Gain insight into CICS performance with comprehensive analysis and flexible reporting

IBM CICS Performance Analyzer for z/OS, Version 3.1

Highlights

- Comprehensive CICS® performance analysis and reporting

- Ability to tailor reports to meet specific analysis requirements

- Historical database that enables trending and capacity planning

- Insight into third-party database usage when used with Tivoli® OMEGAMON® XE for CICS

- Easy-to-use interface and documentation

- Help eliminate system bottlenecks

- Faster resolution of online problems

- Ability to evaluate and proactively tune CICS system efficiency to increase system performance

- Uncover trends that can lead to poor performance and outages

New in this release

- CICS Transaction Server V4.1 support

- CICS Transaction Gateway for z/OS V7.2 support

- Support for the IBM® CICS Explorer™, "The new face of CICS" (see Figure 1)

- Statistics alert reporting to highlight occasions when key CICS statistics exceed specified thresholds

- Support for resource signatures to indicate changes to resource definitions

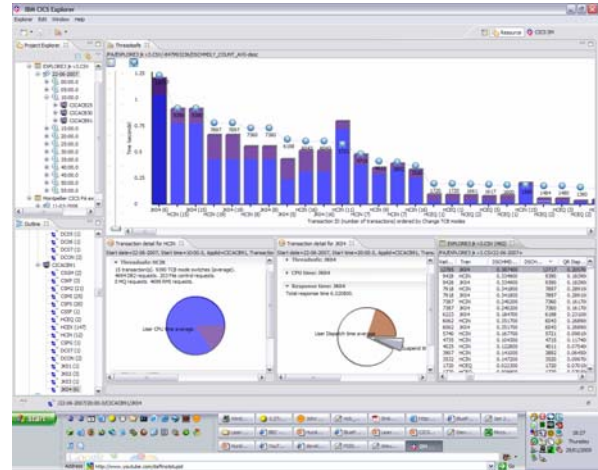- User requirements and other enhancements

Figure 1 Performance metrics in CICS Explorer

As your business strives to compete in a challenging economic environment, your IT teams are under pressure to operate their systems at peak levels and within budgets. Agile IT strategies such as event processing, service-oriented architecture, and Web 2.0 place even greater demands on your mission-critical IBM CICS applications, increasing the risk of failure to comply with service-level commitments. To mitigate this risk while keeping control over costs, your IT processes should include performance management to help ensure continued customer satisfaction.

IBM CICS Performance Analyzer for z/OS supports all of the IT service management processes that require a good understanding of CICS performance, from capacity planning and problem management to service-level management and system tuning.

Whether you plan, build, deploy, or manage complex mainframe CICS applications, CICS Performance Analyzer's ease of use, level of detail and flexibility make it easy for you to find new ways to improve CICS system performance, reduce maintenance costs and strategically plan IT investments.

Understand and optimize CICS performance

Performance management disciplines and the tools that support them are key components of successful IT service delivery processes. Good performance tools turn data into information and provide your team with the understanding they need to assess the impact of change, spot trends that might lead to poor CICS performance, and take rapid action to minimize any downtime or performance degradation, if problems do occur. Performance tools also contribute to optimizing IT-resource usage and help you meet today's service-level agreements while supporting capacity planning exercises to satisfy future demands.

IBM CICS Performance Analyzer for z/OS is an offline performance analysis tool that combines ease of use, flexibility and the level of detail required to meet the performance challenges of businesses today. Designed to accurately detail how your enterprise uses CICS resources, CICS Performance Analyzer provides detailed reports about all aspects of CICS system and application performance, while helping you collect and manage historical performance data. It enables CICS system programmers and performance specialists to tailor these reports to access the critical data they need, quickly. Using CICS Performance Analyzer, you gain the insight you need to manage CICS systems effectively, and enhance their function and efficiency.

With CICS Performance Analyzer, you can:

- *Easily produce regular reports for ongoing performance management.*

- *Run performance reports to analyze fluctuations in transaction volume*

- *Identify the effect of new applications on your CICS systems.*

- *Improve the productivity of CICS systems by knowing when to increase resource availability during high demand cycles.*

- *Estimate system and resource requirements to prepare for enterprise growth.*

- *Achieve faster resolution of online problems by quickly determining what caused the problems that were identified by your online performance monitor.*

CICS Performance Analyzer can help you discover new ways to improve CICS system performance, lower maintenance costs and strategically plan IT investments.

