

Building a 'Gee Whiz' z/OS Toolkit

Clark Kidd

Session 2840; SHARE 108 in Tampa, Florida

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Watson & Walker, Inc. / www.watsonwalker.com

Home of *Cheryl Watson's TUNING Letter*, *BoxScore* and *GoalTender*



Agenda

- Disclaimers
- IBM Web Sites
- Vendor Web Sites
- Other Useful Web Sites
- Discussion Groups
- References

Disclaimers



- There are MILLIONS of online resources
 - Most listed here are:
 - z/OS-specific
 - Useful for new z/OS users
 - Multiple paths to the same resource
 - These are the speaker's recommendations
 - YMMV! (Your mileage may vary)
 - Additions are welcome
- All of these are free
 - But you may have to register
 - But you may have to be a customer
 - Some of them may contain shareware



IBM – z/OS Internet Library

- www.ibm.com/servers/eserver/zseries/zos/bkserv/
 - Library Centers (z/OS 1.4 - z/OS 1.8)
 - Elements and Features (z/OS 1.4 - z/OS 1.8)
 - Book Manager format (HTML)
 - PDF format
 - z/OS Platform publications
 - Parallel Sysplex
 - Software products
 - Other publications and links
- www.ibm.com/software/applications/office/bkmgr/adobeplugin.html
 - IBM Advanced Linguistic Search Plug-in (for PDF documents)

IBM – z/OS Internet Library



- LibraryCenter for z/OS 1.8

z/OS V1R8.0 LibraryCenter - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://publibz.boulder.ibm.com/bookmgr_OS5390/libraryserver/zosv1r8/

United States [change] Terms of use

Search for: RMPTTOM GO In: Selected Document Filters: None

Results

Document Search Results

Document Title "z/OS V1R8.0 MVS Initialization.
File Name: iea2e270
2 topics have matches for: **RMPTTOM**

Topics Listed by Importance:
[List Topics in Sequence](#)

[Statements/parameters for IEAOPTxx, 43.2](#)
[Chapter 43. IEAOPTxx \(OPT parameters\), 43.0](#)

IBM Library Server Copyright 1989, 2005 IBM Corporation. All rights reserved.

RMPTTOM
Specifies the SRM invocation interval. The specified real-time interval is adjusted by relative processor speed to become SRM time in order to ensure consistent SRM control across various processors. The relationship of real time to SRM time for each processor is described in the "Advanced SRM Parameter Concepts" section of [z/OS MVS Initialization and Tuning Guide](#).
Value Range: 1000-999999 msec
Default Value: 1000

VARYCPU
Specifies whether LPAR Vary CPU management is available or not available. (Note that Vary CPU management is available only in a partition that is enabled for LPAR weight management.) The syntax is:
VARYCPU=option
where option is either YES or NO. VARYCPU=YES, the default, specifies that LPAR Vary CPU Management is available for this system. VARYCPU=NO specifies that LPAR Vary CPU Management is *not* available.
Value Range:

- ◆ YES
- ◆ NO

Default Value: YES

VARYCPUMIN
Specifies the minimum number of CPs which must stay online during WLM LPAR management. The syntax is:
VARYCPUMIN=nn
where nn is the minimum number of online CPs. WLM LPAR management will not take CPs offline below this threshold.

