

CA NetMaster® Network Management for SNA

Best Practices Guide

Release 12.1



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CA Technologies Product References

This document references the following CA Technologies products:

- CA NetMaster® File Transfer Management (CA NetMaster FTM)
- CA NetMaster® Network Automation (CA NetMaster NA)
- CA NetMaster® Network Management for SNA (CA NetMaster NM for SNA)
- CA NetMaster® Network Management for TCP/IP (CA NetMaster NM for TCP/IP)
- CA OPS/MVS® Event Management and Automation (CA OPS/MVS)

Contact CA Technologies

Contact CA Support

For your convenience, CA Technologies provides one site where you can access the information that you need for your Home Office, Small Business, and Enterprise CA Technologies products. At <http://ca.com/support>, you can access the following resources:

- Online and telephone contact information for technical assistance and customer services
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These best practices represent years of product experience, much of which is based on customer experience reported through interviews with development, technical support, and technical services. Therefore, many of these best practices are truly a collaborative effort stemming from customer feedback.

To continue and build on this process, we encourage users to share common themes of product use that might benefit other users. Please consider sharing your best practices with us.

To share your best practices, contact us at techpubs@ca.com and preface your email subject line with "Best Practices for *product name*" so that we can easily identify and categorize them.

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Chapter 1: Introduction

This section contains the following topics:

[Purpose of this Guide](#) (see page 7)

[Audience](#) (see page 7)

[Mainframe 2.0 Overview](#) (see page 7)

[Mainframe 2.0 Features](#) (see page 8)

Purpose of this Guide

The guide provides a brief introduction to the CA Technologies mainframe management strategy and features, and describes the best practices for installing and configuring CA NetMaster NM for SNA.

Audience

The intended audience of this guide is systems programmers and administrators who install, configure, deploy, and maintain CA NetMaster NM for SNA.

Mainframe 2.0 Overview

Mainframe 2.0 is our strategy for providing leadership in the mainframe operating environment. We intend to lead the mainframe marketplace for customer experience, Out-Tasking solutions, and solution innovation. After listening to customer needs and requirements to keep the mainframe operating environment viable and cost-effective, we are providing new tools to simplify usage and to energize this operating environment for years to come.

CA Mainframe Software Manager™ (CA MSM) is an important step in realizing the Mainframe 2.0 strategy. CA MSM simplifies and standardizes the delivery, installation, and maintenance of mainframe products on z/OS systems. CA MSM has a web-based interface with a modern look and feel for managing those solutions. As products adopt Mainframe 2.0 features and CA MSM services, you can acquire, install, and manage your software in a common way.

We follow the IBM z/OS packaging standards using SMP/E, with some additional CA Technologies qualities of service added, to make installation simple and consistent. Additionally, through the synchronization of product releases and the use of common test environments, we will declare a yearly mainframe software stack that includes many new releases with enhanced functionality. This stack is certified for interoperability across the CA Technologies mainframe product portfolio and the base IBM z/OS product stack.

Mainframe 2.0 Features

Mainframe 2.0 has the following main features:

CA Mainframe Software Manager (CA MSM)

Delivers simplified acquisition, installation, and deployment capabilities using a common z/OS-based web application delivered through a browser-based UI. CA MSM includes the following services:

Product Acquisition Service (PAS)

Facilitates the acquisition of our mainframe products and services, including product base installation packages and program temporary fixes (PTFs). This service integrates the inventory of products available on your system with CA Support, providing a seamless environment for managing and downloading software and fixes onto your system.

Software Installation Service (SIS)

Facilitates the installation and maintenance of our mainframe products in the software inventory of the driving system. This service enables you to browse and manage the software inventory using a web interface, and automates tasks for products that use SMP/E to manage installation. You can browse downloaded software packages, and browse and manage one or more consolidated software inventories (CSIs) on the driving system.