Complete view of your CICS systems performance

CICS Performance Analyzer reports are designed to enable comprehensive analysis of your CICS systems — with a detailed overview of transaction volume and performance — so that you can evaluate resource usage and forecast demands accurately. The product's analysis programs use the performance and accounting data written to IBM z/OS® System Management Facilities (SMF) data sets to generate reports.
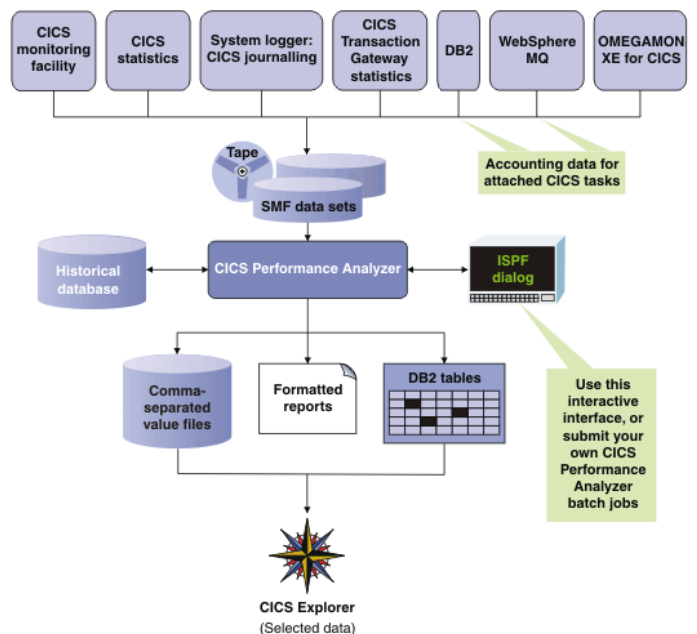

Figure 2 CICS Performance Analyzer provides consolidated reporting of all CICS-related metrics

This data includes that collected by CICS Monitoring Facility (including IBM IMS™ data), CICS Statistics and CICS Server Statistics, CICS Transaction Gateway for z/OS, Version 7.2 statistics, IBM DB2® Universal Database™ for z/OS, IBM WebSphere® MQ, and the z/OS System Logger. CICS Performance Analyzer also includes support for the new and updated performance metrics and statistics introduced in CICS Transaction Server, Version 4.1.

CICS Performance Analyzer collects data about a wide variety of CICS system and application resource usage, including:

- *New! Atom feeds*
- *New! Business Events*
- *New! Data Mapping Conversion and Web Services Addressing*
- *New! Resource signatures*
- *Transactions and programs*
- *Updated! Web services*
- *TCB (Task Control Block) switches for threadsafe analysis*
- *Terminals and Basic Mapping Support*
- *Files*
- *Temporary Storage and Transient Data*
- *Journal and log streams*
- *Secure Sockets Layer (SSL)*
- *Updated! CICS Web support*
- *Channel usage by programs and containers*
- *Virtual storage*
- *Java™ Virtual Machine (JVM)*

CICS Performance Analyzer also supports the SMF 112 records generated by Tivoli OMEGAMON XE for CICS, and the user fields added by OMEGAMON XE for CICS into SMF 110 performance records created by the CICS Monitoring Facility (CMF). With this data, you can produce CICS Performance Analyzer

reports that detail your applications' use of third-party databases, such as Adabas, CA-Datacom, SUPRA, CA-IDMS. You can also use the data to report on those transactions that have exceeded Tivoli OMEGAMON XE resource limiting thresholds. See Figure 2 for a diagrammatic representation of the information flow in CICS Performance Analyzer.

Visualize performance data with the CICS Explorer

New in this release is a plug-in for the IBM CICS Explorer, the new face of CICS, to help you analyze CICS performance data more easily. The CICS Explorer enables users with broader and less-specialized skills to access the power of CICS PA, and deliver additional value when used in conjunction with other CICS tools.
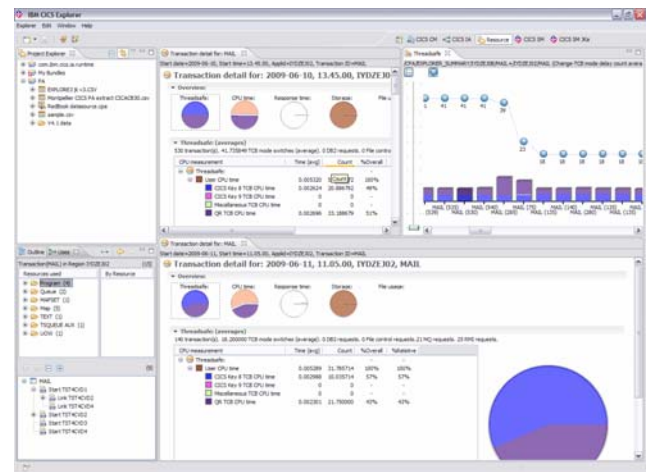

Figure 3 CICS Explorer used for threadsafe analysis

The CICS Explorer plug-in provides intuitive tabular and graphical views with access to over 100 CICS performance metrics, enabling analysis of CPU, response time, TCB usage for threadsafe analysis, storage, VSAM file, DB2, and WebSphere MQ usage. Contextual linkage is available from CICS Explorer and CICS Configuration Manager resource views to tabular and graphical performance views, and from performance views to relationship data provided by CICS Interdependency Analyzer.