Done

IBM – Redbooks

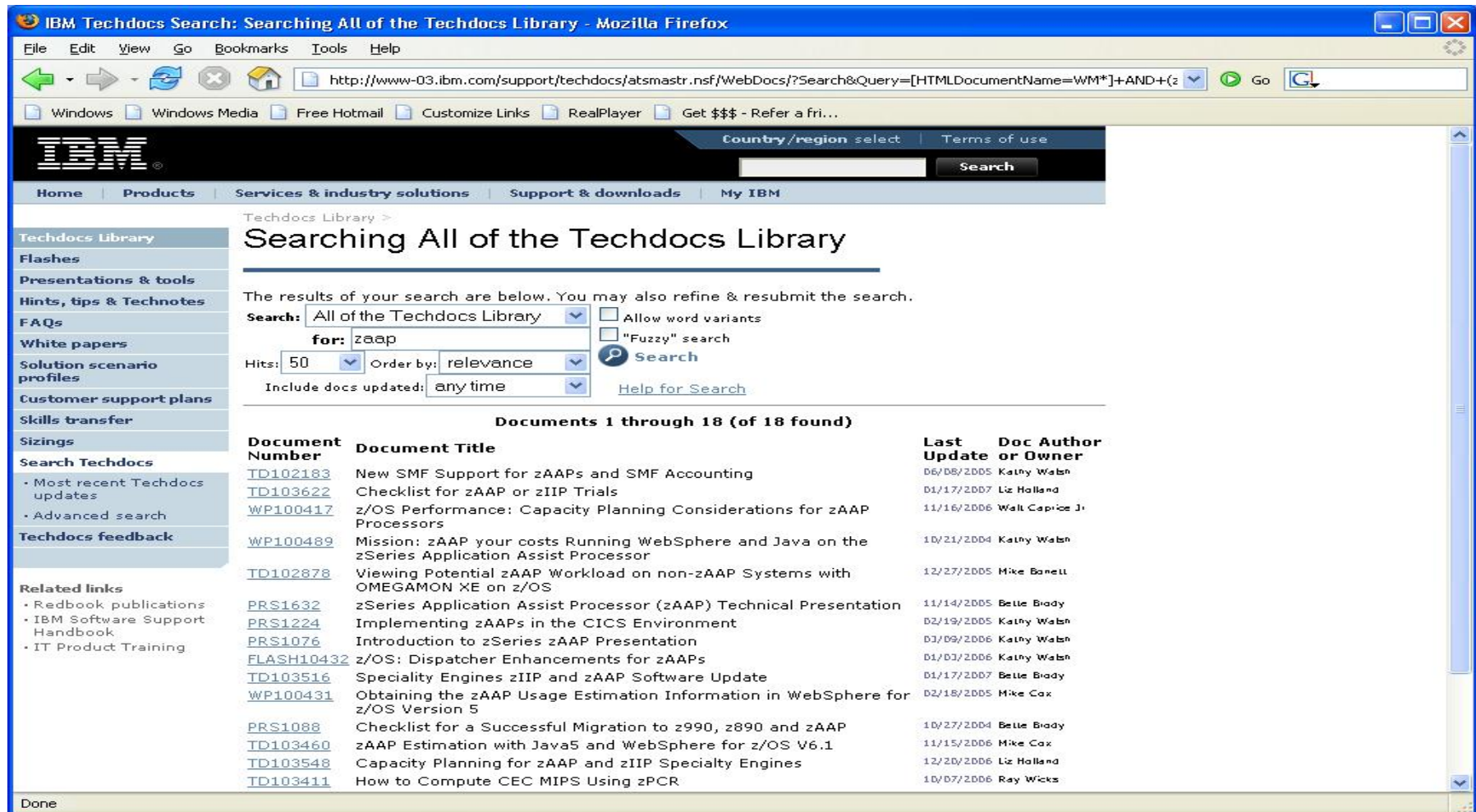
- www.redbooks.ibm.com
 - Publications
 - Redbooks
 - Redbook drafts
 - Redpapers
 - Technotes
 - Events
 - Residencies
 - Workshops
 - Notification Services
 - Mailing list
 - RSS feed

IBM – Technical Documents (Tech Docs)

- www.ibm.com/support/techdocs
 - Contains IBM sales/support documents
 - Several types of files
 - Flashes
 - Hints, Tips and Technotes
 - Presentations & Tools
 - White Papers
 - Others
 - Search by keyword / Date of last update
 - Options to limit / order results
 - Advanced search

IBM – Technical Documents (Tech Docs)

- Results of search for “zaap”



IBM Techdocs Search: Searching All of the Techdocs Library - Mozilla Firefox

http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebDocs/?Search&Query=[HTMLDocumentName=WM*]+AND+(z

Country/region select Terms of use

Home Products Services & industry solutions Support & downloads My IBM

Techdocs Library > Searching All of the Techdocs Library

The results of your search are below. You may also refine & resubmit the search.