Software Deployment Service (SDS)

Facilitates the deployment of CA Technologies mainframe products from the software inventory of the driving system. This service enables you to deploy installed products that are policy-driven with a set of appropriate transport mechanisms across a known topology. The enterprise system topology can include shared DASD environments, networked environments, and z/OS systems. Policies represent a combination of metadata input and user-supplied input. Metadata input identifies the component parts of a product. User-supplied input identifies the deployment criteria, such as where it goes and what it is named.

Software Configuration Service (SCS)

Facilitates the mainframe products configuration from the software inventory of the driving system to the targeted z/OS mainframe operating system. The SCS guides you through the configuration creation process, and through the manual steps to implement the configuration. In addition, the SCS includes an address space communications service running on each targeted z/OS system.

Electronic Software Delivery (ESD)

Enables you to get our products from an FTP server. We have improved this process so that you no longer need to build a tape to install the product.

Best Practices Management

Integrates with IBM Health Checker for z/OS to verify that deployed software follows our best practices. The health checks continually monitor the system and software to provide feedback on whether the software continues to be configured optimally.

Best Practices Guide

Provides best practices for product installation and configuration.

Active and Heartbeat Event Management through CA OPS/MVS EMA

CA Technologies mainframe products can automatically communicate both active status events and heartbeat events to CA OPS/MVS in a consistent manner. The enabling technology for this feature is through a generic event API call that CA OPS/MVS provides to the other products so that they can communicate events to CA OPS/MVS.

Two versions of this API call are provided to support this initiative:

- An active status event API call that allows other products to generate events for the CA OPS/MVS EMA System State Manager (SSM) component when they are starting, up, stopping, or down.
- A heartbeat API call that allows other CA Technologies products to communicate a normal, warning, or problem overall health status and reasoning to CA OPS/MVS EMA on a regular interval.

After a CA Technologies product begins generating heart beat events for CA OPS/MVS, CA OPS/MVS can also react to the lack of a heart beat event from another CA Technologies product address space, treating this as an indication that there is either a potential problem with the CA Technologies product address space, or there is a larger system-level problem.

SSM is a built-in feature of CA OPS/MVS that uses an internal relational data framework to proactively monitor and manage started tasks, online applications, subsystems, JES initiators, and other z/OS resources including your CA Technologies mainframe products. SSM compares the current state of online systems, hardware devices, and the other resources with their desired state, and then automatically makes the necessary corrections when a resource is not in its desired state. This provides proactive and reactive state management of critical resources. As previously noted, SSM is particularly interested in receiving active status events consistently from all CA Technologies products when they are starting, up, stopping, or down. Without this consistent type of events, SSM must maintain separate rules in CA OPS/MVS for each product unique messages that are associated with starting and stopping.

Note: For additional information about the CA Mainframe 2.0 initiative, see <http://ca.com//mainframe2>.

Chapter 2: Installation and Configuration Best Practices

This section contains the following topics:

[Installation](#) (see page 11)

[Address Space Sharing](#) (see page 12)

[Security Considerations](#) (see page 12)

[Configuration for Optimal Performance](#) (see page 15)

[Online Help](#) (see page 16)

[Interfaces and Integration Points](#) (see page 16)

[Multisystem Deployment](#) (see page 17)

Installation

Use CA MSM to acquire, install, and maintain your product.

Business Value:

CA MSM provides a web interface, which works with ESD and standardized installation, to provide a common way to manage CA mainframe products. You can use it to download and install CA NetMaster NM for SNA.

CA MSM lets you download product and maintenance releases over the Internet directly to your system from the CA Support website. After you use CA MSM to download your product or maintenance, you use the same interface to install the downloaded software packages using SMP/E.

Additional Considerations:

After you install the product, use the product's Install Utility to set it up. CA MSM can continue to help you maintain your product.

Note: If there is maintenance for VSAM data sets, you must use the Install Utility to update those data sets for each region you have set up.

More Information:

For more information about CA MSM, see the *CA Mainframe Software Manager Product Guide*. For more information about product setup, see the *Installation Guide*.

