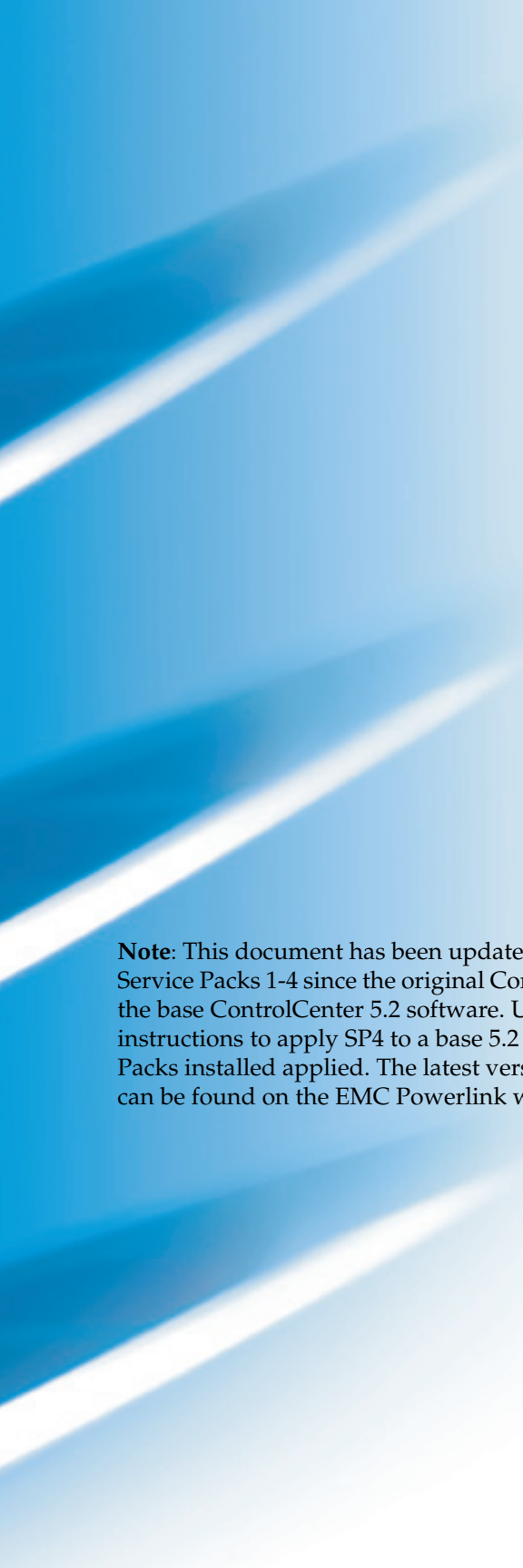




EMC ControlCenter 5.2 Service Pack 4

PLANNING AND INSTALLATION GUIDE VOLUME 2 (MVS AGENTS) P/N 300-002-649 REV A01

Note: This document has been updated to reflect the new ControlCenter features provided in Service Packs 1-4 since the original ControlCenter 5.2 release. Use this document to plan and install the base ControlCenter 5.2 software. Use the *EMC ControlCenter 5.2 Service Pack 4 Release Notes* for instructions to apply SP4 to a base 5.2 installation or a base 5.2 installation with previous Service Packs installed applied. The latest version of the *EMC ControlCenter 5.2 Service Pack 4 Release Notes* can be found on the EMC Powerlink website: <http://powerlink.emc.com>.

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As part of its effort to continuously improve and enhance the performance and capabilities of the Symmetrix product line, EMC periodically releases new versions of the EMC Enginuity Operating Environment and EMC ControlCenter. Therefore, some functions described in this guide may not be supported by all versions of Enginuity or EMC ControlCenter currently in use. For the most up-to-date information on product features, refer to your product release notes.

If an EMC ControlCenter feature does not function properly or does not function as described in this guide, please contact the EMC Customer Support Center for assistance.

Purpose of This Guide

This guide contains detailed information and updates for installing and configuring EMC ControlCenter 5.2 agents and applications for MVS.