Search: All of the Techdocs Library Allow word variants
 for: zaap "Fuzzy" search
 Hits: 50 Order by: relevance
 Include docs updated: any time [Help for Search](#)

Documents 1 through 18 (of 18 found)

Document Number	Document Title	Last Update	Doc Author or Owner
TD102183	New SMF Support for zAAPs and SMF Accounting	06/08/2005	Kathy Walsh
TD103622	Checklist for zAAP or zIIP Trials	01/17/2007	Liz Holland
WP100417	z/OS Performance: Capacity Planning Considerations for zAAP Processors	11/16/2006	Walt Caprice Jr.
WP100489	Mission: zAAP your costs Running WebSphere and Java on the zSeries Application Assist Processor	10/21/2004	Kathy Walsh
TD102878	Viewing Potential zAAP Workload on non-zAAP Systems with OMEGAMON XE on z/OS	12/27/2005	Mike Bonell
PRS1632	zSeries Application Assist Processor (zAAP) Technical Presentation	11/14/2005	Bette Brady
PRS1224	Implementing zAAPs in the CICS Environment	02/19/2005	Kathy Walsh
PRS1076	Introduction to zSeries zAAP Presentation	03/09/2006	Kathy Walsh
FLASH10432	z/OS: Dispatcher Enhancements for zAAPs	01/03/2006	Kathy Walsh
TD103516	Speciality Engines zIIP and zAAP Software Update	01/17/2007	Bette Brady
WP100431	Obtaining the zAAP Usage Estimation Information in WebSphere for z/OS Version 5	02/18/2005	Mike Cox
PRS1088	Checklist for a Successful Migration to z990, z890 and zAAP	10/27/2004	Bette Brady
TD103460	zAAP Estimation with Java5 and WebSphere for z/OS V6.1	11/15/2006	Mike Cox
TD103548	Capacity Planning for zAAP and zIIP Speciality Engines	12/20/2006	Liz Holland
TD103411	How to Compute CEC MIPS Using zPCR	10/07/2006	Ray Wicks

Done

IBM – General z/OS Information

- www.ibm.com/servers/eserver/zseries/zos/
 - What's New?
 - Downloads
 - Security topics
 - Components
 - Pricing
 - Wizards
 - Hot Topics newsletters
 - Contact z/OS
- www.mainframe.typepad.com
 - Mainframe weblog



IBM – General z/OS Information

- www.ibm.com/servers/eserver/zseries/zos/zos_sods.html
 - Statements of Direction
- www.ibm.com/servers/eserver/zseries/zos/support/
 - z/OS support
 - Server support by z/OS release
 - End-of-Service dates
 - Performance and availability information
 - News and Announcements
- www.ibm.com/servers/eserver/zseries/library/literature
 - Various papers and studies

IBM – General z/OS Information

- www.ibm.com/servers/eserver/zseries/zos/zfavorites/
 - zFavorites for zSeries
 - Online training
 - Academic Initiative
 - Links to LibraryCenter and LookAt
 - Operating systems and software products
 - Wizards
 - Hot Topics newsletters
 - Feedback
 - Or Google ‘zFavorites’
- www.ibm.com/news
 - Announcement Letters and news items



IBM – z/OS Education

- publibz.boulder.ibm.com/zoslib/pdf/zosbasic.pdf
 - z/OS Basics
 - A great mainframe introductory guide
- www.redbooks.ibm.com
 - Search for “ABCs”
 - *ABCs of z/OS System Programming*
 - Eleven-volume set (not all published yet)
- publib.boulder.ibm.com/infocenter/zoslnctr/v1r7/index.jsp
 - z/OS basic skills information center



