



IBM z Systems Advanced Workload Analysis Reporter (IBM zAware)

Achieving Higher Availability

Most modern businesses rely so heavily on IT that an unplanned outage can result in negative financial and reputation consequences. Today IT systems are highly complex, and message volumes issued far exceeds what humans can read, let alone analyze. Companies are seeking a smarter way to analyze IT problems so that overall service is not disrupted and can be restored quickly before customers are impacted.

IBM zAware is a self-contained firmware IT analytics solution that helps systems and operations professionals rapidly identify problematic messages and unusual system behavior in near real time. Systems administrators can then use the information to take corrective actions. IBM zAware is designed to dramatically reduce the time to isolate IT problems so IT staff can restore service quickly and improve overall availability.

IBM zAware

IBM zAware is an analytics application used to analyze z/OS® OPERLOG messages and Linux® on IBM z Systems™ syslog messages (for IBM z13s™ (z13s), and IBM z13™ (z13) only).

IBM zAware uses a self-learning approach to model normal system behavior based on historical baseline system data, using pattern recognition to identify unexpected messages.

IBM zAware provides near real-time detection of anomalies that can then be viewed and further diagnosed, such as:

- Rare events leading to problems
- Problems due to incorrect system or application configuration settings, modifications or fixes

- Complex incidents involving several different subsystems
- The triggers and events leading up to a problem

How does it work?

Messages are monitored and analyzed by IBM zAware including all z/OS console messages, ISV and application generated messages, and Linux related messages. The baseline training for IBM zAware can be customized based on knowledge of the workloads running on z/OS or Linux on z. Users can also prime the server by transferring prior data for IBM zAware monitored clients, and request the server to build a model for each client from the transferred data.

Monitoring of both z/OS and Linux on z can be run in the same partition that is isolated from production environments. This allows one IBM zAware to monitor multiple systems at the same time without impacting any operating system image.

The number of Linux on z Systems connected to IBM zAware is likely to be far greater than the number of z/OS systems. As such, multiple Linux on z Systems instances can be grouped together enabling the monitoring of similar workloads in one view.

Multiple z/OS systems can be viewed as an aggregated parallel Sysplex group and/or can be viewed as individuals.

Data monitoring

The same Graphical User Interface (GUI) is used whether monitoring z/OS or Linux on z Systems. Anomalies are displayed via heat map or tree table views, which allow drill down capabilities to quickly identify the root cause of the anomaly on

the specific system. One or multiple admins may be authorized to view the output. Each view is customizable enabling focused attention on certain systems according to each viewer's needs.

IBM zAware Value

Helps customers improve problem determination. It helps to:

- Reduces cost, duration, and complexity of problem determination through faster message isolation
- Consolidates massive amounts of OPERLOG and Syslog data into a consumable screen
- Automatically identifies rare or unusual messages to help pinpoint problems that might not otherwise be easily recognized
- Depicts problems as they are unfolding so operators can intervene early before problems escalate
- Simplifies problem determination even those occurring across a sysplex
- Interface with other automation tools via published API
- Can help companies facing skills shortages

System Requirements

IBM zAware is ordered as a feature of the server, available on the IBM z13s, IBM z13, IBM zEnterprise® BC12 (zBC12), IBM zEnterprise EC12 (zEC12).

IBM zAware can be used to monitor z13s, z13, zBC12, zEC12, IBM zEnterprise 114 (z114), IBM zEnterprise 196 (z196), IBM System z10® Business Class (z10 BC™), and IBM System z10 Enterprise Class™ (z10 EC™).

The distance between an IBM zAware host system and monitored clients can be up to 3500km.

IBM zAware runs in a Secure Service Container LPAR on the z13s and z13¹. For earlier servers, IBM zAware runs in a special purpose firmware partition.

IBM zAware supports and monitors z/OS V1.13 + PTF, z/OS V2.1, z/OS V2.2 and Linux on z.

¹ Firmware available 3/10/16 for the z13 will provide the Secure Service Container LPAR.

Summary

Downtime and outages are extremely costly. IBM zAware can reduce downtime risks by quickly identifying changes in system behavior that might lead to system degradation or to application failure.

IBM zAware helps customers with:

- **Enhanced availability** – IBM zAware can *identify anomalous* messages to help you diagnose complex problems faster
- **Expert analysis** – IBM provides an *out of the box* self-learning analytics solution that knows *your* environment
- **Simplification** – IBM zAware pinpoints anomalies that would be otherwise *very difficult to identify* - like rare or unusual messages or trends
- **Time Savings** – With a better understanding of problematic messages, operators are less likely to direct unproductive efforts to the incorrect problem source.

IBM optional services are available to install and configure IBM zAware.

Effective November 1, 2016, the IBM z13 and z13s servers will be the last generation of z Systems servers to support IBM zAware (FC #0011) and its associated feature packs as firmware features (announcement letter 916-201). Clients will be able to get IBM zAware functionality as a software solution included in IBM Operations Analytics for z Systems, V3.1 announced on Sept 13, 2016 (announcement letter 216-373).

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