IBM ®

IIBM CICS Performance Analyzer for z/OS V3.2

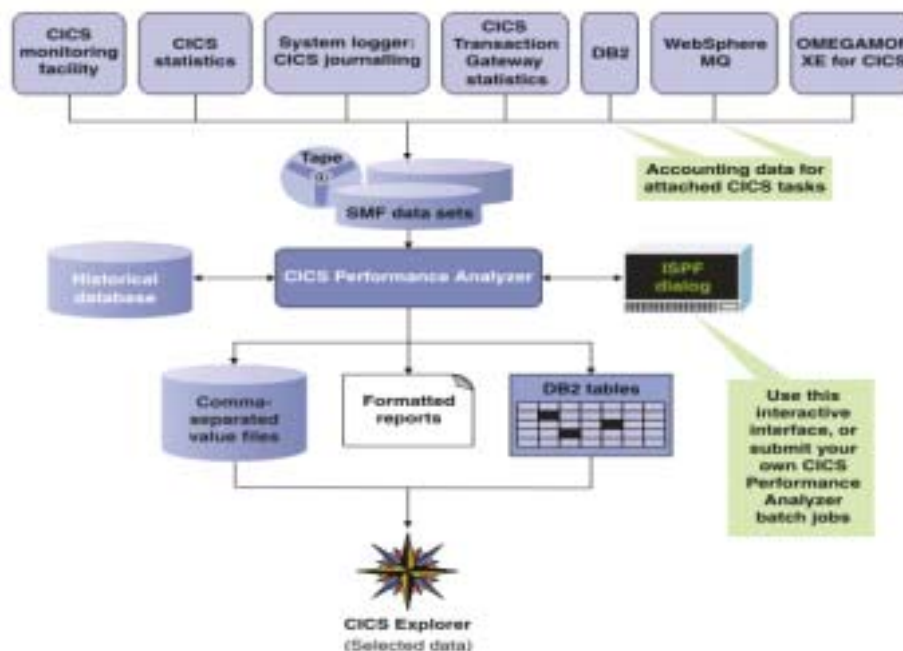## More information at: http:/ibm.com/cics/panaly

Technical Overview

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Architecture

CICS PA analyzes the SMF records created by the CICS Monitoring Facility (CMF), CICS Statistics, CICS Server Statistics, CICS Transaction Gateway Statistics, and related subsystems (including DB2, IMS, and WebSphere MQ) to produce a wide range of reports and extracts that can help you tune and manage your CICS systems.

In addition, CICS PA provides reports and extracts using the z/OS system logger data (SMF 88 records) and can also report on the SMF 112 records created by OMEGAMON XE for CICS.

IBM CICS Performance Analyzer for z/OS, Version 3.2 - Product Architecture

Reporting flexibility

CICS PA provides reports for all aspects of your CICS system activity and resource usage, including:

- Transaction reports that can summarize or detail all transactions processed and present the information in the format and order that you want.
- Transaction activity reports that can be tailored to produce a detailed and comprehensive analysis of transaction performance.
- CICS system and resource usage reports from the CICS statistics data that show the performance and utilization of your CICS systems and their resources, including reports for the CICS temporary storage, coupling facility data table, and named counter data sharing servers.
- Resource usage reports that show the performance and utilization of your CICS system resources by your CICS transactions, 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)
  - TCB (task control block)
  - Temporary storage and transient data
  - Terminals and basic mapping support
  - Transactions and programs
  - Virtual storage
  - Web services and Web Services Addressing
- Cross-system work reports that combine the CMF performance data from all of your CICS systems to help you evaluate the performance of Multi-Region Operation (MRO), IP interconnectivity (IPIC), and Advanced Program-to-Program Communication (APPC) transactions.
- Transaction resource usage reports that show, at a transaction-level, the individual file and temporary storage queue resources accessed by a transaction.
- Workload activity reports that show, at a glance, if the z/OS Workload Management (WLM) goals which you have set for your CICS transactions are being met.
- DB2 reports that use the DB2 Accounting (SMF 101 records) and WebSphere MQ reports that use the WebSphere MQ Accounting (SMF 116 records) to provide a detailed performance analysis of the CICS transactions that access DB2 and WebSphere MQ external subsystems.
- Performance Wait analysis reports that analyze the transaction activity by wait time. These reports summarize, by transaction ID, the resources that cause a transaction to be suspended, and highlight the CICS system resource bottlenecks that may be causing bad response times.
- Comprehensive extract capability that allows you to export transaction performance data to DB2 or your PC workstation for further analysis and graphical representation.
- External subsystem reports that show the performance and utilization of DB2, WebSphere MQ, and IMS Data Base Control (DBCTL) subsystems.
- List and summary reports that show application usage of third-party database management systems (DBMS) as monitored by OMEGAMON XE for CICS (SMF 112) records.
- CICS Transaction Gateway system and resource usage reports from the CICS TG statistics (SMF 111) records that show the performance and utilization of your CICS TG systems and their resources.

