IBM Tivoli OMEGAMON XE for IMS on z/OS

The world’s largest companies depend on the integrity of IMS™ technology to help shoulder their most crucial high-volume database access and storage needs. In order to take advantage of the benefits of IMS — especially in the Parallel Sysplex® environment — it is crucial to effectively manage your IMS systems for high performance.

With IBM Tivoli® OMEGAMON® XE for IMS on z/OS®, you gain a powerful management tool to help you optimize the performance and availability of your vital IMS systems. With the intuitive browser interface, you can clearly see and understand application and system events. From a single point of control, you can view comprehensive information and analysis across multiple IMS subsystems — or across your IMSplex environment.

Tivoli OMEGAMON XE for IMS allows you to maintain subsecond transaction processing by measuring internal IMS response times and view extensive metrics through the IMS Connect function. You can quickly solve system delays by analyzing IBM MVSTM resources used by IMS address spaces and internal IMS resource usage, such as IMS pools and database buffer pools. Within IMSplex environments, Tivoli OMEGAMON XE for IMS enables you to see coupling facility structure statistics, shared-queue counts and database lock conflicts that help you stay ahead of potential delays or outages.

In addition to offering leading performance and availability management for IMS, Tivoli OMEGAMON XE for IMS integrates with other Tivoli products to provide true end-to-end availability.
management and help prevent threats to system performance before they reduce service levels. It enables you to view detailed information about:

- IMS Connect throughput and response time summarized by transaction, data store, port, client ID and user ID.
- IMS Connect TCP/IP usage summaries.
- Resume TPIPE summaries.
- IMS Connect exception events.
- Coupling facility structure, data-sharing and shared-queue usage statistics.
- Data-sharing global lock conflicts.
- Address spaces for IMS regions.
- IMS regions execution information.
- Virtual storage access method (VSAM) and overflow sequential access method (OSAM) databases and buffer pool statistics.
- Input/output (I/O) device activity.
- Direct access storage device (DASD) logging.
- Open transaction manager access (OTMA) and shared-queue status information.
- Pool utilization.
- Program scheduling blocks (PSBs).
- Recovery control (RECON) data sets.
- Transaction summary and detail information.
- Fast path information and statistics on data entry databases (DEDBs), main storage databases (MSDBs) and virtual storage option (VSO) data spaces and areas.
- External subsystems.
- Extended recovery facility (XRF) status.

**Database locks** identify applications that are waiting for a lock. Monitoring these locks helps detect potential application bottlenecks so you can take appropriate action.

![Database locks](image)

To help you achieve both granular and system-wide views of your IMS operations, Tivoli OMEGAMON XE for IMS monitors collect and summarize information about key resources, such as enqueue, I/O, CPU, paging rates, pool storage and buffer pool metrics. In addition to usage data, the software includes a transaction reporting facility so you can measure queuing and service times within IMS and IMS internal response times.

**Measure resource use and help optimize transaction processing**

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Extensive metrics also let you see performance information on message flow through the IMS Connect function.
You can see response time details by component, including:

- Input pre-OTMA.
- Input read socket.
- Input read exit.
- Input system authorization facility (SAF).
- Process OTMA.

The product summarizes response times by transaction, data store, TCP/IP port, and client and user IDs. Metrics let you see average and maximum response times, component average response times, messages processed per second, acknowledgement code (ACK)/negative acknowledgement (NAK) and Resume TPIPE. TCP/IP usage statistics help you tune the z/OS communications environment.

To manage your IMS workloads effectively, Tivoli OMEGAMON XE for IMS includes more than 25 IMS Connect exception events formatted to help you more easily find and analyze problems.

### IMS regions can be viewed from an MVS perspective
Factors such as paging rates, CPU consumption and EXecute Channel Programs (EXCPs) can have a major impact on transaction throughput. For example, high CPU and EXCPs and lack of storage can indicate a potential application problem.

### Simplify management with a single view of your IMS systems
Tivoli OMEGAMON XE for IMS empowers you to manage your IMS systems, including those running in a Parallel Sysplex environment. From a single interface, you can display all IMS regions for a given IMS system so you can quickly find and resolve problems.

You can access information from each MVS image and IMS subsystem, including address spaces, DASD logging, device activity, pool display, dependent regions, system summary, transaction summary and detail, database activity and external subsystems. You can also view IMS interactions with z/OS resources. Extended TRF
reporting combines transaction data to see how it is disbursed and load-balanced between IMS subsystems.

When multiple IMS subsystems share one set of message queues, they can exploit the power of the Parallel Sysplex environment to balance workloads and drive capacity and availability. When you manage your IMS shared-queue environment with Tivoli OMEGAMON XE for IMS, the software helps you:

- Automatically collect data and monitor events on shared queues.
- Optimize processing of the IMS system workload and transaction throughput.
- Examine each of the shared-queue types: transaction, logical terminals (LTERM), fast path program, advanced program-to-program communication (APPC), OTMA and cold queues.
- Provide alerts when the number of items on the queue reaches a certain threshold.
- Avoid bottlenecks that can occur when shared-queue structures become full.

Database locks identify applications that are holding a lock and those waiting for the lock. Monitoring these locks helps detect potential application bottlenecks so you can take appropriate action.

**Optimize use of the coupling facility in IMSplex environments**

Tivoli OMEGAMON XE for IMS gives you a single point of control over IMS in Parallel Sysplex environments. You can see coupling facility data-sharing and shared-queue structure statistics, shared-queue counts and data-sharing lock conflicts to help identify factors that degrade performance.