IBM – z/OS Education

- z/OS basic skills information center

The screenshot shows the IBM z/OS basic skills information center website in a Mozilla Firefox browser window. The browser title is "z/OS basic skills information center - Mozilla Firefox". The address bar shows the URL "http://publib.boulder.ibm.com/infocenter/zoslnctr/v1r7/index.jsp". The website features the IBM logo and a navigation menu with links for Home, Products, Services & solutions, Support & downloads, and My account. A search bar is located at the top right. The main content area is titled "Problem management on z/OS" and includes an "Introduction" section. The left sidebar contains a "Contents" menu with various topics, including "Problem management on z/OS" which is currently selected. The main content area includes a "Previous topic" link, a "Next topic" link, and a "Glossary" link. The "Introduction" section contains text explaining the purpose of the document and providing links to "Common tools for problem determination" and "Diagnosis information for z/OS base elements and features". The bottom status bar shows "Transferring data from publib.boulder.ibm.com..." and a progress indicator.

z/OS basic skills information center - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://publib.boulder.ibm.com/infocenter/zoslnctr/v1r7/index.jsp

United States [change] Terms of use

IBM

Home Products Services & solutions Support & downloads My account

Search: GO Search scope: All topics

Contents

- Home
- z/OS concepts
- Application programming on z/OS
- Networking on z/OS
- Problem management on z/OS**
 - Introduction
 - Common tools for problem determination
 - Diagnosing commonly encountered problems
 - Diagnosing an abend
 - Diagnosing a system hang or wait state
 - Diagnosing a job or subsystem hang
 - Diagnosing a loop
 - Diagnosing an output problem
 - Diagnosing a performance problem
 - Diagnosis information for z/OS base elements and fea
 - Reporting problems to IBM
 - Problem diagnostic worksheet
- Security on z/OS
- System programming on z/OS
- Online workloads for z/OS
- Interactive courses
- Glossary of z/OS terms and abbreviations
- Help for the information center
- Contact z/OS
- ibm.com: About IBM - Privacy - Contact

Problem management on z/OS

Previous topic | [Next topic](#) | [Glossary](#) | [Contact z/OS](#) | [PDF](#)

Introduction

If a problem occurs on z/OS, the information in this document can help you determine what happened, why it happened, and how to find the information you need to locate a fix or report the problem to IBM®.

This document can also help you avoid problems, locate diagnosis information in the z/OS® library, and find specific information on tools and service aids. For details, see:

- [Common tools for problem determination](#)
- [Diagnosis information for z/OS base elements and features.](#)

This section covers the following topics:

- [Overview of problem resolution](#)
- [Gathering diagnosis data](#)
- [Problem categories](#)
- [Searching problem reporting databases](#)
- [Extracting problem symptoms and search arguments](#)
- [Formats for symptoms](#)
- [Determining the level of z/OS](#)

Transferring data from publib.boulder.ibm.com...



IBM – z/OS Education

- www.ibm.com/systems/z/about/charter/skills_coursematerials.html
 - Academic Initiative course materials
 - z/OS basics
 - ISPF
 - Assembler language
 - JCL
 - VSAM
 - z/OS UNIX
- publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp
 - IBM Education Assistant
 - z/OS
 - Communications Server
 - Other products

IBM – z/OS Components & Products

- www.ibm.com/storage/dfsor/
 - DFSORT
 - Important maintenance
 - Documentation
 - Downloads
- www.ibm.com/servers/eserver/zseries/zos/unix/
 - UNIX System Services
 - Ported Tools for z/OS
 - **OpenSSH**
 - **xvfb**
 - **Perl**
 - Tools and Toys
 - Presentations
 - Contact z/OS UNIX



IBM – z/OS Components & Products

- www.ibm.com/software/network/commserver/zos/
 - Communications Server
- www.ibm.com/servers/eserver/zseries/software/java/
 - Java on z/OS
- www.ibm.com/servers/eserver/zseries/zos/wlm/
 - Workload Manager
 - Presentations and tutorials
 - Free tools
 - Frequently Asked Questions (FAQ)
 - Feedback

IBM – z/OS Components & Products

- www.ibm.com/servers/eserver/zseries/zos/rmf/
 - RMF (Resource Measurement Facility)
 - News and newsletters
 - Downloads
 - Presentations
 - Contact RMF
- www.ibm.com/software/htp/cics/
 - CICS
- www.ibm.com/software/data/db2/zos/
 - DB2