This guide does *not* include information about installing EMC ControlCenter 5.2 SP4 agents and applications for MVS. For information about installing and configuring EMC ControlCenter 5.2 SP4 for MVS, see *EMC ControlCenter 5.2 Service Pack 4 Release Notes*.

For installation or configuration of open systems agents or infrastructure, refer to *EMC ControlCenter 5.2 Service Pack 4 Planning and Installation Guide, Volume 1*.

Audience

This guide is part of the EMC ControlCenter documentation set, and is intended for use by EMC ControlCenter system, database, server, and operation administrators.

Readers of this guide are expected to be familiar with the following topics:

- ◆ OS/390 and z/OS
- ◆ TCP/IP
- ◆ RACF or another SAF facility
- ◆ Symmetrix operation

Organization

The current guide is organized as follows.

Chapter 1, *Overview*, provides an introduction to EMC ControlCenter, its architecture, and how to plan your implementation.

Chapter 2, *Determining Configuration Parameters*, describes how to determine configuration parameters for installing EMC ControlCenter on MVS.

Chapter 3, *Testing the TCP/IP Configuration*, describes how to test and configure TCP/IP for MVS for agent use.

Chapter 4, *Monitoring MVS Attached Symmetrix Arrays*, describes how to deploy Solutions Enabler and configure the Proxy Storage Agent for Symmetrix.

Chapter 5, *Configuring IBM SMF and RMF Statistics Collection*, discusses how to configure IBM RMF to collect performance statistics on OS/390 and z/OS hosts.

Chapter 6, *Configuring Agent Access to System Resources*, provides information for configuring agent access to system resources in MVS.

Chapter 7, *Installing Master Agents on MVS Hosts*, describes how to install the Master Agent for the first MVS host.

Chapter 8, *Using the Console to Install Master Agents*, describes how to map RACF IDs to EMC ControlCenter IDs as well as other tasks.

Chapter 9, *Installing Agents on MVS Hosts*, describes how to install agents on MVS hosts.

Chapter 10, *Performing Agent Postinstallation Steps on MVS Hosts*, explains the postinstallation steps for EMC ControlCenter on MVS.

Chapter 11, *Performing Agent Setup in the Console*, discusses setting up the agents in the Console.

Chapter 12, *Troubleshooting the Installation of Agents for MVS*, provides tips for troubleshooting issues you might encounter when installing the agents for MVS.

Chapter 13, *Upgrading from a Previous Release*, provides instructions for upgrading to EMC ControlCenter 5.2 Service Pack 4 from a previous EMC ControlCenter release.

Appendix A, *Dataset Management for MVS Agents*, provides MVS dataset names created by EMC ControlCenter and the instructions for their management.

Appendix B, *Maintaining Agents for MVS*, discusses configuration and security issues after EMC ControlCenter agents for MVS agents have been installed.

Appendix C, *Installation and Configuration Parameters*, provides worksheets to prepare for agent installation.

Appendix D, *Upgrade Parameters for MVS Agents*, provides worksheets to prepare for agent upgrade.

Appendix E, *Messages*, lists MVS Master Agent messages.

Appendix F, *Enabling Edit ACS Source Feature for OS/390*, provides the procedures for setting up the IBM Workstation agent to enable access to the Edit ACS Source feature in the EMC ControlCenter Console.

An *Index* is provided at the back of this document.

Related Documentation

You can access ControlCenter publications from the:

- ◆ *Documentation /Help* CD (provided with your EMC ControlCenter installation kit)
- ◆ ControlCenter Documentation Library (available from the ControlCenter Console Help menu)
- ◆ EMC Powerlink Documentation Library (<http://powerlink.emc.com>)

Conventions Used in this Guide

EMC uses the following conventions for notes and cautions notices.

A note presents information that is important, but not hazard-related.



CAUTION

A caution contains information essential to avoid data loss or damage to the system or equipment. A caution may apply to hardware or software.

