IBM ®

Gain insight into CICS performance with comprehensive analysis and flexible reporting

IBM CICS Performance Analyzer for z/OS, Version 5.1

Highlights

- Comprehensive CICS® performance analysis and reporting

- Intuitive CICS Explorer® interface

- Over 250 customizable reports

- Transaction tracking and transaction profiling reports

- Trending and capacity planning with historical database

- Statistics and Performance alerts that flag early awareness of issues

- Faster problem resolution

- Elimination of system bottlenecks

- Evaluation and tuning of CICS system efficiency to improve system performance

- Ability to uncover trends that can lead to poor performance and outages

New in this release

- CICS TS V5.1 support, including support for new Application and Platform resources

- Plug-in enhancements:
  - Application centric view
  - Customizable sheet views
  - Suspend time analysis
  - Improved navigation
  - Data filtering
  - Support for SSL connection

- Batch statistics reporting for CICS TG

- Statistics filtering

- CPU totals on MQ reports

- Performance improvements when processing large volumes of SMF data

Understand and optimize CICS performance

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, Web 2.0, and dynamic scripting 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.
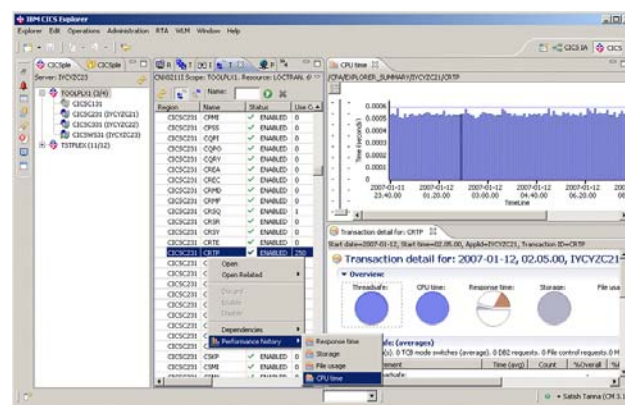

Figure 1 Performance metrics in CICS PA plug-in

IBM CICS Performance Analyzer for z/OS® V5.1 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.

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 and views of all aspects of CICS system and application performance, while helping you collect and manage historical performance data.

CICS system programmers and performance specialists can tailor these reports to access the critical data they need, quickly. Along with application developers, they can all benefit from the intuitive selection, tabular, and graphical views when using the CICS PA plug-in for the CICS Explorer (see Figure 1). CICS Performance Analyzer, helps you gain the insight you need to manage CICS systems effectively, and enhance their function and efficiency.

With CICS Performance Analyzer, you can:

- 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.

- Avoid online problems by using alerts to highlight developing performance issues.

- Give developers access to performance information with the CICS PA plug-in for the CICS Explorer.

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 and views 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.
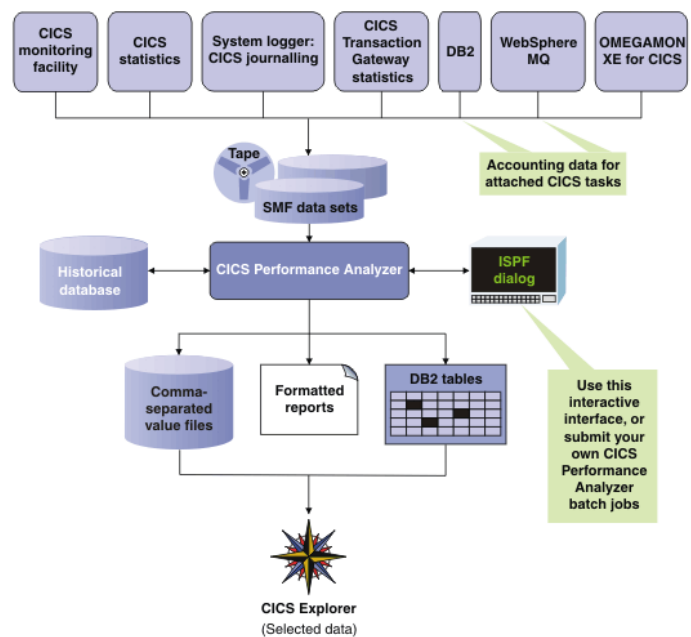

Figure 2 CICS Performance Analyzer provides consolidated reporting of all CICS-related metrics.

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 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 5.1. See Figure 2 for a diagrammatic representation of the information flow in CICS Performance Analyzer.