- Transaction group reports that combine the performance data of all transactions and produce a consolidated report for your Transaction Groups report.
- CICS Business Transaction Services (BTS) reports to help you evaluate your BTS application performance.
- Graphs that show, at a glance, transaction response time and the transaction processing rate.
- Exception reports that list and summarize the CICS Exception Events that impact the performance of your CICS systems.

CICS PA provides over 170 pre-defined report forms to enable these reports to be generated without the need to write complex report logic.

Historical database

The CICS PA historical database (HDB) provides a flexible and easy-to-use facility for collecting and managing historical performance data for your CICS system. The CICS PA HDB function provides:

- Short-term history data detailing individual transaction performance for use in performance problem analysis.
- Long-term history data, summarized over time, which can be used for trend analysis and capacity planning.
- A statistics-type HDB, which allows the collection of CICS statistics, CICS server statistics, and CICS TG statistics data.
- A powerful and flexible definition facility for the historical data repositories.
- Comprehensive reporting facilities.
- A facility to optionally load performance and statistics history data into DB2 for further analysis and reporting using DB2 reporting tools such as Query Management Facility (QMF).
- A facility to optionally extract performance and statistics history data into comma-separated-variable (CSV) format data sets. This allows the user to analyze both performance and statistics data off-host using a PC spreadsheet or database tool.
- Definition and management of the HDBs from the CICS PA Interactive System Productivity Facility (ISPF) dialog.

Transaction Profiling

The CICS PA transaction profiling report enables you to easily compare transaction performance between two time periods. For example:

- CICS or DB2 release migration when you need to ensure transaction performance is not degraded
- Application changes when you need to determine the impact of change on transaction performance
- Benchmark from last month when performance was good compared to yesterday when performance was sub-standard.

Easy-to-read and use reports: The report formatting capability of CICS PA allows you to tailor the format and content of your reports to meet your individual requirements. It is a powerful record selection and sorting capability that lets you request the information that you want, in the order that you want it.

ISPF user interface:

- Offers a menu-driven dialog to help you create, maintain, and submit report and extract requests
- Uses your customized CICS TS, CICS TG, DB2, WebSphere MQ, and z/OS System Logger definitions as a basis for the formatting of your report requests
- Supports, via batch commands, the request of reports and extracts for the experienced user
- Provides an easy-to-use form-based editor to help you design your own reports, extracts, and historical databases
- Offers instant access to detailed CMF field descriptions directly from the CICS Performance Guide
- Provides an online reporting facility for CICS statistics data either directly from an unloaded SMF data set or from a CICS PA HDB
- Provides an upgrade capability for quick migration to new releases of CICS TS
- Is CUA-compliant

New in CICS PA V3.2

CICS PA V3.2 includes a number of significant enhancements including:

- Capture statistics alerts in HDB
- CICS TS and CICS TG statistics data available through CICS Explorer™
- Support for CICS Transaction Gateway V8.0
- Easier data source set-up when using the CICS PA plug-in
- Output batch reports as Portable Document Format (PDF) files
- Documentation update: New CICS PA Getting Started Guide
- Housekeeping for DB2® data sources

Capture statistics alerts in HDB:

Statistics Alert reporting enables you to report on the statistics that match specified conditions. CICS PA now supports specifying an alert definition in the statistics HDB definition. You select the required Statistics reports to be collected in this HDB. When a CICS TS or CICS TG alert report is activated to collect in this HDB, you can use a new line action called AO (Activate Alert-only collection) to collect only the reports that related to this Alert.