MVS Type Conventions

The syntax conventions used in this guide are:

- ◆ CAPITALIZATION = must be typed
- ◆ [] = optional entry
- ◆ | = alternative parameter value

EMC uses the following type style conventions in this guide:

AVANT GARDE	Keystrokes
Palatino, bold	◆ Dialog box, button, icon, and menu items in text ◆ Selections you can make from the user interface, including buttons, icons, options, and field names
<i>Palatino, italic</i>	◆ New terms or unique word usage in text ◆ Command line arguments when used in text ◆ Book titles
<i>Courier, italic</i>	Arguments used in examples of command line syntax.
Courier	System prompts and displays and specific filenames or complete paths. For example: working root directory [/user/emc]: c:\Program Files\EMC\Symapi\db

Where to Get Help

For questions about technical support, call your local sales office or service provider.

If you have a valid EMC service contract, contact EMC Customer Support at:

- United States:** (800) 782-4362 (SVC-4EMC)
- Canada:** (800) 543-4782 (543-4SVC)
- Worldwide:** (508) 497-7901

Follow the voice menu prompts to open a service call and select the applicable product support.

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<http://powerlink.emc.com>

Your Comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Please send a message to techpub_comments@emc.com with your opinions of this guide.

This chapter is an introduction to the EMC ControlCenter installation on MVS.

- ◆ Available Agents for MVS 1-2
- ◆ Requirements and Supported MVS Environments..... 1-3
- ◆ MVS Installation Overview 1-6
- ◆ Installation Notes 1-11

Available Agents for MVS

The agents that are available for MVS deployment are:

- ◆ Physical Agent for MVS
- ◆ Logical Agent for MVS
- ◆ Host Agent for MVS HSM
- ◆ Host Agent for MVS SMS
- ◆ Database Agent for DB2

Generally Unavailable Agents and Functionality

The following agents are generally unavailable (no longer available for deployment or upgrade) in EMC ControlCenter® 5.2:

- ◆ Backup Agent for TSM (mainframe agent only—the Open Systems agent of the same name remains, but active management is no longer supported)
- ◆ Storage Agent for IBM ESS (moved to Open Systems—now called *Storage Agent for ESS*)
- ◆ Storage Agent for RVA/SVA
- ◆ Tape Agent for MVS

The Alert and DCP definitions and templates folders for these agents still exist in the ControlCenter Console for maintenance purposes, but are not functional.

Although Database Agent for DB2 remains in ControlCenter, active management of mainframe DB2 databases (available in previous releases) is no longer be available in ControlCenter 5.2.

Refer to *EMC ControlCenter 5.2 Planning and Installation Guide, Volume 1* for details about Backup Agent for TSM and Storage Agent for ESS.

Requirements and Supported MVS Environments

Start with this section to review your environment for the hardware and software you can monitor and manage with EMC® ControlCenter, as well as ControlCenter software requirements.

To install any MVS agent, you must have:

- ◆ OS/390 or z/OS.
- ◆ TCP/IP: IBM Communications Server or Computer Associates Unicenter TCPAccess Communications Server.
- ◆ TSO/E.
- ◆ An FTP server on the host where you are installing or on a host that shares a JES spool with the host where you are installing.
- ◆ Sufficient space for the installation (refer to *Space Requirements for Installation* on page 1-14).

Refer to *EMC ControlCenter Support Matrix* on Powerlink™ for details on version support and software requirements for EMC ControlCenter on MVS hosts. The support matrix is the authoritative statement of product support.

Solutions Enabler and the Storage Agent for Symmetrix

Solutions Enabler for z/OS includes a SYMAPI Server. To access the MVS host view of Symmetrix® subsystems, you must have SYMAPI Server on the MVS system used to manage Symmetrix arrays. Also, the Symmetrix Agent on a Windows or Solaris host must be configured to communicate with the SYMAPI Server on the MVS host.

Storage Agent for Symmetrix does not run on MVS hosts (hence it is not described here). When running on an open systems host, Storage Agent for Symmetrix uses Solutions Enabler for z/OS to gather information about MVS-connected Symmetrix arrays.

