



# IBM Technical Update

GSE Large Systems Working Group

Prepared by: Roger Fowler  
Consulting IT Specialist  
IBM United Kingdom



**ON DEMAND BUSINESS™**

© 2006 IBM Corporation

# Trademarks

AIX*	IBM eServer	z/VM*
CICS*	IBM logo*	zSeries*
DB2*	IMS	
DB2 Connect	On Demand Business logo	
DB2 Universal Database	Parallel Sysplex*	
DRDA*	System z	
FICON*	System z9	
GDPS*	WebSphere*	
HiperSockets	z/Architecture	
IBM*	z/OS*	

\* Registered trademarks of IBM Corporation

## The following are trademarks or registered trademarks of other companies.

Intel is a trademark of the Intel Corporation in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Java and all Java-related trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc., in the United States and other countries.

Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.

UNIX is a registered trademark of The Open Group in the United States and other countries.

\* All other products may be trademarks or registered trademarks of their respective companies.

### Notes:

Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.

All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.

This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.

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

Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

This presentation and the claims outlined in it were reviewed for compliance with US law. Adaptations of these claims for use in other geographies must be reviewed by the local country counsel for compliance with local laws.

## System z Live Virtual Class

### § z/VSE Tools – an overview

### § Over 20 tools available from the z/VSE website

### § Supplied ‘as-is’

- i.e. no additional charge
- Downloadable from z/VSE homepage

### § Free webcast on Thursday 29<sup>th</sup> May at 16:00 BST

- Will provide an overview of each tool and typical usage scenarios

### § Contact [Roger.Fowler@uk.ibm.com](mailto:Roger.Fowler@uk.ibm.com) for further details

## System z Live Virtual Class

### § Linux on System z

- High Availability for Linux on IBM System z servers

### § This session will cover a set of high availability architectures for Linux Virtual Servers (LVS) looking at

- Single Points of Failure in an LVS environment; probability and cost to remove them
- Power of virtualization to minimise degradation of service in the wake of failures
- Co-operation between LVSs and parallel sysplex and z/OS datasharing groups
- Sample architecture specifics including decisions, tradeoffs, configuration options and product technologies used

### § Free webcast on Wednesday 28<sup>th</sup> May at 16:00 BST

### § Contact [Roger.Fowler@uk.ibm.com](mailto:Roger.Fowler@uk.ibm.com) for further details

## z10 New hardware features

### § OSA Express3 Gigabit Ethernet

- 4 ports per feature

### § OSA Express3 10 Gigabit Ethernet LR

- 2 ports per feature

### § InfiniBand coupling links

- Supports sharing of physical link with multiple chpids per port
- Point to point connectivity up to 150m using high bandwidth, industry standard, fibre optic cabling
- Also available on z9-EC (and BC model S07) dedicated coupling facilities

## z10 OSA Express3

### § **New hardware infrastructure**

- New microprocessor
- New PCI adapter – PCI Express (PCI-E)

### § **Direct Memory Access**

- No channel program
- No I/O interrupts for write operations
- Reduced I/O interrupts for read operations

### § **Hardware data router**

- Packet construction, inspection and routing now done in hardware rather than firmware

### § **Up to 45% reduction in latency**

### § **Up to 4x improvement in throughput**

- OSA Express3 10 Gb LR vs. OSA Express2 10 Gb LR

## IBM System Services Runtime Environment for z/OS V1R1

- § **Provides native web services runtime environment for select system-level applications**
- § **Customised and easy to install and configure**
  - Only a few, installation specific parameters need to be specified
- § **Initial exploiter is TotalStorage Productivity Center for Replication Basic Edition**
- § **Requires z/OS V1R9**
- § **This is a no-charge product**

## GDPS V3.5 - Enterprise wide infrastructure availability

### § **Distributed Cluster Management**

- Coordinated disaster recover across System z and non-System z servers
- Integration with Veritas Cluster Server™ (VCS)