IBM – z/OS Components & Products

- www.ibm.com/software/data/ims/
 - IMS
- www.ibm.com/software/integration/wmq/
 - WebSphere MQ (MQSeries)
- www.ibm.com/systems/z/pso/index.html
 - Parallel Sysplex
- www.ibm.com/servers/eserver/zseries/software/sa/
 - Tivoli System Automation
- www.ibm.com/software/websphere/
 - WebSphere

IBM – z/OS Components & Products

- www.s390.ibm.com/products/le
 - Language Environment (LE)
- www.ibm.com/software/awdtools/ispf/
 - ISPF
- www.ibm.com/servers/eserver/zseries/zos/racf/
 - RACF
 - News
 - Downloads
 - Publications and presentations



IBM – z/OS Technical Support

- www.ibm.com/servers/eserver/support/zseries/zos/index.html
 - Search zSeries technical support (APAR Search)
 - Search all technical support
 - Red Alerts
 - View
 - Subscribe
 - ShopzSeries
 - Downloads
 - PUTDOC
 - TRSMAIN
 - Health Checker for z/OS and Sysplex
 - Migration Checker (New!)
 - Many other links
- www.ibm.com/servers/eserver/zseries/zos/bkserv/lookat/
 - LookAt facility for messages

IBM – Planning and Sizing

- www.ibm.com/servers/eserver/zseries/cfsizer/
 - CFSizer (Coupling Facility size estimation)
- www.ibm.com/servers/eserver/zseries/lspr/
 - LSPR (Large System Performance Reference)
 - z/OS 1.6 (Single and multiple images)
 - z/OS 1.4
 - OS/390 2.10
 - Older versions...
- www.ibm.com/servers/eserver/zseries/srm/
 - Processor characteristics
 - Version codes (STIDP output)
 - SRM constants

IBM – Planning and Sizing

- www.ibm.com/support/techdocs/atmastr.nsf/PubAllNum/PRS268
 - SOFTCAP
 - PC-based tool
 - Project processor changes when migrating
 - Newer Levels of Software
 - 31-bit to 64-bit Mode
- www.ibm.com/support/techdocs/atmastr.nsf/WebIndex/PRS1381
 - zPCR (System z Processor Capacity Reference)
 - Windows-based tool / incorporates LSPR values
 - Project processor capacity changes
 - Useful when upgrading processors

IBM – Planning and Sizing

- www.ibm.com/systems/z/zaap
 - zAAP Processor Resources
 - White papers and technical documents
 - Frequently Asked Questions (FAQ)
 - Links to other resources
- www.ibm.com/systems/z/ziip
 - zIIP Processor Resources
 - Description of workloads that will benefit
 - Installation hints
 - White papers and technical documents
- www.ibm.com/soa
 - Service-Oriented Architecture (SOA)

IBM – Software Pricing

- www.ibm.com/servers/eserver/zseries/swprice/
 - Software pricing options
 - WLC (Workload License Charges)
 - EWLC (Entry Workload License Charges)
 - zNALC (System z New Application License Charges)
 - Others...
 - Pricing tools
 - Sub-capacity planning tool
 - Sub-capacity reporting tool (SCRT)
 - Value unit converter tool