The proxy configuration is described briefly in Chapter 4, *Monitoring MVS Attached Symmetrix Arrays*. In addition:

- ◆ For Storage Agent for Symmetrix requirements, refer to *EMC ControlCenter 5.2 Service Pack 4 Planning and Installation Guide, Volume 1*. Version-specific requirements are found in *EMC ControlCenter Support Matrix* on Powerlink.
- ◆ For Solutions Enabler for z/OS requirements, refer to *EMC Solutions Enabler for z/OS Installation Guide*.

Physical Agent for MVS (and Workload Analyzer)

Physical Agent for MVS requires EMC Symmetrix Control Facility (EMCSCF), part of EMC ResourcePak® Base for OS/390 and z/OS, installed and active. Refer to the *EMC ResourcePak Base for OS/390 and z/OS Product Guide* for information on setting up and running Symmetrix Control Facility. If you did not receive the EMC ResourcePak Base for OS/390 and z/OS software package with the EMC ControlCenter 5.2 Service Pack 4 software package, contact an EMC sales representative. Version-specific requirements are found in *EMC ControlCenter 5.2 Service Pack 4 Support Matrix*.

Physical Agent for MVS has certain SMF and RMF configuration requirements if you plan to use Workload Analyzer to analyze MVS host performance. Refer to Chapter 5, *Configuring IBM SMF and RMF Statistics Collection*.

Viewing MVS host performance statistics requires Physical Agent for MVS and the following components (refer to *EMC ControlCenter 5.2 Service Pack 4 Planning and Installation Guide, Volume 1* for details on both):

- ◆ Workload Analyzer Archiver, deployed using the ControlCenter Console
- ◆ Performance Manager, installed using the EMC ControlCenter installation CDs

Host Agent for MVS HSM

To run Host Agent for MVS HSM, you must have DFSMSHsm. For the Host Agent for MVS HSM to collect all possible data, it must be running on all images where DFSMSHsm is running.

Host Agent for MVS SMS

To run the Host Agent for MVS SMS, you must have:

- ◆ DFSMS.
- ◆ NaviQuest.
- ◆ Important IBM maintenance fixes, described in the release notes.
- ◆ Host Agent for HSM: This is required for Storage Group Occupancy Reports in the Host Agent for MVS SMS.
- ◆ The IBM Workstation Agent: This IBM utility is required to edit ACS routines through EMC ControlCenter. Refer to Appendix F, *Enabling Edit ACS Source Feature for OS/390*, for instructions on downloading and installing this utility on each Windows machine running the EMC ControlCenter Console.

Database Agent for DB2

Database Agent for DB2 requires IBM DB2. The agent supports up to 99 DB2 subsystems per host. Version-specific requirements are found in the *EMC ControlCenter Support Matrix* on Powerlink. Depending on the version of DB2 you are running, you may need additional utility products from IBM to use certain agent functions.

MVS Installation Overview

This section provides a summary of general steps and a discussion of the assumptions made in the installation procedures.

UPGRADE: If you are running a previous release of ControlCenter, look for upgrade notes like this one in the rest of this guide. For upgrade guidelines and procedures, refer to Chapter 13, *Upgrading from a Previous Release*.

Installing from the ECC Server and from Tape

You can deploy installation files directly from the ECC Server (a Windows machine) to an MVS machine. Alternatively, you can load the installation datasets from tape, if you have requested one.

- ◆ If you deploy from the ECC Server, then all the procedures you need are in this guide.
- ◆ If you want to load the datasets from tape, then use the release notes that come with the tape (*EMC ControlCenter 5.2 Service Pack 4 OS/390 Tape Cartridge Release Notes*). These release notes have the JCL you need to unload the installation dataset. From that point, you run the installation setup panels and return to use the procedures in this guide.
- ◆ If you deploy the datasets from CD-ROM, all the procedures you need are in this guide.