Address Space Sharing

If your site uses multiple CA Mainframe Network Management products, share the address space with the following products for performance and usability optimization:

- CA NetMaster NA
- CA NetMaster NM for TCP/IP

To share the address space, set up a region that includes the products.

CA NetMaster NM for SNA can also share address space with the following products:

- CA NetMaster FTM
- CA SOLVE:FTS

Business Value:

Sharing an address space has the following values:

- You require only a single logon to access multiple products from one interface.
- You have better integration between products. You can have a single integrated configured address space instead of having to configure multiple address spaces.
- The multiple products can share resources.

Security Considerations

Implement the NMSAF solution. The NMSAF solution is built around a partial security exit. The solution uses the product's User Access Maintenance Subsystem (UAMS) data set to store information for your product region, and uses your installed security product to perform user validation and password checking (through the IBM-defined system authorization facility (SAF) interfaces).

Business Value:

This setup is ideal for organizations that want the flexibility of allowing the administrator to control specific region authorities, while still ensuring that access to the region is secured by their security product.

More Information:

For more information about the NMSAF solution and UAMS, see the *Security Guide*.

UAMS VSAM Data Set Sharing

Implement record-level sharing (RLS), and include the XOPT=RSLU parameter in the SYSIN member for each product region sharing the UAMS VSAM data set.

Business Value:

Multiple users on multiple systems can update a UAMS VSAM data set at the same time. The standard VSAM share options do not guarantee data set integrity with simultaneous updates from multiple systems. Using RLS, the UAMS VSAM data set can be shared without the possibility of corruption, which reduces the possibility of region outage.

Additional Considerations:

The implementation of RLS requires the proper configuration and availability of SMSVSAM. Some SMS rules for the RLS-managed data sets are also required on the systems using RLS.

More Information:

The *Security Guide* contains more information about the sharing of UAMS data set using RLS. The IBM DFSMS guides describe the implementation of RLS for VSAM data sets. For a comprehensive overview of RLS, see the chapter "VSAM Record Level Sharing" in the IBM Redbooks publication *VSAM Demystified* (SG24-6105).

Background Users

In a multisystem environment, reduce the number of background user IDs you add to security by specifying the same value for NMSUP in all regions.

Business Value:

Particularly in large complexes, this practice assists in simplifying the administration of internal background user IDs and reduces the possibility of outages associated with nonexistent, or incorrectly defined user IDs.

Additional Considerations:

CA NetMaster NM for SNA uses background users to perform various tasks. By default, the NMSAF solution checks the background user IDs in advanced program-to-program communications (APPC). You must add them to your installed security product.

Note: The following NMSAF SXCTL parameters set the user ID checking: APPCCHECK and SYSCHECK.

The following list identifies the background user IDs:

- xxxxAOMP
- xxxxBLOG
- xxxxBMON
- xxxxBSVR
- xxxxBSYS
- xxxxCNMP
- xxxxLOGP
- xxxxPPOP

xxxx

Is the prefix specified by the NMSUP region job control language (JCL) parameter.

By specifying the same value for NMSUP in all regions, you only have to add one background user to security. For example, if you set NMSUP to MFNM in all regions, then the user ID for the xxxxBSYS background users in those regions is MFNMBSYS.

To use NMSUP, add the following statement to the TESTEXEC(RUNSYSIN) members for the regions, using the same xxxx value:

```
PPREF= 'NMSUP=xxxx'
```

More Information:

For information about SXCTL, see the *Security Guide*.

Configuration for Optimal Performance

As a performance pattern develops for your product, tune the relevant controls. You probably never have to tune many of the controls.

Business Value:

Reviewing the configuration and tuning parameters helps ensure that you are not performing unnecessary processing, such as collecting and logging data that your organization does not require, thus saving CPU cycles. As you become more familiar with the capabilities of the product, you can make informed decisions on what functions are desirable and therefore only incur overhead where there are obvious benefits.

Additional Considerations:

A product with the breadth and capability of CA NetMaster NM for SNA supports many external tuning controls. Configuring every last aspect of its operation can seem like a large task. However, you can set up an effective environment by simply using the default settings.

