CA VM:Operator™ is an automated console message management system for z/VM and Linux on System z environments. It helps you minimize human intervention by automatically recognizing and then responding to messages. You can reduce costly errors and enhance the productivity of operations staff with full-screen features, extended color console control capabilities and simplified online review of the operator console.

Overview

With the enhanced power and sophistication of today’s z/VM and Linux on System z environments, organizations are faced with the challenges of continuing to enhance automation and operations management while also lowering costs. CA VM:Operator addresses these challenges by helping organizations respond to problems, application and subsystem failures and other unplanned events more rapidly, consistently and cost-effectively.

Business value

CA VM:Operator helps IT organizations create more capable and robust applications, improve productivity and reduce costly errors. It helps minimize human intervention by automating management of console messages for multiple z/VM and Linux on System z consoles. It automatically responds to recognized messages, helping to improve system throughput by minimizing costly errors and lag time between the appearance of a message and response by a human. It reduces clutter on the console to allow technical staff to focus on critical console traffic. CA VM:Operator also simplifies problem analysis by providing full-screen and extended color console control capabilities and online review of the operator system log file.
Features

Monitor and automate message processing for z/VM and Linux on System z

As the complexity and number of applications running on z/VM and Linux on System z increase, more resources are required to monitor and manage those resources. Multiple guest operating systems such as z/OS, z/VSE and Linux on System z, along with native CMS applications, can overwhelm the capabilities and training of operations staff. Without adequate notification and/or responses to developing situations, costly outages or delays may result. CA VM:Operator provides a reliable and secure automated console message management system that helps data center managers and staff address all aspects of their operation.

Mainframe 2.0

- **CA Mainframe VM Product Manager** provides a comprehensive suite of tools designed to automate the deployment of z/VM products from CA Technologies.
  - Deployment of CA VM:Operator is simplified. Each release can be installed and maintained in a single library, and the single set of product code can be deployed to create multiple executable instances of CA VM:Operator on the same system.

- **Standard implementation of IBM VMSES/E** (Virtual Machine Serviceability Enhancements Staged/Extended) provides numerous benefits to CA VM:Operator users.
  - Industry standard procedures are now used to install and service CA VM:Operator and other z/VM products from CA Technologies, providing a consistent look and feel and increased productivity.
  - Skills already developed to service z/VM itself can be leveraged to service CA VM:Operator—the procedures and commands will be familiar.
  - Installation of PTFs is greatly simplified, including the automated inclusion of all necessary prerequisites, providing significant time savings.

Key capabilities

- **Efficiently handle critical messages**: Important messages can be highlighted and held on the CA VM:Operator screen until the operator specifically removes them or, in some cases, until CA VM:Operator determines that the condition has been corrected. For example, messages indicating that a device needs intervention are automatically held on the screen and removed by CA VM:Operator when the device is operational.

  - **Avoid distraction**: Full-screen control within CA VM:Operator permits unimportant messages to display, and then scroll up and off the screen. This prevents common
messages from filling the entire screen, keeping critical messages from being displayed.

— **Identify critical messages instantly:** CA VM:Operator supports extended color as well as monochrome consoles. You can easily define default colors for the windows that display on CA VM:Operator consoles. Routing tables let you specify different colors for certain messages. You can also create different levels of “critical” messages.

For example, you could use white for common messages the operator might want to notice (such as user IDs being forced off the system), yellow for important messages (such as I/O device checks), and red for absolutely critical messages (such as the spool system being full).

**Support for Linux on system z virtual machines:** The CA VM:Operator message routing system can process Linux on System z messages in several ways by interfacing with Linux syslogd or syslog-ng message loggers.

— **Syslogd collector sites** that prefer to collect Linux messages on z/VM can get message feeds from Linux message loggers. These messages are written to the CA VM:Operator log and can be routed by most routing tables.

— **Syslogd sender sites** that already collect Linux messages on a central message logger can add selected CA VM:Operator messages. A special routing table selects the messages to be sent to a Linux message logger and assigns an arbitrary facility and severity code.