Regardless of the method you use, read through this chapter and perform the preinstallation steps before you begin deployment of the installation datasets.

Summary of the MVS Installation Process

This section provides an overview of the tasks required to install EMC ControlCenter agents on an OS/390 or z/OS system. Use the detailed procedures in the rest of this guide to perform the actual tasks.

Gather Information and Plan the Installation

Use the installation worksheets in Appendix C, *Installation and Configuration Parameters*, to gather the information you need. This includes identifying relevant system datasets, assigning high-level qualifiers for EMC ControlCenter, and identifying information about third-party products such as DB2.

Also, verify the requirements and supported environments described in this chapter and in *EMC ControlCenter Support Matrix* on Powerlink. Ensure that your environment has the necessary software and versions for the agents you intend to install.

Perform Preinstallation Steps

Before you begin installation, ensure that your environment is configured to run EMC ControlCenter. Preinstallation configuration includes:

- ◆ Security (SAF) configuration for the Master Agent.
- ◆ TCP/IP diagnostics and configuration for the Master Agent.
- ◆ SMF and RMF diagnostics and configuration (Workload Analyzer/Physical Agent for MVS).

You perform these steps on the MVS hosts on which you will install the agents.

Deploy and Install the Master Agent

Choose one MVS system on which to install EMC ControlCenter agents first, and use the OS/390 Master Agent Upload wizard to install the Master Agent to that system. The Master Agent runs on each MVS host and manages other EMC ControlCenter agents that perform storage functions.

The OS/390 Master Agent Upload wizard uses FTP to send an XMIT file and a JCL file to the target host and will send an ANSWERS file as well.

After you run the Master Agent Upload wizard, submit the transferred JCL to install the Master Agent.

You install the Master Agent for MVS using the wizard on a Windows system, usually on the ECC server, once per shared DASD environment. On all other hosts in that shared DASD environment, install the Master Agent using the Console. You can perform additional Master Agent installs for subsequent hosts from the Console without using the wizard.

In the wizard, you specify the high-level qualifiers for the product code and data libraries, and, optionally, where the installation datasets will be stored on the host.

Optionally, you can provide an APF-authorized dataset name to which you want the installation to install code datasets (otherwise, you will APF-authorize the load library during postinstallation). Also, you have several options for how to handle creation and copying of Master Agent started procedures to a JES PROCLIB.

Next, map EMC ControlCenter Console user IDs to SAF user IDs. Figure 1-1 shows the Map Console IDs to TSO IDs ISPF panel used for this step.

```

Installation of ControlCenter Agents for MVS - Map Console IDs Row 1 to 1 of 1
Command ===                               Scroll ==> CSR

Name: MVS1                               Current Process: Product Configuration

To Add or Update entries, key in data then press Enter
  RACF ID  Console User ID

Action RACF ID  Console User ID      Valid Action:  D to delete an entry
      TSO001    ECCADMIN

***** Bottom of data *****

```

Figure 1-1 Map Console IDs to TSO IDs ISPF Panel

Perform Master Agent Postinstallation

After installing the Master Agent, ensure that the product libraries are APF-authorized and ensure that Master Agent PROCs are present in a JES PROCLIB. Start the Master Agent on the host and verify startup.

Install Agents on the First Host

For the first host on which you installed the Master Agent, we recommend starting the Console and installing agents on that host. Return to the host to copy agent PROCs and start the agents. Test some of the agent functions in the Console to confirm the agents are working properly.

Troubleshoot the Installation

If the Master Agent or other agents do not start properly or you receive errors on startup, troubleshoot possible TCP/IP, security, or authorization problems. Refer to Chapter 12, *Troubleshooting the Installation of Agents for MVS*.

Install the Master Agent on Other Hosts in the Sysplex

To install Master Agents on subsequent MVS systems, do one of the following:

- ◆ For systems in the same Sysplex that *share* DASD with the first system, install Master Agents from the EMC ControlCenter Console using a process called *cloning*. Clone the Master Agent from the host where you already installed it. Repeat for each host in the Sysplex. Perform postinstallation.
- ◆ For systems that *do not* share DASD with the first system, repeat the Master Agent Upload and submit the installation JCL on the new target system. Perform postinstallation.