IBM – Magazines

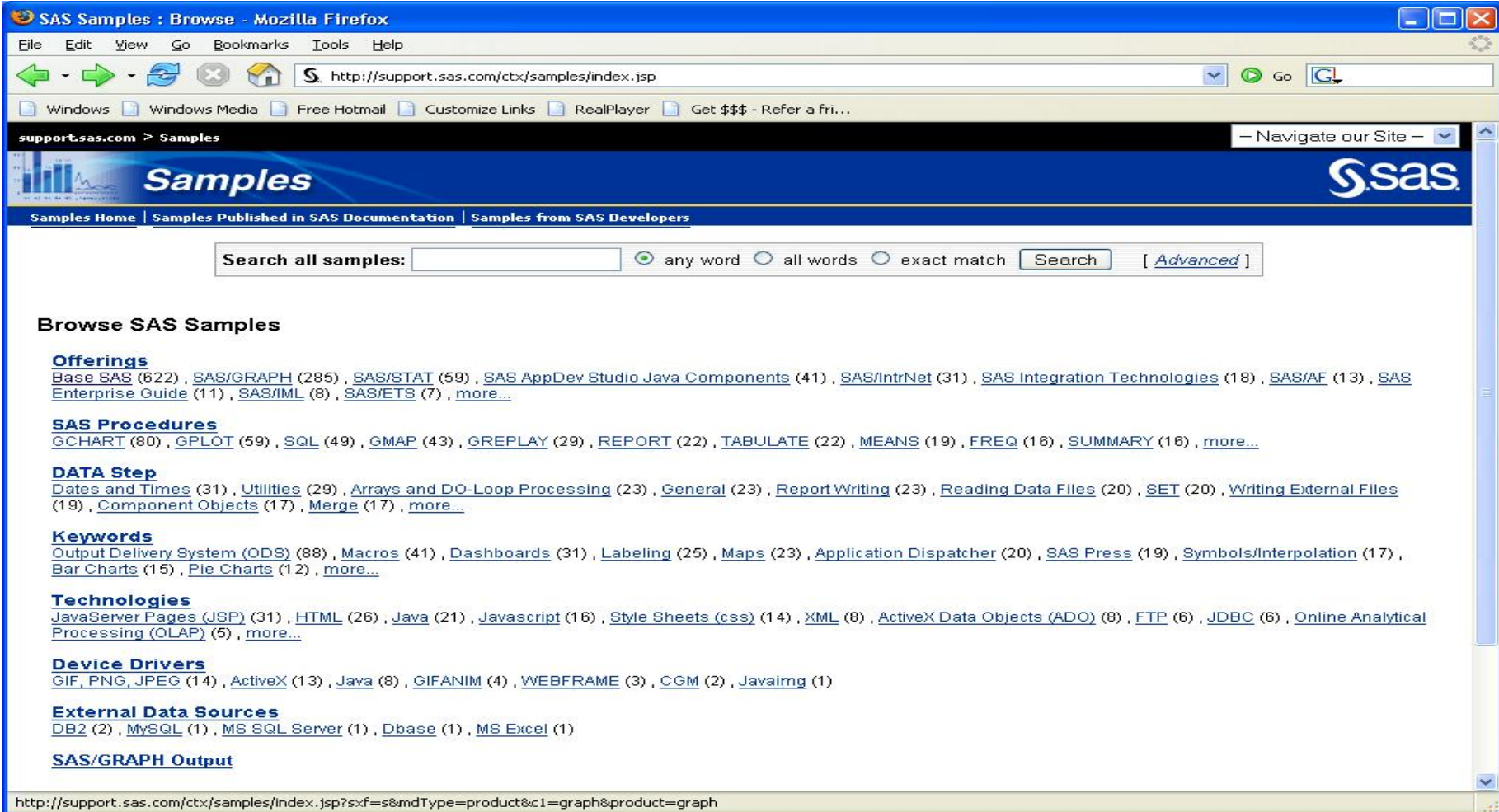
- www.research.ibm.com/journal/
 - IBM Systems Journal
 - IBM Journal of Research and Development
- www.ibm.com/software/os/zseries/newsletter/
 - The Mainstream (electronic)
- www.ibm.com/s390/os390/bkserv/hot_topics.html
 - Hot Topics newsletter
 - Read online
 - Order hardcopy

Vendor Resources – SAS

- www.sas.com or support.sas.com
 - SAS Institute / SAS product support
 - Technical notes and tips
 - Sample SAS code
 - User forums
 - User group locator
 - support.sas.com/sassamples/archive.html?ETS=4756&PID=123632
 - Technical tips archive
- www.sys-seminar.com
 - System Seminar Consultants (SAS Training)
 - Publications
 - *The Missing Semicolon*
 - SAS papers and tutorials