**Automate repetitive tasks:** An action routine is a program that directs CA VM:Operator to perform a specific action when a message is received. CA VM:Operator supports a variety of action routines, including routines that are spawned (or created) as background processes or tasks. A spawned routine can issue commands to other products for z/VM from CA Technologies, trap and examine messages received by CA VM:Operator, and perform a variety of intricate functions. Action routines can become the planks in your bridge to complete data center automation.

**Quick and easy access to online console log:** When you need to review events that have already happened, CA VM:Operator provides the information quickly and accurately with its online log of message traffic. You do not have to search through piles of printed logs to get the details. Unlike spooled console logs, several people can view the CA VM:Operator online log simultaneously. The online log also shows all current activity. The operator does not need to take any action, such as closing a console spool, to let others examine the log. Online console review capabilities include being able to scroll forward and backward, search for lines containing specified character strings, and view only lines containing a specified character string.
— **Record operator activity**: The system log contains all message traffic and can optionally be spooled or printed on a dedicated 3270-console printer. This provides operations management with a hardcopy listing of current operator activity.

— **Audit system activity**: The online log resides in a disk file. There is a separate file for each day that provides an audit trail of system activity. This log also contains commands entered from any CA VM:Operator console. CA VM:Operator gives you the capability of auditing more than just message traffic. You can require that some commands be entered only from certain CA VM:Operator consoles.

- **Multi-session support**: The CA VM:Operator Session Support Facility allows you to run multiple sessions on one physical console. With the CA VM:Operator SESSIONS window, your operator has access to other user IDs and applications that would normally require the use of additional display consoles.

— **Extend operator access**: The Session Support Facility gives your operator full-screen, 3270 interactive capabilities. For example, from one physical console, your operator can access guest systems (z/Linux, z/VSE or z/OS), secondary operator consoles, CMS user IDs, applications such as CA VM:Spool™ and remote systems running CA VM:Operator. Sessions can be controlled automatically using a powerful dialog capability, which allows you to use REXX macros to monitor session display and automatically handle tasks, thus eliminating the necessity of human intervention.

- **Extend operations control**: CA VM:Operator provides an interactive interface that enables operations staff to service disconnected service virtual machines such as RSCS VTAM or other CA Technologies products such as CA VM:Tape or CA VM:Spool. All console activity on the disconnected virtual machine displays in a special window, and commands entered in the window are automatically executed on the disconnected virtual machine. Thus, you can monitor these machines without disrupting normal system activity. All features available to the VM operator are also available for monitoring other virtual machines, including:

  — Message auditing
  — Message filtering
  — Action routines
  — Online log review
  — Command logging

This facility also can be used to more securely manage disconnected Linux virtual machines. In the case of Linux it is usually necessary to log on to a Linux user ID in order to manage the Linux system. The Linux Password Masking facility allows this to be done securely.
In addition to windows for system activity, log review, virtual machine activity and sessions, CA VM:Operator provides windows for tracking user activity, recording and responding to user messages, and managing tape drives and volumes.

— **Support system programmers:** CA VM:Operator allows authorized users to use their own terminals as extensions of the operator console. This means system programmers can connect to CA VM:Operator and in effect become an operator console from any 3270 terminal without going to the data center. They can then monitor the current system status, review past messages and invoke operator commands as if they were being entered directly on the operator console.

— **Support multiple consoles:** CA VM:Operator supports multiple operator consoles as attached or dedicated devices. These are activated automatically during CA VM:Operator initialization. Sites can use this facility to distribute message traffic across multiple consoles. For example, the CA VM:Tape window can be displayed on a separate console near the tape drives.

— **Remote CA VM:Operator support:** CA VM:Operator uses TCP/IP to connect multiple CA VM:Operator systems together in a peer-to-peer RVS network. Any connected system can invoke commands or route messages to any other connected system. Commands invoked on a remote VM:Operator system execute with specific authorization that identifies not only the requesting console or user ID but also the requesting console or user ID on a specific remote system. All line mode output generated by a remotely executing command is returned for processing on the requesting system.