If you have a newly implemented region, a basic configuration is created with some essential parameters updated during setup. Further customization can be performed progressively.

More Information:

For more information about product setup and initial startup, see the *Installation Guide*.

zIIPs

If IBM System z Integrated Information Processors (zIIPs) are available, elect to use zIIPs when you set up your regions.

Business Value:

Using zIIPs provides the following benefits:

- Reducing the execution time on the normal central processing unit (CPU), providing savings in billable CPU time
- Freeing up processing cycles from the CPU to other work
- Exploiting the processing power of zIIPs

More Information:

The following JCL parameters control the usage of zIIPs: PAEXMODE for the SOLVE Subsystem Interface and XM for the region. For information about the parameters, see the *SOLVE Subsystem Interface Guide* and the *Reference Guide*.

Online Help

Use online help to find out more about the interface in context.

Business Value:

CA NetMaster NM for SNA has many features and can be overwhelming to new users. However, you have access to substantial online help at the 3270 interface, usually by pressing F1. You are encouraged to request online help, to promote product understanding, save time on issue resolution, and potentially save money on basic product training.

Interfaces and Integration Points

Integrate with other CA products to help you manage your business.

Business Value:

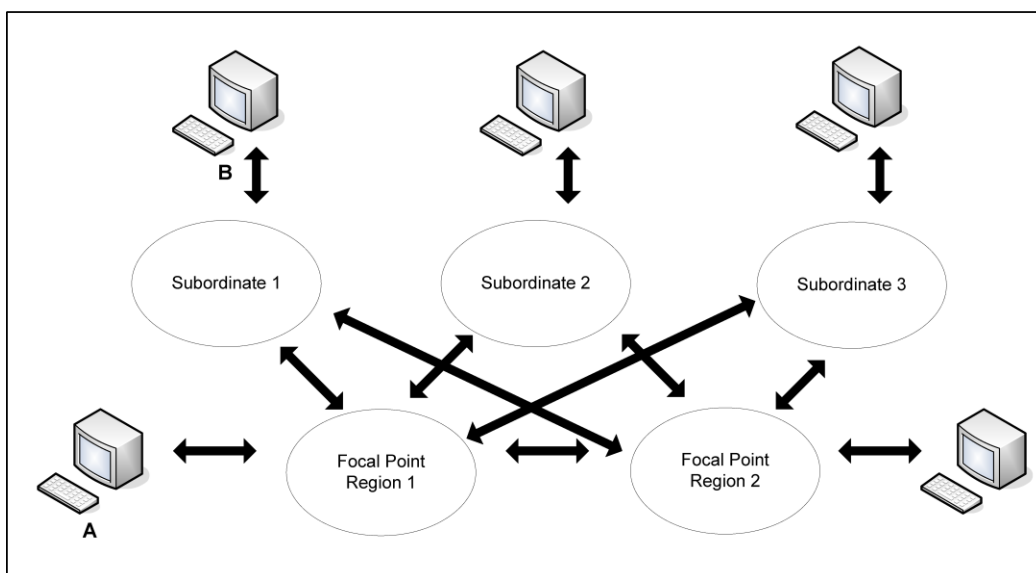
CA NetMaster NM for SNA integrates with the following CA products:

- **Other CA NetMaster products**—All CA NetMaster products can share the same address space. They can also communicate with each other using their multisystem capabilities. The use of common monitors, such as the alert monitor and the status monitor, supports the combined monitoring and control of network events and resources irrespective of whether they are IP, SNA, or file transfer related.
- **CA Service Desk**—CA NetMaster NM for SNA supports the automatic creation of trouble tickets in CA Service Desk, facilitating problem notification and resolution.
- **CA OPS/MVS**—CA OPS/MVS can forward system events programmatically to CA NetMaster NM for SNA for display on the alert monitor. It is an ideal consolidation point for all mainframe network and system events. The integration facilitates the flow of information between CA management products and users.