### § **GDPS Multiplatform Resiliency for System z**

- Expanded to include Red Hat Enterprise Linux 4

### § **Expanded Graphical User Interface**

- Now supports peer-to-peer Virtual Tape System (VTS) as well as GDPS/PPRC HyperSwap Manager and GDPS/Global Mirror

## GDPS V3.5 contd.

### § **Greater disk efficiency**

- Support for FlashCopy Space Efficient

### § **Improved performance and systems management**

- Support for z/OS Global Mirror Multi-Reader

## GDPS V3.5 contd.

### § **Previewing:**

- Increased availability with GDPS/MzGM support for z/OS Metro/Global Mirror Incremental Resynch
- Improved Recovery time with CBU and OOCoD enhancements
- Improved price/performance with System Data Mover offload to zIIP

## GDPS V3.5 contd.

### § Statements of Direction:

- DCM integration with Tivoli System Automation Application Manager
  - Initial support provided with GDPS/PPRC in 2008
  
- GDPS cooperation with Tivoli Business Continuity Process Manager
  - Integration of GDPF configuration data in CMDB
  - Integration of GDPS as operational manager in a workflow support for Business Continuity

## Print Services Facility V4.2 for z/OS

- § **Support for AFP Colour Management Architecture**
- § **Support for multiple datasets or printfiles with in-line resource groups**
- § **Support for compression**
  - Reduce transmission times and network utilisation
- § **Support for SMF type 6 records for printfiles processed by AFP Download Plus**
- § **AFP Download Plus now sends the page count to remote print servers**
- § **Optionally select encryption for printfiles transmitted from PSF to a remote printserver**
- § **Ability to specify parms on the AFPPARMS DD statement on the FSA level**

# IBM Enterprise COBOL for z/OS V4R1

## § XML GENERATE

- Extended syntax to give greater control over document generation
  - WITH ATTRIBUTES
  - WITH ENCODING
  - NAMESPACE-PREFIX
  - WITH XML-DECLARATION
- Support for generating XML documents in UTF-8 Unicode

## § XML PARSE enhancements

- z/OS System Services XML parser now supported

## § Performance enhancements

- Exploits new z/Architecture instructions
- USAGE NATIONAL performance significantly improved

## § Enhanced DB2 support

- Supports new DB2 9 SQL datatypes and new SQL syntax

## § DFSMS Large-format dataset support

## ITSO workshops

- § 27 Oct            **z/OS V1R10**
- § 28 Oct            **Parallel Sysplex Update & High Availability topics**
- § 29 Oct            **System z Hardware Update**
- § 30 Oct            **System z Security Update**
- § 31 Oct            **System z Network Technologies Update**

§ All above are based in London

§ Keep a close eye on scheduled dates – may change

§ Contact [Khaled Ibrahim@uk.ibm.com](mailto:Khaled_Ibrahim@uk.ibm.com) for more details

## Z990 Withdrawal from marketing

### § Effective 30 June 2008

- All models of z990 (new footprints)
- All upgrades from z900 or z890 to z990 (new frames)

### § Effective 31 Dec 2008

- All model conversions and MES features requiring hardware are withdrawn

### § Effective 30 June 2009

- All microcode-only features and upgrades are withdrawn

## Z890 Withdrawal from marketing – an update

### § Previously

- Effective 30 June 2008, the following were withdrawn
  - All new models of z890
  - All upgrades requiring hardware
  - All microcode-only upgrades and MES features

### § Now

- Available until 30 Sept 2008
  - Upgrades requiring hardware
  - Microcode-only upgrades and MES features