Install ResourcePak Base

On the MVS hosts that will run Physical Agent for MVS, install EMC Symmetrix Control Facility (EMCSCF), part of EMC ResourcePak Base for OS/390 and z/OS. Refer to the *EMC ResourcePak Base for OS/390 and z/OS Product Guide* for instructions.

Install and Configure Agents for MVS

After you start the Master Agent, you are ready to begin installing agents for MVS through the EMC ControlCenter Console.

Install Agents on Hosts in the Sysplex

Some agents have generic installation parameters that normally apply to all hosts in a Sysplex. Install the following agents on all hosts in the Sysplex simultaneously:

- ◆ Physical Agent for MVS
- ◆ Logical Agent for MVS
- ◆ Host Agent for MVS SMS
- ◆ Host Agent for MVS HSM

Database Agent for DB2 has host-specific parameters requiring it to be installed separately on each host. Install it one host at a time.

For most agents, you complete a **Questions** dialog box using the values from the installation parameters worksheet for the agent. An install log informs you of the results of the installation and provides information about how to continue.

Perform Agent Postinstallation

After you install an agent, you copy its PROCs to a JES PROCLIB (unless the Master Agent installation is configured to do this automatically). Certain agents require additional postinstallation on the host, including the Host Agent for MVS HSM, the Database Agent for DB2, and the Logical Agent for MVS. Do not start these agents until you have performed their postinstallation steps.

Start the Agents

After you complete postinstallation, you must start the agents using an MVS operator command on each host. For many agents, you are ready to begin using them immediately. For others, agent setup is either required or beneficial to enable more functions.

Perform Agent Setup in the Console

Some agents have setup steps you perform in the Console. Agent setup typically configures data collection for reporting, provides needed load library names for EMC and third-party products, or specifies additional resources for EMC ControlCenter to manage, beyond those specified at installation time.

After Installation Is Complete

After you finish installing, configuring, and starting the MVS agents, you may need to perform additional measures described briefly here.

Perform Troubleshooting and Maintenance

This guide contains information about troubleshooting your installation, as well as maintaining the agents for MVS.

Install Other Components Not Described in This Guide

The following components use data collected on MVS hosts. This guide describes configuration requirements for these components, but actual installation procedures are provided in other guides.

- ◆ Storage Agent for Symmetrix, Workload Analyzer Archiver, and Performance Manager (refer to *EMC ControlCenter 5.2 Service Pack 4 Planning and Installation Guide, Volume 1*).
- ◆ Solutions Enabler for z/OS (installed from tape on the MVS host). Refer to *EMC Solutions Enabler for z/OS Installation Guide*.

Get Started with EMC ControlCenter

After you finish installing the agents and starting them, refer to the following to learn how to use EMC ControlCenter. All are available in the Documentation Library (accessed from the ControlCenter Console help menu) and on the documentation CD-ROM.

- ◆ *EMC ControlCenter 5.2 Service Pack 4 Overview*
- ◆ *EMC ControlCenter 5.2 Service Pack 4 Administration/User Guide*
- ◆ *EMC ControlCenter Console Quick Start Tutorial*
- ◆ EMC ControlCenter Online Help (available from the Console help menu)

Installation Notes

This section describes general information about the system access you need to install ControlCenter, as well as information about dataset management and high-level qualifiers used by ControlCenter.

System Access during Installation

In the installation and postinstallation procedures, certain steps instruct you to repeat the step for all MVS systems that will be running ControlCenter. These instructions assume that you are installing the Master Agent on multiple OS/390 or z/OS systems that share DASD. The installation software and instructions allow you to install the Master Agent on a single system and share it with others in a shared DASD environment.

You must perform certain functions on each MVS system, regardless of whether the MVS systems share DASD.