Multisystem Deployment

If you have multiple systems, deploy CA NetMaster NM for SNA in a multisystem environment to provide a consolidated view of your enterprise.

The following diagram shows an example of a multisystem environment. Logging on to Console A allows visibility to all resources. Logging on to Console B allows visibility to the subordinate system image only.



Business Value:

Particularly in large multisystem environments, deployment can be both arduous and time consuming. Following an effective and proven process has the following values:

- Reduce the time taken to migrate to new releases, and therefore enable access to new functions more readily.
- Free key resources to perform other tasks, such as the exploitation of product functions.
- Reduce the likelihood of errors and subsequent outages associated with poor deployment processes.

Additional Considerations:

We recommend that you use the CA MSM SDS to deploy the product SMP/E target libraries to the remote systems.

Note: For more information about SDS, see the *CA Mainframe Software Manager Product Guide*.

You set up and configure the product once, typically on a test system, which becomes the deployment system. After the product is configured, you [create backup data sets for the configuration files](#) (see page 24). You can then use SDS to deploy the product target libraries and at the same time, the backup data sets as custom data sets. On the remote system, you can restore the configuration files from the deployed backup data sets.

How Deployment Works

Before you proceed to perform multisystem deployment, you should have one properly configured region.

Typically, deployment consists of the following stages:

1. Create a generic RUNSYSIN member and a generic initialization file for sharing between regions.
2. Copy the required data sets to and allocate them on the target systems.
3. Deploy started task members on target systems.
4. APF authorize load libraries on target systems.
5. Determine focal and subordinate regions.
6. Link regions to create the multisystem environment.

More information:

[Multisystem Configuration](#) (see page 26)

Software Changes

Changes are required to set up subsystem IDs, load libraries, and VTAM:

- Two subsystem IDs are required for the initialization of the required subsystems. The IDs have the following default values:
 - SOLV for the SOLVE Subsystem Interface (SSI), which enables a region to communicate with other software on the system
 - Domain ID of the region for the region interface that enables a region to issue operating system commands and receive messages

The SOLVE SSI started task and the region automatically identify these IDs to the system. If you want to set the IDs permanently, you can set them in the SYS1.PARMLIB(IEFSSNxx) member. Add the ID for the region interface first (after the job entry subsystem (JES)) in the list of subsystem names.

- The CC2DLOAD load library for CA NetMaster NM for SNA must be APF-authorized.
- A VTAM major node member, which contains application definition statements for all ACBs required by your product region, must be created and added to SYS1.VTAMLST. You can use the Create VTAM Definitions and Table option of the product's Install Utility to perform this task.

Note: For more information, see the *Installation Guide*.

Create Generic Initialization File and RUNSYSIN Member for Multiple Regions

Create a generic RUNSYSIN member that points to a generic initialization file so you can use the member for all the regions deployed in your enterprise.

To create generic initialization file and RUNSYSIN member

1. Generate the initialization file for a properly configured region.
2. Replace specific information in the file by product variables and system symbols.
A generic initialization file is created.

3. Replace specific information in RUNSYSIN by system symbols.
4. Update RUNSYSIN with the following statement:

```
PPREF= ' INIFILE=xxxxxINI '
```

xxxxxINI

Is the name of the generic initialization file.

A generic RUNSYSIN member is created.

5. Start the region using the generic RUNSYSIN member to verify that it is free of errors.

If initialization errors occur, review RUNSYSIN and the initialization file to correct the errors.

6. Repeat the previous step until the region initializes without error.

The generic RUNSYSIN member is ready for use by other regions.

Region Initialization File

Region customization parameters are stored in a virtual file system (VFS) data set, which is a virtual storage access method (VSAM) data set and is not easy to update outside of CA NetMaster NM for SNA. However, a RUNSYSIN member can point to an initialization file member in TESTEXEC by using the INIFILE parameter.

An initialization file is a Network Control Language (NCL) procedure that contains the parameter information.