"Alert only" reports are only collected if an Alert is triggered. You can collect records that trigger alert conditions in the CICS TS and CICS TG Alert reports, or restrict existing reports to only those records which triggered alert conditions, or you can do both. Where both the alert and the original report record are collected you can hyperlink between them by use of a PF key.

CICS TS and CICS TG statistics data available through CICS Explorer™:

In addition to the current Explorer Summary table, the CICS PA plug-in for CICS Explorer can now source CICS Statistics and Statistics Alerts data.

The additional data is made available through the following facilities:

- New fields in the HDB definition: Explorer, a flag to identify HDBs intended for the CICS PA plug-in, and Qualifier, used to associate related HDBs/DB2 tables

- Use of a report set or the HDB Load dialog to load the required data into the associated HDBs and also to load the HDB updates into their associated DB2® tables.

- A manifest table which is a catalog of HDBs that are associated with a qualifier and for which the Explorer indicator is set

Support for CICS Transaction Gateway V8.0:

Support for the enhanced SMF 111 records (including 7 new statistics fields) produced by CICS Transaction Gateway for z/OS V8.0 providing you with an even broader understanding of CICS system performance.

Easier data source set-up when using the CICS PA plug-in:

The process of defining, loading and exporting performance summary HDB data for use by the CICS PA plug-in to the CICS Explorer has been significantly improved.

The HDB template required is now pre-defined and if the performance summary data is destined for use by the CICS PA plug-in then the user must select this template.

The DB2 view required by the CICS PA plug-in to the CICS Explorer is now built by CICS PA during the Export to DB2 step.

Output batch reports as Portable Document Format (PDF) files:

A z/OS UNIX utility sysout2pdf that converts plain text batch reports generated by CICS Performance Analyzer for z/OS into Adobe Portable Document Format (PDF) files.

You can write plug-in filters for sysout2pdf to manipulate the report contents, highlight text, or add PDF navigation features such as bookmarks. You can also use sysout2pdf to e-mail the PDF.

The sysout2pdf function provides a z/OS UNIX shell script that reformats the z/OS batch report as XML and then uses Apache (Formatting Objects Processor) FOP to output the report as PDF.

The CICS PA report JCL requires changes to replace parameters of the DD statement for the report data set with parameters that direct the report to a z/OS UNIX file.

Documentation update: New CICS PA Getting Started Guide:

A new Getting Started Guide, SC34-7155-00, is a publication intended to help new users to understand the main CICS PA concepts and to become productive with the ISPF dialog interface and generating CICS PA reports

Housekeeping for DB2® data sources:

Sample JCL is provided to enable housekeeping of HDB data exported to DB2.

Statistics Alerts, Statistics and Performance Summary data can be deleted if no longer required for analysis or reporting.

Additional enhancements delivered via the service channel

The following enhancements to CICS PA V3.1 delivered using the service channel have been integrated into CICS PA V3.2:

PERFORMANCE AND STATISTICS ALERTS

You can monitor and report CMF performance data based on user defined thresholds.

A copy function allows users to copy a Statistics Alert definition to another HDB Register or to the same HDB Register with a different name.

Statistics alert report processing modified to ignore Alerts containing fields that are not valid for the statistics record being processed

EXTRACTION OF STATISTICS

Support for extraction of statistics data directly from the SMF file into a delimited text file.

Support for CICS TS V4.1 Transaction Resource Monitoring record Distributed Program Link (DPL) metrics.

Support for CICS TS V4.1 Performance Monitoring IDENTITY class data

Support for post-processing Selection Criteria when a FORM is specified in the Cross System Workload report.