On a Windows System

On the ECC Server, you complete a wizard (OS/390 Master Agent Upload) that transmits the MVS distribution files (the `XMIT`, `JCL`, and `ANSWER` files) to the MVS system from which you will install the product. You typically run this installation deployment wizard from the Desktop of the server on which the ECC Server is running. You can also run the wizard on a Windows machine from the ControlCenter installation CDs, using the instructions in this guide to extract and run the necessary file.

On a Single MVS System

You perform many installation functions on a single MVS system only. From a single MVS system, you run a job that extracts the `XMIT` dataset and installs the Master Agent.

If you have MVS systems that do not share DASD with one another, you must perform the entire installation process for each of the isolated systems or environments, including the OS/390 Master Agent Upload wizard.

On All MVS Systems

You perform many of the Master Agent postinstallation steps on each system where the product runs.

On each MVS system, you will perform some or all of the following:

- ◆ APF-authorize the product load library (unless you installed the product in an existing library that is already APF-authorized on the image).

- ◆ Add the product's started procedures to a JES PROCLIB (unless you specified a PROCLIB during installation).
- ◆ Start the product with an MVS start (S) command.

There may be other agent-specific functions you have to perform on each system as well. These are described in the pre- and postinstallation steps.

Naming Conventions for Dataset Prefixes

Datasets use prefixes as described in this section. You decide these prefixes as appropriate for your environment, but it is essential to distinguish between datasets containing product code (*codehlq* datasets) and datasets for historical data and other information collected by ControlCenter agents (*dataahlq* datasets). Miscellaneous high-level qualifiers and important variables are also described.

Remember the values you use for high-level qualifiers and dataset names. You will use them during the installation of ControlCenter.

The following high-level qualifiers or dataset names are used by ControlCenter agents for MVS for executable code, historical and working data, APF authorization, and error logging:

- ◆ *codehlq* is the high-level qualifier used during installation for naming ControlCenter agent libraries. The *codehlq* libraries are the executables used to run the agent on OS/390 and z/OS systems. You can share them among images.

The codehlq value must be unique in the entire environment and cannot be the same as the high-level qualifier used for ControlCenter data libraries or for any other product or data. Never manually edit the contents of a codehlq dataset.

UPGRADE: Specify a *codehlq* different from the previous release of ControlCenter when upgrading.

- ◆ *dataahlq* is a high-level qualifier ControlCenter uses to name data libraries (datasets it creates during processing) and other datasets it creates and updates. *This high-level qualifier must be unique on each MVS image and must be used only for ControlCenter agent data.* The *dataahlq* datasets include collected storage data, customized initialization files, work datasets, and other files created and updated during and after installation.

UPGRADE: Specify the same *datahlq* that you used for the previous release when upgrading to the current release.

You must use different prefixes for *codehlq* and *datahlq* datasets. In addition, the data high-level qualifier *datahlq* has a 17-character limit. Also, *datahlq* must be different on each system.

- ◆ *apfdsn* is an optionally specified preexisting APF-authorized load library where ControlCenter authorized modules will be kept. You do not have to specify this value in the installation if you have authority to APF-authorize datasets.
- ◆ *erloghlq* is a high-level qualifier for an error log dataset used by Backup Agent for TSM (which is no longer generally available—refer to *Generally Unavailable Agents and Functionality* on page 1-2). ***erloghlq* applies to upgrades only and does not apply to new installations.** You must ensure that Tivoli Storage Manager can dynamically allocate the dataset under this high-level qualifier.

Definitions of PARMLIB and MVS

In this guide, two terms used frequently are PARMLIB (otherwise listed as SYS1.PARMLIB) and MVS.

When the term PARMLIB is used, assume it refers to SYS1.PARMLIB or an equivalent dataset at your site. SYS1.PARMLIB is a standard IBM OS/390 and z/OS library in which commands and configuration data are stored, so you can type a single short command to start an application instead of having to specify a fully-qualified dataset name.

When the term MVS is used in this book, it refers to all versions of OS/390 and z/OS operating systems for the IBM mainframe.