Vendor Resources – SAS

- Sample SAS code



The screenshot shows a Mozilla Firefox browser window displaying the SAS Samples website. The address bar shows the URL `http://support.sas.com/ctx/samples/index.jsp`. The page features a search bar with the text "Search all samples:" and radio buttons for "any word" (selected), "all words", and "exact match". Below the search bar, there are several categorized lists of sample code:

- Offerings**
[Base SAS](#) (622), [SAS/GRAPH](#) (285), [SAS/STAT](#) (59), [SAS AppDev Studio Java Components](#) (41), [SAS/IntrNet](#) (31), [SAS Integration Technologies](#) (18), [SAS/AF](#) (13), [SAS Enterprise Guide](#) (11), [SAS/IML](#) (8), [SAS/ETS](#) (7), [more...](#)
- SAS Procedures**
[GCHART](#) (80), [GPLOT](#) (59), [SQL](#) (49), [GMAP](#) (43), [GREPLAY](#) (29), [REPORT](#) (22), [TABULATE](#) (22), [MEANS](#) (19), [FREQ](#) (16), [SUMMARY](#) (16), [more...](#)
- DATA Step**
[Dates and Times](#) (31), [Utilities](#) (29), [Arrays and DO-Loop Processing](#) (23), [General](#) (23), [Report Writing](#) (23), [Reading Data Files](#) (20), [SET](#) (20), [Writing External Files](#) (19), [Component Objects](#) (17), [Merge](#) (17), [more...](#)
- Keywords**
[Output Delivery System \(ODS\)](#) (88), [Macros](#) (41), [Dashboards](#) (31), [Labeling](#) (25), [Maps](#) (23), [Application Dispatcher](#) (20), [SAS Press](#) (19), [Symbols/Interpolation](#) (17), [Bar Charts](#) (15), [Pie Charts](#) (12), [more...](#)
- Technologies**
[JavaServer Pages \(JSP\)](#) (31), [HTML](#) (26), [Java](#) (21), [Javascript](#) (16), [Style Sheets \(css\)](#) (14), [XML](#) (8), [ActiveX Data Objects \(ADO\)](#) (8), [FTP](#) (6), [JDBC](#) (6), [Online Analytical Processing \(OLAP\)](#) (5), [more...](#)
- Device Drivers**
[GIF, PNG, JPEG](#) (14), [ActiveX](#) (13), [Java](#) (8), [GIFANIM](#) (4), [WEBFRAME](#) (3), [CGM](#) (2), [Javaimg](#) (1)
- External Data Sources**
[DB2](#) (2), [MySQL](#) (1), [MS SQL Server](#) (1), [Dbase](#) (1), [MS Excel](#) (1)
- SAS/GRAPH Output**

The browser's status bar at the bottom shows the URL: `http://support.sas.com/ctx/samples/index.jsp?sf=s8mdType=product&c1=graph&product=graph`

Vendor Resources

- www.perfassoc.com
 - Performance Associates (Dr. Pat Artis)
 - I/O performance and technology
 - Published papers
- www.mxg.com
 - MXG Product (Dr. Barry Merrill)
 - Presentations, papers, and MXG newsletters
 - Contributed programs
 - Read/subscribe MXG-L discussion group
 - The ButtonMan collection

Vendor Resources

- www.mainstar.com
 - Mainstar Software
 - Storage topics (VSAM, Catalogs, HSM)
 - Technical articles
 - Links to Redbooks
 - Read/subscribe to monthly e-newsletter
- www.trainersfriend.com
 - The Trainer's Friend
 - Introductory materials (z/OS, UNIX, Mainframes)
 - Tutorials and presentations
 - Sample code

Vendor Resources

- www.epstrategies.com
 - Enterprise Performance Strategies (Peter Enrico)
 - Presentations (most require registration)
 - WLM to HTML conversion tool
- www.sherkow.com
 - I/S Management Strategies (Al Sherkow)
 - Papers and presentations (some require registration)
 - LPAR pricing discussion group
- www.lauraknapp.com
 - Laura Knapp (IBM)
 - Networking presentations (60+)

