Unicenter® CA-MIM™ Resource Sharing

Managing On-Demand Computing Infrastructure

Unicenter® CA-MIM™ Resource Sharing (Unicenter CA-MIM) is the leading solution for sharing DASD, tape and console resources safely and efficiently in multiple image z/OS, OS/390 and VM environments. By streamlining and automating many of the procedures involved in sharing resources, Unicenter CA-MIM cost-effectively enables sites to share data center resources across as many as 32 system images, providing the most comprehensive resource-sharing tool available today.

Challenges of Resource Sharing

As organizations increasingly rely on IT as the backbone of their businesses, IT professionals are challenged to find innovative automation solutions that improve system throughput, protect valuable information and maximize user efficiency. In today’s economy, these elements are all necessary for competitive businesses to survive. And with most companies looking to improve resource utilization, achieving these goals with fewer people and smaller budgets has become a requirement as well.

A Family of Products Working Together

Computer Associates International, Inc. (CA) offers Unicenter CA-MIM, a superior family of automated DASD, tape and console resource sharing solutions. It is comprised of three solutions that can be purchased together or individually.

• Unicenter CA-MIM:
  – Unicenter CA-MII Data Sharing (Unicenter CA-MII) — Protects data integrity automatically, speeds resolution of resource conflicts in shared DASD environments and provides additional integrity at a local system level.
  – Unicenter CA-MIA Tape Sharing (Unicenter CA-MIA) — Automates tape device sharing in z/OS, z/VM, and mixed z/OS and z/VM sites.
  – Unicenter CA-MIC Message Sharing (Unicenter CA-MIC) — Provides cross-system command routing from any z/OS or z/VM console, and allows messages to be imported from external systems and routed to local consoles.

Unicenter CA-MIM

Unicenter CA-MIM is designed for sites with two or more systems running z/OS (OS/390) or z/VM (VM) that want to share and consolidate resources safely and effectively. Unicenter CA-MIM is also an excellent solution for data centers that implement a sysplex configuration, fully exploiting the sysplex environment for maximum performance. Unicenter CA-MIM can be used to share resources among any mix of sysplex and non-sysplex systems — including resources shared across multiple sysplexes.

In a parallel sysplex environment where the defined Unicenter CA-MIM complex that is equal to or within the sysplex, the control file can be placed in the coupling facility. This feature provides a significant performance enhancement through the reduction of I/O transfer times as compared to CTC, cached DASD and non-cached DASD I/O operations.

Unicenter CA-MIM provides the capability to define alternate communication methods and control files. This furnishes data centers with the redundancy needed to provide uninterrupted operation as the environment changes or during hardware outages. Robust control file migration capabilities allow for moving between DASD, coupling facility and virtual control files while the product is running.

The Unicenter CA-MIM architecture has employed a star communication topology for nearly 25 years. The star architecture allows systems to determine managed resource availability with only a single control file access. Frequency of access to the control file is based on the amount of managed resource activity on each system. This ensures that resources are protected when in use and allows waiting requesters to use resources as soon as they become available. Star architecture optimizes throughput across the enterprise.

Unicenter CA-MIM delivers unprecedented benefits since it eliminates the trade-off between efficiency and integrity by:

• Providing a single point for interfacing with all images and peripheral devices
• Providing a simplified means of managing and monitoring tape devices, DASD and console traffic
• Improving cost-efficiency by enabling multiple-image sites to share DASD, tape devices and consoles
• Providing resource and data integrity by controlling cross-system communications and ENQ conflicts
• Improving user service by providing device sharing among systems, which increases resource availability and job throughput

**Protecting Data Integrity With Unicenter CA-MII**

In a shared z/OS DASD environment with no enqueue protection, two users could make simultaneous updates to the same data set, thereby altering or even destroying the data. Locking out, or reserving, an entire DASD volume each time a data set is accessed can prevent this destruction. However, this leaves the volume unavailable to other users, which decreases efficiency and throughput tremendously.

Unicenter CA-MII Data Sharing provides a CPU-efficient, automatic method for preserving integrity with superior recoverability. This product communicates data set usage to all systems in a complex, and identifies and resolves data set conflicts. In addition, it prevents common user errors that destroy data sets.