When an initialization file is in use, the region gets the parameter information from the file at startup and updates the VFS data set. Because the region uses the initialization file each time it starts up, any changes you make manually using the /PARMS panel shortcut are not retained. To keep the changes, regenerate the file using the /CUSTOM.G panel path.

Even if you do not use the initialization file for region startup, you can use it as a backup of the parameters in the VFS data set by generating it before updating the parameters using /PARMS.

The initialization file is also useful during rollout to other systems because it is relatively simple to update for different systems. Through the use of product variables and system symbols, the file can be made generic enough for all the regions you plan to deploy.

Note: For more information about how to use a region initialization file, see the *Administration Guide*.

Generic Initialization File

You can modify an initialization file to use system symbols to support its use throughout your enterprise.

Example: Initialization File with System Symbols

The following sample code shows statements for the LOGFILES parameter group using the &SYSNAME system symbol:

```
.LOGFILES
  &$IAPLOGPR    = &STR $LOPROC
  &$IAPLOGVW    = &STR $LOBROW
  &$IAPLOGF1    = &STR NMLOG01
  &$IAPLOGD1    = &STR NETW.NM.NETM&SYSNAME.NMLOG01
  &$IAPLOG01    = &STR LSR SIS DEFER
  &$IAPLOGI1    = &STR SHR
  &$IAPLOGF2    = &STR NMLOG02
  &$IAPLOGD2    = &STR NETW.NM.NETM&SYSNAME.NMLOG02
  &$IAPLOG02    = &STR LSR SIS DEFER
  &$IAPLOGI2    = &STR SHR
  &$IAPLOGF3    = &STR NMLOG03
  &$IAPLOGD3    = &STR NETW.NM.NETM&SYSNAME.NMLOG03
  &$IAPLOG03    = &STR LSR SIS DEFER
  &$IAPLOGI3    = &STR SHR
```

Generic RUNSYSIN

By building a RUNSYSIN member using system symbols, you can create a generic RUNSYSIN member that can be deployed throughout your enterprise.

You can identify the symbols defined to your system from the response to the following system command:

```
D SYMBOLS
```

To tell the NETMASTR program to perform symbol substitution, include the following statement in RUNSYSIN:

```
SUBS=YES
```

Example: RUNSYSIN with System Symbols

The following sample code shows RUNSYSIN statements using the &SYSNAME and &SYSCONE system symbols:

```
SUBS=YES -* Required to invoke system symbols
PGM=NM001
ERROR=U0001
PPREF='PRI=NETM&SYSNAME' -* if &SYSNAME = "ABCD", PRI=NETMABCD
PPREF='NMDID=&SYSCONE.NW'
PPREF='INIT=NMINIT'
PPREF='READY=NMREADY'
PPREF='SSID=NMSS'
PPREF='DSNQLCL=NETW.NM.NETM&SYSNAME'
PPREF='DSNQLNV=NETW.NM.VSAM.NETM&SYSNAME'
```

Note: A symbol used in the middle of the name must be defined with two periods (..), for example:

```
DD=VFS,DISP=SHR,DSN=NETW.NM.NETM&SYSNAME..VFS
```

Data Set Deployment

During deployment, you copy the following data sets to the target systems. However, in a shared DASD environment, you do not need to copy those data sets that are marked as shareable.

Note: When deploying CA NetMaster NM for SNA with CA NetMaster NA, additional data sets specific to CA NetMaster NA are required as listed. For deployment with other CA NetMaster products, such as CA NetMaster NM for TCP/IP, see the *Best Practices Guide* specific to those products.