Vendor Resources

- www.watsonwalker.com
 - Watson & Walker
 - Sample TUNING Letter issues
 - SHARE presentations
 - Cheryl’s Hot Flashes
 - Articles
 - Performance tuning and capacity planning
 - Quickstart service policy
 - SMF reference summary
 - Read/subscribe to “Cheryl’s List” e-newsletter
- Other vendor resources
 - Google vendor name or see SHARE pocket guide

Other – Tools, Tips & Freeware

- www.cbttape.org
 - Maintained by Sam Golob (and Sam Knutson)
 - Includes contents of the former “CBT Tape”
 - Hundreds of files of MVS freeware and sample code
 - Available on magnetic tape or CD-ROM too
 - Contributions welcomed
 - Links to many other useful z/OS sites
 - Right-hand side of home page
- www.cs.niu.edu/~mstack/share/
 - Assembler Boot Camp / Macro Boot Camp

Other – User Groups (free content)

- www.share.org (SHARE)
 - Proceedings (most recent conference is free)
 - Program and Project details
 - Bit Bucket archives (under MVS Program)
 - Industry news
 - Survey results
- www.cmg.org (Computer Measurement Group)
 - Award-winning papers
 - Regional CMG groups
 - Calendar of events
 - Vendor links

Other – Magazines

- www.ibmssystemsmag.com
 - IBM Systems Magazine
 - i5 Business Solutions
 - Open Systems
 - Mainframe
 - Total Storage
- www.zjournal.com
 - z/Journal (published by Bob Thomas)
- www.infosecuritymag.com
 - Information Security magazine

Other – Useful Tools

- www.passkeeper.com
 - PassKeeper
 - Free Windows-based password management tool
 - Uses an encrypted database and master password
- passwordsafe.sourceforge.net
 - Password Safe
 - Similar to Passkeeper
- whois.ibm.com
 - Locate IBM employees
 - Returns city, telephone, and e-mail address
 - Some restrictions

Other – Useful Tools

- www.dtssoftware.com/download_home.htm
 - Storage Administrator pocket reference (30 pages)
 - Download as PDF file
 - From DTS Software
- www.timeanddate.com
 - Useful time and date functions
 - Generate calendars by year and country
 - Determine time in various locations
 - Calculate the difference between two dates
- www.acronymfinder.com or www.acronyms.ch
 - Find the meaning of acronyms

Discussion Groups

- bama.ua.edu/archives/ibm-main.html
 - IBM-Main (z/OS-related topics)
 - 100-150 messages per day
- www.marist.edu/htbin/wlvindex?mvs-oe
 - MVS-OE (z/OS UNIX)
 - 10-50 messages per day
- www.mxg.com/frame_mxgl.asp
 - MXG-L (MXG product / SMF topics)
 - 10-20 messages per day

Discussion Groups

- listserv.uga.edu/archives/racf-1.html
 - RACF-L (RACF and security topics)
 - 10-50 messages per day
- www.marist.edu/htbin/wlvindex?CICS-L
 - CICS-L (CICS topics)
 - 10-50 messages per day
- www.marist.edu/htbin/wlvindex?IBMTCP-L
 - IBMTCP-L (IBM TCP/IP topics)
 - 10-30 messages per day

Discussion Groups

- www.marist.edu/htbin/wlvindex?TSO-REXX
 - TSO-REXX (z/OS REXX topics)
 - 5-20 messages per day
- www.listserv.uga.edu/archives/asm370.html
 - ASSEMBLER-LIST (z/OS Assembler)
 - 5-20 messages per day
- listserv.nd.edu/archives/ispf-l.html
 - ISPF-L (ISPF topics)
 - 5-20 messages per day

References

- *Cheryl Watson's TUNING Letter*
 - Most links taken from previous issues
 - Many new links provided in each issue
- *Fully Wired Hot Topics Charm City*
 - Sam Knutson
 - Session 2861 in Baltimore
- *A System Programmer Productivity Toolbag*
 - Bette Brody
 - Session 2885 in Baltimore

Thanks for attending.
See you in San Diego!