- **Distinctive Features**
  - Communicates ENQ (enqueue resource serialization) requests to all systems in a complex, so that applications on different systems cannot destroy shared resources, such as data sets
  - Converts RESERVE (DASD volume serialization) requests to more granular ENQ requests to increase resource availability
  - Enables DASD sharing between non-sysplex systems, systems within sysplexes, across multiple sysplexes, subsets of systems within a sysplex and any combination of the above
  - Notifies all participants involved in a resource conflict so that the conflict can be resolved more quickly
  - Maximizes JES2 batch initiator utilization by re-queuing jobs requiring data sets that are in use and then automatically rescheduling these jobs when their data sets become available
  - Provides capability to detect and optionally prevent inadvertent modification of data set attributes
  - Allows an installation to specify what applications or utility programs are authorized to read or update certain data sets or classes of data sets
  - Prevents or automatically serializes simultaneous DISP=SHR data set updates

**Automated Tape Device Sharing With Unicenter CA-MIA**

In multiple image sites, effective tape device management is critical to smooth operations. If tape devices are shared but allocation is poorly coordinated, the same device can be allocated to two jobs simultaneously, threatening data integrity. Operations may ensure integrity by dedicating tape devices; however, this can be inefficient, since devices sit idle when there are not enough jobs on a single system to keep them busy. At the same time, jobs on other systems might be delayed, waiting for tape devices.

Unicenter CA-MIA enables z/OS sites, z/VM sites, and mixed z/OS and z/VM sites with CMS users and z/OS guests, to share tape devices automatically and safely. The product provides integrity for data that resides on tape and eliminates the manual processes typically associated with tape device sharing.

- **Distinctive Features**
  - Enables tape device sharing with non-sysplex systems or with systems in different sysplexes
  - Provides compatibility with all tape device types, including tape libraries and virtual tape devices
  - Supports dynamic changes to tape device configurations
  - Alleviates device path restrictions when running guest systems under z/VM
  - Protects data integrity across the enterprise for processes, such as DDR SWAP and VARY ONLINE, beyond simple tape allocations
  - Influences tape device selection using site criteria, such as allocating job and device location
  - Eliminates devices from consideration for allocation and allocation recovery
  - Provides intelligent automation of allocation recovery to streamline the allocation recovery process for better system and allocation performance

To support tape device sharing with Linux guests running on a VM host, a new stand-alone Unicenter® CA-MIA VM service machine provides a communication interface between Linux guest systems. Through this interface Linux guests can request a tape device to be attached or detached. When the tape device is detached from the Linux guest system, it can be available for other z/OS, z/VM, CMS or Linux guest systems sharing the tape device. According to specified policies the Unicenter CA-MIA Tape Sharing self-managing capability automates tape device attachment.

**Consolidating Console Operations and Automation With Unicenter CA-MIC**

To share resources effectively, a multiple image site must control and manage console information globally, so that operations can keep track of different systems and coordinate their use. Yet global management is often difficult to achieve, because each system has its own dedicated, independent consoles. To monitor different systems, operators must switch between individual consoles.
Unicenter CA-MIC Message Sharing facilitates global console management by allowing operations to control and customize the flow of console information, so that the systems can be monitored from a single point. This improves operations productivity and performance, and ensures that all systems are monitored consistently. Since the systems can be monitored from a single point, operators do not have to switch to different consoles and can respond to critical messages, even from geographically separated locations. Operations can consolidate consoles for particular tasks to create role-based workstations. For example, print messages from all systems might be routed to one console located near the printers in order to form a print workstation. All system messages and tape messages could be similarly handled to create a global master console and a tape operator workstation.

- Distinctive Features
  - Enables console operations and automation consolidation with non-sysplex systems or with systems in different sysplexes
  - Enables a single point of control for operating and monitoring the mainframe
  - Supports cross-system message routing to a wide variety of destinations
  - Provides a robust suite of selection criteria for customizing message routing
  - Supports cross-system command routing from a wide variety of command sources
  - Provides security for cross-system commands by allowing different authority levels to be assigned to command sources
  - Interfaces with Unicenter® CA-OPS/MVS® Event Management and Automation for console automation consolidation

Supported Environments
Unicenter CA-MIM runs on all z/OS and OS/390 operating system levels that IBM supports. These z/OS or OS/390 systems may run as stand-alone systems, logically partitioned systems or as guests under z/VM. Unicenter CA-MIM Resource Sharing for VM runs on all IBM-supported versions of z/VM and requires the GCS component of z/VM.

Unicenter®: Managing Business Infrastructure
The Unicenter family of management solutions provides unbiased, equally superior support across an unparalleled breadth of platforms and applications. Its solutions span three major areas — IT Resource Management, Operations Management and Services Management.

Delivering Value
CA is committed to keeping your interests at the forefront of everything we do by delivering value through innovative and high-quality products and services. Our business processes are certified global ISO 9001:2000 — the highest quality standard — allowing us to consistently deliver high-quality products to our customers. Our CA Technology Services team helps ensure unimpeded access to our rich technical skills throughout all stages of your project life cycle, including strategy, implementation, results monitoring and CA Education courses that help you derive the most value from your CA investment. And in an industry first, we sell our solutions through FlexSelect Licensing®: Our Software Sold Your Way™. FlexSelect Licensing gives you the flexibility and power to determine the length and dollar value of your license agreement, adjust software usage to your business needs, adapt to technological changes and better manage your software budget.

For more information, call 1-888-864-2368 or visit ca.com

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