## Recent Redbooks

- § Improving your productivity with the ISPF productivity tool V5.9 on z/OS
- § IBM Systems z strengths and values
- § IBM System Storage DS8000 Copy Services with IBM System z
- § System z cryptographic services and z/OS PKI services
- § ABCs of z/OS System Programming: Vols 1, 5 and 9
- § IBM System Storage DS8000 series: Architecture and implementation
- § z/OS V1R8 DFSMS Technical Update
- § Totalstorage Productivity Center V3.3 Update Guide
- § IBM / Cisco Multiprotocol routing: An introduction and implementation
- § IBM System Storage DS4000 and Storage Manager V10.10
- § Using Oracle Solutions for Linux on System z
- § Linux on IBM System z: Performance measurement and tuning
- § IBM System Storage Tape Encryption Solutions

## Recent Redbooks contd.

- § **Implementing an IBM / Cisco SAN**
- § **Implementing an IBM / Brocade SAN**
- § **Exploring Systems monitoring for CICS transaction Gateway V7.1 on z/OS**
- § **CICS Web Services workload management and availability**
- § **DB2 9 for z/OS stored procedures: Through the CALL and beyond**
- § **Communications Server for z/OS V1R9 TCP/IP implementation**
  - Vol 1: Base functions, connectivity and routing
  - Vol 2: Standard applications
  - Vol 3: High availability, scalability and performance
- § **IBM Tivoli Usage Accounting Manager V7.1 handbook**
- § **SAN Volume Controller: Best practices and performance guidelines**
- § **Techniques for managing large WebSphere installations**
- § **IBM TS3500 Tape Library with System z attachment:**
  - A practical guide to TS1120 tape drives and TS3500 tape automation

## Recent Redbooks contd.

- § **IBM Virtualization Engine TS7700: Tape virtualization for System z servers**
- § **Deployment Guide Series: Tivoli Usage Accounting Manager V7.1**
- § **Deployment Guide Series: IBM Tivoli Monitoring V6.2**
- § **IBM Tivoli Monitoring: Implementation and performance optimization for large scale environments**
- § **IBM TotalStorage 3494 Tape Library: A practical guide to tape drives and tape automation**

## Draft Redbooks

- § **GDPS Family: An introduction to concepts and facilities**
- § **WebSphere Commerce High Availability and performance considerations**
- § **Considerations for Multisite Sysplex Datasharing**
- § **IBM System z10 Enterprise Class Configuration setup**
- § **IBM System z10 Enterprise Class Capacity on Demand**
- § **IBM System z10 Enterprise Class Technical Guide**
- § **IBM System z10 Enterprise Class Technical Introduction**
- § **Data protection strategies with IBM System Storage N series**
- § **The Green Datacenter: Steps for the journey**
- § **IBM System z Connectivity Handbook**
- § **Server Time Protocol: Planning Guide**
- § **Server Time Protocol: Implementation Guide**
- § **Getting started with InfiniBand on System z10 and System z9**

## Draft Redbooks contd.

- § **InfoPrint Server for z/OS: InfoPrint transforms**
- § **WebSphere MQ Queue Sharing Group in a Parallel Sysplex environment**
- § **ABCs of System Programming Vol 6**
- § **Communications Server for z/OS V1R9 TCP/IP Implementation:**
  - Security and Policy based networking
- § **Experiences with Oracle 10g database on Linux for zSeries**
- § **Monitoring WebSphere application performance on z/OS**
- § **z/OS Planned Outage Avoidance checklist**
- § **CICS VR update for V4**

## Recent Redpapers

- § **Federated Identity and Trust Management**
- § **Planning for the unplanned: DB2 9 Disaster Recovery with IBM System Storage N series**
- § **Managing composite applications: An Operator's view**
- § **IBM SAN Volume Controller 4.2.1 Cache Partitioning**
- § **System Level Accelerators: A Hybrid Computing Solution**
- § **Managing an SOA environment with Tivoli**
- § **Cisco FICON basic implementation**
- § **IBM Systems Virtualization: Servers, Storage and Software**
- § **End to End planning for availability and performance monitoring**
- § **Multiple Subchannel Sets: An implementation view**
- § **Sharing and maintaining Linux under z/VM**
- § **Monitoring System z cryptographic services**

Download free from <http://www.redbooks.ibm.com>

**Any questions ?**