You must copy the following data sets:

- ALERTH
- ICOPANL
- MODSUSR
- MSDB
- NEWSBKP
- NEWSFIL
- NMLOG01
- NMLOG02
- NMLOG03
- NTSLOG
- PANLUSR
- PSPOOL
- RAMDB
- RAMDBST
- RAMDBWK
- REXXAN
- REXXREP
- TESTEXEC
- VFS

When deployed with CA NetMaster NA, the following additional data sets are required:

- CC18EXEC (shareable)
- RSDB

The following data sets can be shared:

- CC2AEXEC (shareable)
- CC2DEXEC (shareable)
- CC2DLOAD (shareable)
- MODSDIS (shareable)
- NETINFO (shareable)
- NSCNTL (shareable)
- OSCNTL (shareable)
- PANLDIS (shareable)
- PARMLIB (shareable)
- SSIPARM (shareable)
- UAMS (shareable)

One method to distribute data sets is to use a backup utility, such as DFDSS, to create a single data set that can be transferred to the target systems and restored.

When the Install Utility sets up a region, the utility creates the following data set members:

S10DUMP

Creates backup data sets that include the configuration files for the region. These backup data sets are *dsnpref.DFDSS.LOCAL* (containing files specific to the region) and *dsnpref.DFDSS.SHARED* (containing files that multiple regions can share).

S11REST

Restores the configuration files from the backup data sets.

After you submit the S10DUMP job, you use SDS to deploy the created backup data sets to the target system. Also, you copy the S11REST job to the target system. On the target system, you submit S11REST to restore the configuration files.

Started Task Deployment

During deployment, you copy the region and SOLVE SSI started task members to SYSx.PROCLIB on the target systems.

Software Changes on Target Systems

During deployment, you add the subsystem IDs and ACBs, and APF-authorize the load libraries on the target systems.

More information:

[Software Changes](#) (see page 19)

Multisystem Configuration

Regions can be linked together into a complex. Within a complex, you can have two types of regions: focal and subordinate.

A focal region has visibility to, and command and control capabilities over, every region in the complex, including other focal regions.

A subordinate region only sends data to the focal regions. A subordinate does not receive data from other regions in the complex.

To reduce network traffic, focal regions only receive status information if someone is actually using one of the various monitors.

In a multisystem environment, operators can log on to one focal region and monitor the entire complex.

The Resource Automation Monitor database (RAMDB) for a focal region contains copies of the system images for all regions within the complex. The RAMDB for a subordinate region contains only the system images for itself.

In general, you configure regions on communication management configuration (CMC) systems (hosts) as focal, and all the others as subordinate.

How You Prepare RAMDB Before Linking

You can use the following methods to prepare RAMDB before you link your regions to set up the multisystem environment:

Important! When you link two regions, one region has the database you want and the other region will have its database overwritten. Linking must always be initiated from the region whose database is to be overwritten.

- You can create the system images for the individual systems on which the regions are deployed. You then assign one region as focal, transmit the images from the other regions to it, and then link the other region to it.

The linking must be done from the new region where the database is deleted and rebuilt to mirror that in the focal region.

- You can create the system images for all the required systems in the complex in the main focal region. Then each new region can be deployed with the default RAMDB provided during setup. The default RAMDB is deleted and rebuilt with the required system images when the region is linked to the focal region.

After the regions are linked, their RAMDBs are kept synchronized automatically.

Note: For more information about how to set up a multisystem environment, see the *Administration Guide*.

Chapter 3: Monitoring Best Practices

This section contains the following topics:

[Session Tracking](#) (see page 29)

Session Tracking

Monitor SNA sessions and maintain history only for key applications, subsystems, and resources, such as CICS and IMS, to reduce the amount of management information being collected.

Business Value:

Maintaining session information for critical SNA-based applications assists network problem diagnosis. A quicker mean time to repair ensures that impact to critical business services is minimized. Conversely, collecting information that is insignificant in a business context places unnecessary overhead on the system.

Additional Considerations:

The Network Tracking System (NTS) component of CA NetMaster NM for SNA collects information about SNA sessions on your system. In a busy network, large amounts of management information can be collected. Therefore, collect only information of significance to your network management needs. For less important applications and resources, you can decide not to monitor the sessions or not to keep the history.

Even for critical applications and resources, it may not be desirable to monitor session activity continually. It may be more appropriate to activate monitoring only when problems occur.

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