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

- Atom feeds
- Business events
- Channel usage by programs and containers
- CICS web support
- Data mapping conversion
- Files and databases
- Java Virtual Machine (JVM)
- Journal and log streams
- Resource signatures
- Secure Sockets Layer (SSL)
- Task control block (TCB)
- Temporary storage and transient data
- Terminals and basic mapping support
- Transactions and programs
- Virtual storage
- Web services and Web Services Addressing

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. 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, and CA-IDMS. You can also use the data to report on those transactions that have exceeded Tivoli OMEGAMON XE resource limiting thresholds.

Visualize performance with CICS Explorer

The CICS PA plug-in for the CICS Explorer has been greatly enhanced, to make it even easier for you to analyze your CICS performance data. The CICS Explorer enables users with broader and less-specialized skills to access the power of CICS Performance Analyzer, and deliver additional value when it is used in conjunction with other CICS tools.
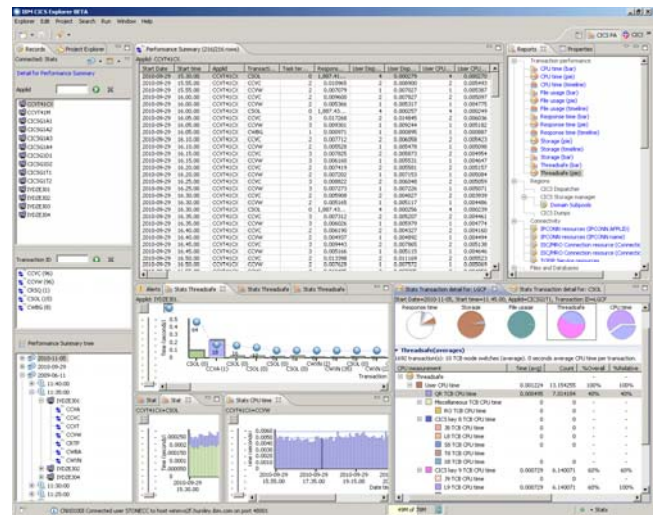

Figure 3 CICS PA plug-in with linked performance views

The CICS PA plug-in provides intuitive navigators, selectors, and tabular and graphical views with access to over 150 CICS performance metrics. Over 80 statistics classes are also provided, giving you even more insight into the performance of your CICS system, enabling analysis of CPU, response time, TCB usage for threadsafe analysis, storage, VSAM file, DB2, and WebSphere MQ usage, and many other resources. You can use statistics alerts to find out when key metrics start to get out of line.

Links between statistics alerts and the related statistics records, combined with built-in contextual links to related classes, help you find out what's going on more quickly. For example, you can link directly from a specific Transaction Class record to all transaction records for that class (see Figure 3). Statistics records can also be used to provide context when linking to performance records.

Contextual linkage between the CICS Explorer and the plug-ins for CICS Performance Analyzer, CICS Configuration Manager, and CICS Interdependency Analyzer provides a rich, integrated, problem-solving experience.

Build reports and extract data

CICS Performance Analyzer comes with more than 250 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.

You can also generate reports as PDF files, making it even easier to share reports with other users (see Figure 4).
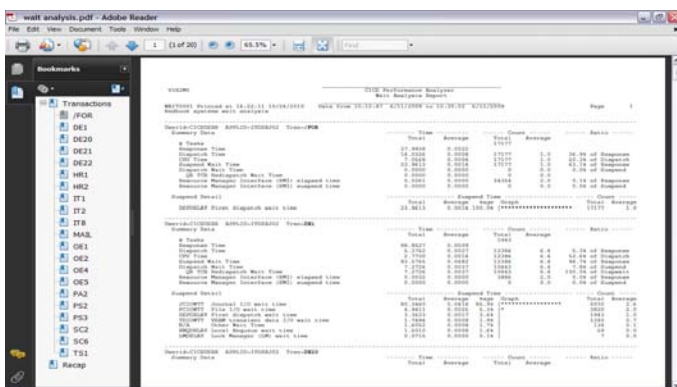

Figure 4 Sample PDF with bookmarks for each transaction

Using the information produced by just a few of the many standard CICS Performance Analyzer reports (see Figure 5), you can:

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

- Identify potential sources of performance bottlenecks using performance wait-analysis reports.

- Analyze CICS, CICS Server, and CICS Transaction Gateway statistics online and with the CICS PA plug-in.

- Use distribution reports to help you understand the range of a transaction response time for performance problem determination.

- Evaluate the performance of CICS Applications and Platforms, introduced in IBM CICS Transaction Server, Version 5.1.