- **Full-screen tape management:** CA VM:Operator interfaces with CA VM:Tape to provide full-screen tape management for the operator.

  — **Display drive status:** The status of all your tape drives can be viewed at a glance by setting up a CA VM:Tape window. Because CA VM:Operator queries CA VM:Tape at regular intervals, you get real-time updates of tape drive status. If the number of drives exceeds the window size, you can scroll forward and backward as needed. In addition, this display shows the number of outstanding tape mount and drive allocation requests.

  — **Handle mount request messages:** With CA VM:Operator and CA VM:Tape, the operator never misses a message to mount a tape. CA VM:Tape mount messages are held on the screen until the operator mounts the required tape volume.

  — **Track mount time:** CA VM:Operator tracks the amount of time required for a tape mount and keeps this information in the system console log. You can easily extract tape mount times from the log and display them.
**Easy implementation and use:** CA VM:Operator installs easily and requires no CP or CMS modifications. Sample configuration files, window definitions and routing tables are provided to simplify implementation.

- **Customize with user exits:** User exits allow customization of CA VM:Operator to meet site requirements. There are currently ten different exits available. User exits can be written in REXX, EXEC2 or Assembler.

- **Create site-specific action routines:** Using the CA VM:Operator Application Programming Interface (API), you can create site-specific action routines that operate under CA VM:Operator control. This provides extensive flexibility and allows you to customize CA VM:Operator to meet very unique demands and handle special conditions. Action routines can be written in REXX and EXEC2.

**Integration maximizes value of CA VM:Operator:** CA VM:Operator interfaces with other products within the CA VM:Manager Suite for Linux on System z to optimize your z/VM and Linux on System z environments:

- **Use CA VM:Archiver™** to archive the CA VM:Operator daily system log file and store old logs.

- **CA VM:Spool messages** can be sent to CA VM:Operator or removed as appropriate.

- **CA VM:Tape** provides full-screen tape management for the operator, enabling you to query tape drive status, hold tape mount requests and record mount times.

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**Delivery approach**

CA Services provides a portfolio of mainframe services delivered through CA Technologies internal staff and a network of established partners chosen to help you achieve a successful deployment and get the desired business results as quickly as possible. Our standard service offerings are designed to speed deployment and accelerate the learning curve for your staff. CA Technologies field-proven mainframe best practices and training help you lower risk, improve use/adoption and ultimately align the product configuration to your business requirements.
Benefits

Help reduce costly errors and increase operations productivity through automation

The CA VM:Operator automated console message management system helps you to:

- Increase operator productivity by automating message handling
- Increase operator effectiveness by highlighting and retaining critical messages on consoles while allowing unimportant messages to scroll off the screen
- Save operator time by automating and simplifying repetitive tasks
- Improve audit ability and easily review events with an online log of message traffic
- Save resources by enabling multiple user IDs to be controlled from one physical console
- Leverage expertise of operations staff by managing remote sites from a central location

CA VM:Operator helps optimize operations efficiency by using routing tables to examine messages and specify actions to be taken, such as:

- Call an action routine to execute site-defined action.
- Launch a process to perform site-defined actions in the background.
- Display the message on the operator console. Messages can be highlighted, held on the screen (until manually deleted), and displayed in a specified color.
- Ignore the message (log it but do not display it). This reduces the volume of unimportant message traffic displayed on the console but allows all messages to be reviewed online if needed.
The CA Technologies advantage

CA VM:Operator helps organizations improve operational efficiency and reduce required human intervention by automatically recognizing and responding to messages. It is part of the CA VM:Manager™ Suite for Linux on System z—a comprehensive portfolio of products that provide automated operations, service level management, security, backup and recovery, performance management and storage management for z/VM and Linux on System z environments. In addition to delivering excellent technical and customer support worldwide, CA Technologies continues to have a strong commitment to supporting its z/VM and Linux on System z solutions and will continue to maintain its leadership role by developing and enhancing these solutions, exploiting new technology and responding to customer needs and requirements.