Build reports and extract data

CICS Performance Analyzer comes with more than 170 standard reports designed to meet your reporting and analysis objectives. You can easily tailor these reports to your specific requirements or create your own reports using an easy-to-follow Interactive System Productivity Facility (ISPF) dialog. The ISPF dialog also enables you to view statistics online, and create and manage a historical database for trend analysis and capacity-planning purposes. You can also submit your report requests as part of a job-scheduling or automation process.

Figure 4 The report set menu allows you to select reports and extracts easily.

Using the information produced by just a few of the many standard CICS Performance Analyzer reports (see Figure 4 The report set menu allows you to select reports and extracts easily.), you can:

- *Track transaction performance across CICS Transaction Server, DB2, and IMS environments from one, easy to-read report.*

- *Easily identify potential sources of performance bottlenecks using performance wait-analysis reports.*

- *Analyze CICS, CICS Server, and CICS Transaction Gateway statistics online.*

- *Use distribution reports to help you understand the range of a transaction*

response time for performance problem determination.

- *Evaluate the performance of IP Interconnectivity (IPIC), WebSphere MQ and other new SMF performance data introduced in IBM CICS Transaction Server, Version 4.1*

- *Analyze CICS systems' use of external subsystems, including DB2 and IMS databases.*

- *Use z/OS system-logger reports in conjunction with CICS logger reports to provide a comprehensive analysis of the log-stream activity for all your CICS systems.*

- *Understand how well your CICS transactions are meeting your response-time goals using IBM z/OS Workload Manager reports.*

Using report sets, report forms and object lists gives you the flexibility to tailor the format and content of your reports and data extracts. You can report performance data by individual or grouped transactions, by application or by terminal. You can group similar transaction data — for example, all transactions from a specific application — to deliver quick, relevant processing and report generation.

Consolidated, transaction-group reports help you gain a better perspective of the whole system. You can also select and sort records, and customize and format reports to fit your preferences. With CICS Performance Analyzer, you get relevant, useful information presented in a way that improves your ability to plan and communicate your resource needs effectively.

This release also introduces *statistics alert reporting*, which automates the generation of batch reports that highlight occasions when key CICS statistics exceed specified thresholds. You define the conditions that interest you in terms of CICS Transaction Server statistics or CICS Transaction Gateway statistics field

values. You can then use those conditions to report on statistics stored in SMF files or Historical databases.

IBM offers extensive online help and detailed documentation for CICS Performance Analyzer, making it easy to tailor your reports — such as setting format and content — to present the information you need, when you need it.

You can also select a particular subset of SMF data and use it as input to CICS Performance Analyzer to enable faster processing. CICS Performance Analyzer enables you to export relevant data conveniently to your personal computer in CSV (comma separated values) format to use and analyze in applications such as IBM CICS Explorer, IBM Lotus® Symphony, IBM Lotus Approach, and Microsoft® Excel.

Discover CICS performance trends

CICS Performance Analyzer provides a powerful historical database (HDB), which lets you accumulate the performance data you want at the level of detail you need for reporting over long periods, without requiring large amounts of storage or processing time. You can then produce reports from the HDB instead of the SMF data sets. You can also extract selected performance data from the HDB to CSV files or to DB2 tables for use by the CICS PA plug-in for the CICS Explorer (see Figure 5).

This flexible facility helps you collect and manage historical performance data for your CICS systems and enables you to retrieve and analyze historical data easily.

The CICS Performance Analyzer historical database function provides:

- *Short-term history data, detailing individual transaction performance to use in performance problem analysis.*

- *Long-term history data summarized over time, which can be used for trend analysis and capacity planning.*

- *Statistics history data for use in performance analysis and reporting.*

- *A powerful and flexible definition facility for historical data repositories.*

- *Comprehensive reporting facilities.*

- *A facility to optionally export and load historical data into DB2 databases to analyze and generate reports, using DB2 reporting tools, such as IBM Query Management Facility.*