Tivoli OMEGAMON XE for IMS speeds problem identification by highlighting transactions on shared queues waiting to be processed. The software's coupling facility workspaces identify when shared-queue structures are becoming full — before incoming messages are rejected. Additionally, monitors provide key information about data-sharing structures — such as global and false contention rates as well as use statistics — to determine when data-sharing lock and cache structures are becoming full.

**Leverage Tivoli Enterprise Portal**

Because Tivoli OMEGAMON XE monitors use IBM Tivoli Monitoring 6.1 shared technologies, they support efforts to centralize mainframe and distributed monitoring functions onto a single user interface: IBM Tivoli Enterprise™ Portal. The shared technologies also include:

- Support for IBM Tivoli Data Warehouse, which aggregates and prunes monitoring data from IBM Tivoli OMEGAMON XE on z/VM® and Linux® and other monitoring tools to improve historical reporting.
- Agent versioning support, which facilitates migration to new Tivoli OMEGAMON XE releases as expanded capabilities become available.

**Tap Dynamic Workspace Linking to find and analyze problems more quickly**

Because integration is key to leveraging the full power of your Tivoli OMEGAMON portfolio, these products now include Dynamic Workspace Linking. This function lets you easily navigate between other Tivoli OMEGAMON product workspaces as though they were a single product. The technology relays contextual directions to the target workspace, enabling a seamless transition.

For example, if Tivoli OMEGAMON XE for IMS detects a locking conflict that slows application performance, you might receive links to view your IBM Tivoli OMEGAMON XE for CICS® on z/OS transaction workspace to investigate the CICS transaction that owns the
lock. The feature frees users from the need to open other Tivoli OMEGAMON applications and start from scratch — or from comprehending the complex relationships between IMS, DB2® and other monitored systems.

Workspaces are easily customized to reveal resource allocation down to a granular level from multiple perspectives. Support for Group One languages (Chinese Simplified, Chinese Traditional, French, German, Italian, Japanese, Korean, Portuguese and Spanish) lets users view workspaces in numerous languages to share information more productively.

Simplify tasks to work smarter
All Tivoli OMEGAMON XE monitors allow you to customize your workspace to speed problem identification and quickly leverage existing expertise. For example, you can use the Expert Advice feature to mouse over an alert to receive a detailed explanation of the problem and potential fixes. Use knowledge out of the box or edit the feature to preserve solutions specific to your environment.

Access data from anywhere
Like all Tivoli OMEGAMON monitors, Tivoli OMEGAMON XE for IMS offers an intuitive, browser-based interface that allows you to monitor the health of your IMS and other systems from almost any location. The shared look and feel across many Tivoli OMEGAMON interfaces virtually eliminates the need for special training.

IMS regions can be viewed from an MVS perspective. Factors such as paging rates, CPU consumption and EXecute Channel Programs (EXCPs) can have a major impact on transaction throughput. For example, high CPU and EXCPs and lack of storage can indicate a potential application problem.

Add power to situation definition
Tivoli OMEGAMON software helps you create complex thresholds, situations and alerts, without deep scripting or coding skills. The Tivoli OMEGAMON XE situation editor offers the precision to say, “If condition A or F occurs with C and H, but not with B, alert me,” providing unmatched flexibility and granular control. The situation editor also allows you to view a graphical representation of alerts, so you know that implementation has been successful.

Help maximize the value of your IT investments with a single point of control
The ability to integrate information from Tivoli OMEGAMON XE monitors and third-party software into a single view means you can identify and track problems across all your enterprise platforms. This helps you make decisions quickly, efficiently and proactively. With Tivoli OMEGAMON XE you can:

- Build infrastructure views that deliver IT information tailored to the user’s responsibilities.
- Correlate reports to reveal an overall application view of performance and availability.
- Automate application-wide responses based on your policies and business rules.

Achieve end-to-end IBM System z management
Tivoli OMEGAMON System z™ infrastructure management solutions from IBM help customers achieve a true on demand computing environment.
Composed of integrated, industry-leading monitors and consoles, Tivoli OMEGAMON solutions can provide an end-to-end view across an entire IT infrastructure. These advanced System z infrastructure management solutions help businesses meet the demands of increasing data center volume, complexity and volatility by helping IT quickly identify, isolate and fix problems before they impact customers. With Tivoli OMEGAMON software, businesses can continually adjust their end-to-end System z infrastructures to deliver high performance and ultimately help prevent threats to system performance before they impact service levels.

About Tivoli software from IBM
Tivoli software provides a comprehensive set of offerings and capabilities in support of IBM Service Management, a scalable, modular approach used to deliver more efficient and effective services to your business. Meeting the needs of any size business, Tivoli software enables you to deliver service excellence in support of your business objectives through integration and automation of processes, workflows and tasks. The security-rich, open standards-based Tivoli service management platform is complemented by proactive operational management solutions that provide end-to-end visibility and control. It is also backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli customers and partners can also leverage each other’s best practices by participating in independently run IBM Tivoli User Groups around the world — visit www.tivoli-ug.org

For more information
To learn more about Tivoli performance and availability solutions and integrated solutions from IBM, contact your IBM representative or IBM Business Partner, or visit ibm.com/tivoli
## Software requirements:

- IMS, Versions 8.1 and 9.1
- IMS Connect Extensions, Version 1.2 and above
- z/OS, Version 1.4 and above

## IBM Tivoli OMEGAMON products for System z include:

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