- 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.
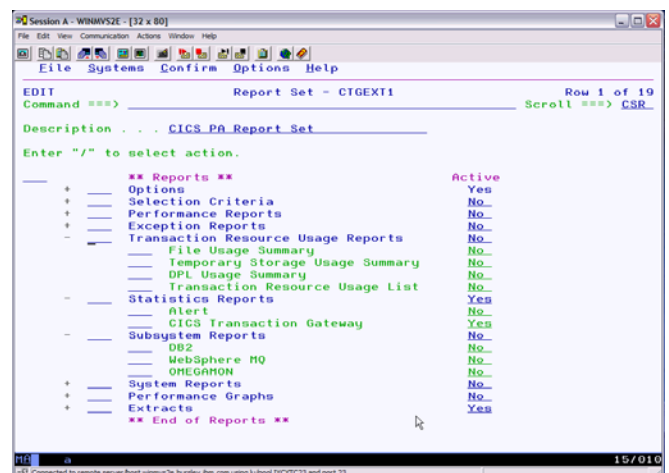

Figure 5 The report set menu allows you to select reports and extracts

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.

Performance and statistics *alert* reporting automates the generation of batch reports that highlight occasions when key CICS performance or statistics

metrics exceed specified thresholds. You define the conditions that interest you in terms of field values of CICS Transaction Server performance and statistics records, or CICS Transaction Gateway statistics records, and use those conditions to report on performance and statistics stored in SMF files or historical databases.

The CICS PA plug-in for the CICS Explorer includes selectors, navigators, and views to display over 80 statistics classes, grouped in more than 20 categories (see Figure 6).
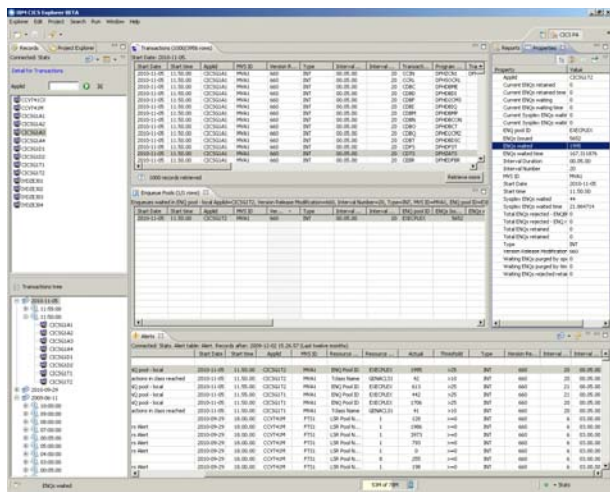

Figure 6 CICS PA plug-in with linked statistics views

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 the CICS PA plug-in for the CICS Explorer, or applications such as IBM Lotus® Symphony, and Microsoft Excel.

With the CICS PA plug-in you can quickly create CSV files from sub-sets of your DB2 data sources, to analyze your CICS system off-line, share data with other users, or to provide a benchmark for comparison.

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.

Discover CICS performance trends

CICS Performance Analyzer provides a powerful historical database (HDB), which you can use to 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.

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 CSV file. The SupportPac also provides sample macros for using that data to create reports and charts using PC-based tools.

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), 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, such as 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.

CICS Tools — your pathway to success

CICS Performance Analyzer is one of the five core foundational CICS tools that exploit and augment the latest operational efficiency and service agility enhancements in CICS TS V5.1 in a way that positions you for the next transformational era in technology, moving towards a service delivery platform for cloud computing.

CICS Tools can help you to optimize your CICS resources and achieve greater capacity and improve the availability of your critical enterprise systems. Their powerful automation capabilities can speed service delivery, improve standardization, and reduce risk, while rich discovery, advanced visualization, and comprehensive reporting provide the insight needed to ensure that your applications run smoothly and changes are efficient and reliable.

Support for the application and platform resources introduced in CICS TS V5.1 help you to achieve value from the new version of CICS more quickly. The tools include modern interfaces integrated with CICS Explorer, helping both new and experienced IT personnel to be more productive with minimal training delay. Foundational enhancements continue to extend the tools capabilities in many areas.

The other core foundational CICS tools are:

- IBM CICS Deployment Assistant for z/OS V5.1
- IBM CICS Interdependency Analyzer for z/OS V5.1
- IBM CICS Configuration Manager for z/OS V5.1
- IBM CICS VSAM Recovery for z/OS V5.1

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

For hardware and software requirements for CICS Performance Analyzer, visit:

ibm.com/cics/panaly/requirements.html

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