A SupportPac, CP12, is available from the CICS Performance Analyzer support Web site (ibm.com/cics/panaly/support/) to show how you can easily export CICS statistics or performance data to a DB2 table or a comma-separated value (CSV) file. The SupportPac also provides sample macros for using that data to create reports and charts using PC-based tools.
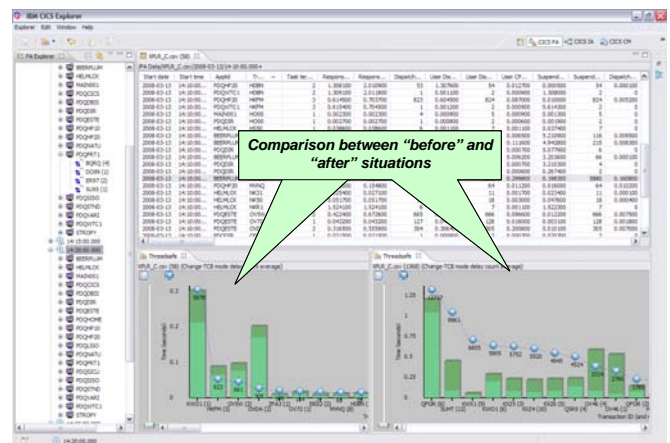

Figure 5 CICS PA plug-in showing before and after views

Evaluate and improve system performance

CICS Performance Analyzer facilitates cross-system performance evaluation. You can analyze CICS systems that employ multi-region operation (two or more discrete CICS systems communicating), Advanced Program-to-Program Communication (APPC), IP Interconnectivity (IPIC) and DB2 subsystems. And by identifying exception events that cause

performance degradation, CICS Performance Analyzer can help you reduce maintenance costs and save time.

An online statistics-reporting facility is available through the CICS Performance Analyzer ISPF dialog. This facility enables you to conduct comprehensive analysis and reporting of CICS statistical data either directly from an unloaded System Management Facilities (SMF) data set or from a CICS Performance Analyzer historical database (HDB). The online statistics-reporting facility includes the following features:

- *Tabular reporting, sorting by field (column)*

- *Forms you can use to design personalized reports*

- *Hyperlinks you can use to jump directly to related reports*

- *A print facility, either to a data set or to SYSOUT*

CICS Performance Analyzer complements your online monitoring tools, like IBM Tivoli® OMEGAMON XE for CICS. You can respond quickly to online performance issues, because CICS Performance Analyzer can drill down deeply into CICS performance data to identify the cause of the problem. CICS Performance Analyzer also complements the enterprise-wide, historical-performance capabilities of IBM Tivoli Decision Support for z/OS with more deep and detailed CICS performance data. And you can use these tools and capabilities to focus on CICS performance-problem determination, bottleneck analysis, tuning and capacity planning.

IBM System z® tools — your pathway to success

CICS Performance Analyzer is a part of an extensive portfolio of IBM System z tools, including CICS tools, problem determination (PD) tools, application development tools, and data management tools, supporting the entire application life cycle, which helps you to build, test, deploy and manage enterprise solutions. As a result, you can make the most of your System z platform investments and take advantage of the latest functions introduced in CICS Transaction Server, Version 4.1.

The comprehensive portfolio of CICS tools offers you the opportunity to realize the full potential of your CICS systems, whatever your business strategy. You have the potential to maintain and manage your core CICS applications more easily and at a lower cost. CICS tools enhance IBM service management initiatives to optimize IT processes, maximize CICS system availability, reduce total cost of ownership (TCO), and transform CICS applications to achieve greater business flexibility. Moreover, in today's world of increasing governance, CICS tools can help to meet growing demands for reporting and audit compliance, and improve control over CICS runtime environments.

All IBM CICS, PD and application development tools support the latest releases of CICS Transaction Server, at date of publication, Version 4.1.

For more information

To learn how you can enhance the performance of your CICS systems using CICS Performance Analyzer, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/cics/panaly

To learn more about other IBM CICS Tools, visit:

ibm.com/cics/tools

IBM CICS Performance Analyzer for z/OS, Version 3.1 at a glance

Hardware requirements

CICS Performance Analyzer V3.1 can run on any IBM System z machine on which a required operating system and other required software are installed and running.

Software requirements

CICS Performance Analyzer V3.1 requires System Modification Program/Extended (SMP/E) of the supported z/OS system for installation and maintenance.

CICS Performance Analyzer V3.1 operates with the following CICS configurations:

- CICS Transaction Server V4.1 (5655-S97)
- CICS Transaction Server V3.1 and V3.2 (5655-M15)
- CICS Transaction Server V2.3 (5697-E93)

The CICS Explorer is supported on the following platforms:

- Microsoft Windows® Vista
- Microsoft Windows XP (32-bit)
- Microsoft Windows Server 2003 and 2008 (32-bit)
- Red Hat Enterprise Linux V5 (Intel®) (32-bit)

The following products are also required:

- z/OS Version 1 Release 8 or later (contains SMP/E)
- z/OS Version 1 Release 8 DFSORT feature or later, or an equivalent sort product

For the CICS Performance Analyzer OMEGAMON XE for CICS SMF 112 reports, OMEGAMON XE for CICS V4.1 (5698-A58) is also required.

Compatibility: The ability to analyze CICS SMF 110 data from CICS Transaction Server V1.3 and V2.1 has been removed in this release of CICS Performance Analyzer.

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