems that rely on z/OS

- **z/OS provides**
  - High availability components, subsystems, sysplex
  - Disaster recovery with GDPS.
  - z/OS Workload Management, IRD
  - Image, server, storage scalability
  - User, resource, and network security and auditability
  - New simplification and productivity
  - DB2 synergies: scale, data sharing, data compression, WLM of DB2 bufferpools, XML, zIIP specialty engine
- **zEnterprise System provides**
  - Helps provide centralized provisioning, monitoring, management, and consistent quality of service for non-z/OS virtual servers
- **Together co-locating new applications with z/OS**
  - Throughput for interactive workloads (as well as batch and FTP) with OSA-Express3 IWQ
  - Highly secure isolated data network
  - Insight for multi-tier workloads –
  - Simplified infrastructure for multi-tier workload

z/OS and the IBM zEnterprise Unified Resource Manager

- **z/OS integrates with zEnterprise 196 and zEnterprise BladeCenter Extension seamlessly**
- **Unified Resource Manager defines the ensemble and provisions the new management and data networks**
- **New HCD (and HCM) definitions for the new management and data networks**
  - New OSA CHPIDs: OSM for management network and OSX for data network
- **z/OS Communications Server configuration to enable z/OS to participate in a zEnterprise ensemble**



- **IBM zEnterprise Unified Resource Manager:**
  - Can manage ‘virtual servers’ (z/VM and blade)
  - Can monitor ‘virtual server’ workloads and z/OS workloads.
- **New z/OS agent (Guest Platform Management Provider (GPMP)) can send high level z/OS WLM data to zEnterprise Unified Resource Manager**
  - Agent also in z/OS Management Facility

z/OS Delivery Media

- **Over the Internet**
  - Did you know there are now more shipments of z/OS over the Internet than by tape? For more information see http://www.ibm.com/systems/z/os/zos/serverpac_internet_delivery.html
- **With IBM 3590 and 3592 Tape or IBM TS1120 Tape**
  - Using high-density media makes it much easier to handle and install z/OS because there are much fewer tapes to manage!
- **Via DVD**
  - Installing software using DVD requires a workstation with a DVD drive that can read discs in DVD-5 (single-sided, single layer) format and a network connection to your z/OS system

We need to hear from you!

Consumability survey

- Rate z/OS over its lifecycle
- **Web survey**: multiple choice questions that typically take 25 minutes. Rate z/OS on:
  - Acquiring z/OS
  - Installing and configuring z/OS
  - Using and administering z/OS
  - Troubleshooting problems
  - Updating the product (e.g. installing fix packs)
- **Audience**: Anyone, Sysprogs, administrators, managers, and higher level executives. Any number of persons from your company can participate in the survey.
- **If interested**: email name and company, to Linda Jorgensen ljorgen@us.ibm.com IBM will email you a link to the online survey

System z focus area feedback

- Help us to capture deeper system-level requirements for z/OS, such as:
  - Simplification, z/OS Management Facility
  - Security
  - Hardware Configuration Data (and HCM)
  - Hardware Management Console
  - Workload Management
- **One-on-one** with IBM developers and can encompass: roundtable discussions, design and interface evaluations, and task scenario reviews.
- Anyone, not anonymous. Opportunities to provide design feedback can arise at any time.
- **If interested**: email your name, company, and phone number to Laura Bostian lbostian@us.ibm.com

z/OS V1.12 and z/OS Management Facility V1.12

- **Advantages to your operations through performance improvements and fewer workload disruptions**
  - Up to 40% performance improvement for VSAM-based online and batch workloads*
  - Avoiding data fragmentation and outages for VSAM data reorganizations
  - Up to 50-90% performance improvement for SVC dump capture time*
  - Up to 30 to 50% performance improvement for XML validation workloads*
  - Up to 30-50% networking throughput improvement*
  - Up to 11% performance improvement for C/C++ workloads*
  - Automatic partitioning where sysplex components can automatically initiate actions to preserve availability to help reduce the incidence of sysplex-wide problems.
- **Advantages to your organization with improved productivity, automatic real time capabilities, and built-in expert guidance that reduces time to perform tasks**
  - Reduce time for system management tasks by hours with z/OS Management Facility
  - Configure disk and tape in a fraction of the time with z/OS FICON Discovery and Auto Configuration
  - The power to act more quickly and accurately. z/OS Predictive Failure Analysis can monitor z/OS system trends and can warn you of a potential problem, potentially avoiding an outage. New z/OS Run Time Diagnostics can help you quickly identify possible problems in as little as one minute.
- **Advantages to your business: exploiting a new era for integrated computing; faster, highly secure connectivity; supporting end-to-end workload management, leveraging a whole new class of workload 'optimizers'**
  - Synergies with the IBM zEnterprise System

* Based on IBM Lab results, your results will vary.
- VSAM performance improvement is through the use of VSAM CA Reclaim; actual benefit may be more or less and will depend on the degree of VSAM data fragmentation and how the data is accessed. It is anticipated that VSAM key sequenced data sets (KSDS) that are severely fragmented or rarely reorganized will see the most benefit. For applications that delete a large number of records from a narrow key range and then immediately re-insert them, CA Reclaim could result in some performance degradation.
- z/OS XML System Services validation parsing performance will depend on the amount of data being parsed and the degree of complexity of the schema.
- Actual SVC dump time will depend on amount of data being captured and the amount of that data dumped from auxiliary storage.
- The interactive networking throughput measurements were obtained on System z10, model 2097-E64 with OSA Express 3 Inbound Workload Queuing function. Actual benefit will depend on amount of data being transferred, presence of bulk-data traffic in the mix, and whether communication is z/OS to z/OS, or z/OS to distributed system.
- Performance improvements are based on internal IBM lab measurements, and the performance improvement of over 11% was observed using compute-intensive integer workload code generated by the z/OS V1.12 XL C/C++ compiler with high optimization when compared to code generated using the z/OS V1.11 XL C/C++ compiler on z196 server.

What is coming in 2011 for z/OS and z/OS Management Facility?

- **z/OS plans[1] several enhancements designed to:**
  - Get early warning of certain system issues before they become obvious
  - Help you shorten batch windows using JCL improvements in JES2 environments.
  - Simplify batch application programming to enable COBOL and Java to interoperate for DB2 with transactional integrity
  - Improve I/O performance for z/OS UNIX workloads in a Parallel Sysplex
  - Provide more options you can use to secure your data with newer, faster, and more scalable encryption and security capabilities
- **z/OS MF[1] plans several enhancements designed to:**
  - Clone z/OS images and deploy software more easily and consistently
  - Define new storage volumes to SMS quickly and easily
  - More easily maintain highly secure network connections

1. All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

Thank You!

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