Space Requirements and Dataset Management

As a part of the installation, the program creates datasets for which you need to provide space and management protocols. Also, individual agents create work datasets for which you should anticipate space requirements and management practices. In particular, there are certain datasets you must avoid deleting. These are noted in Table A-1 on page A-2 and Table A-2 on page A-7.

Space Requirements for Installation

To ensure that your installation procedures complete successfully, use the minimum space requirements in Table 1-1. Ensure that you have sufficient space on each host.

These space requirements apply to installation only. The agents require additional space depending on activity in your systems and on the growth of historical data (described in Appendix A, *Dataset Management for MVS Agents*).

Table 1-1 Space Requirements for Installation

Installation Performed	Code Datasets (<i>codehlq</i>)	Data Datasets (<i>datahlq</i>)
Master Agent Upload	1,665 tracks ^a	0 tracks
Master Agent Installation through <code>RMTINST.JCL</code> (first host in a Sysplex)	3,957 tracks	255 tracks
Master Agent installation through cloning (subsequent hosts in a Sysplex)	0 tracks	255 tracks
Master Agent Startup	0 tracks	20 tracks
Database Agent for DB2	18 tracks	15 tracks
Host Agent for MVS HSM	18 tracks	50 tracks (140 tracks if Logical or SMS agents are not yet installed) ^b
Host Agent for MVS SMS	18 tracks	0 tracks (90 tracks if HSM or Logical agents are not yet installed) ^b
Logical Agent for MVS	18 tracks	316 tracks (406 tracks if HSM or SMS agents are not yet installed) ^b
Physical Agent for MVS	18 tracks	0 tracks
Total space required to upload files, install Master Agent, and install all other agents on a single host	5,712 tracks	861 tracks

- a. After the Master Agent is installed and running, you can reclaim 1650 tracks by deleting `codehlq.RMTINST.JCL` and `codehlq.RMTINST.XMIT` files.
- b. The HSM, Logical, and SMS agents share three files that occupy 90 tracks of space. Whichever agent is installed first will allocate these files. The remaining two agents will detect that the files already exist and will not allocate a new copy.

This chapter discusses how to determine configuration parameters necessary for installing ControlCenter agents for MVS.

Before you install ControlCenter agents on MVS, complete the installation worksheets in Appendix C, *Installation and Configuration Parameters*, or Appendix D, *Upgrade Parameters for MVS Agents*. These worksheets contain parameter tables and descriptions.

This chapter contains the following:

- ◆ Using the Installation Worksheets (MVS Agents) 2-2
- ◆ Identifying Hostnames for Master Agent Installation 2-3
- ◆ Specifying a Catalog Solution Load Library 2-6

Using the Installation Worksheets (MVS Agents)

During preinstallation planning, you should complete the worksheets in Appendix C, *Installation and Configuration Parameters*, or Appendix D, *Upgrade Parameters for MVS Agents*. The worksheets contain parameter tables and descriptions.

The worksheets are an important way to plan ahead for your ControlCenter installation. Completing the worksheets allows you to:

- ◆ Gather all the information you require.
- ◆ Make decisions about how you want to conduct certain installation steps.
- ◆ Complete installation dialog boxes more quickly and efficiently.

Identifying Hostnames for Master Agent Installation

During initial Master Agent installation, you transfer files via FTP from the ECC Server (or another Windows host) to an MVS host with an FTP server. The FTP MVS host may or may not be the same as the host where you install the Master Agent.

Therefore, during installation, you also specify the JES node for the host where you will actually install the Master Agent.

This section describes how to determine the hosts in the same JES spool and how to determine the JES node name for a host.

Understanding Host Specifications in the Master Agent Installation

In the OS/390 Master Agent Upload wizard, you specify the host to which you will transfer the installation files and the host on which you will perform the actual installation job. These may be the same or different hosts. If they are different, use the following diagram to understand how to make the correct specifications.

Note that for the intended installation host, you use the JES node, not the hostname. These may be the same in some environments but are technically different.

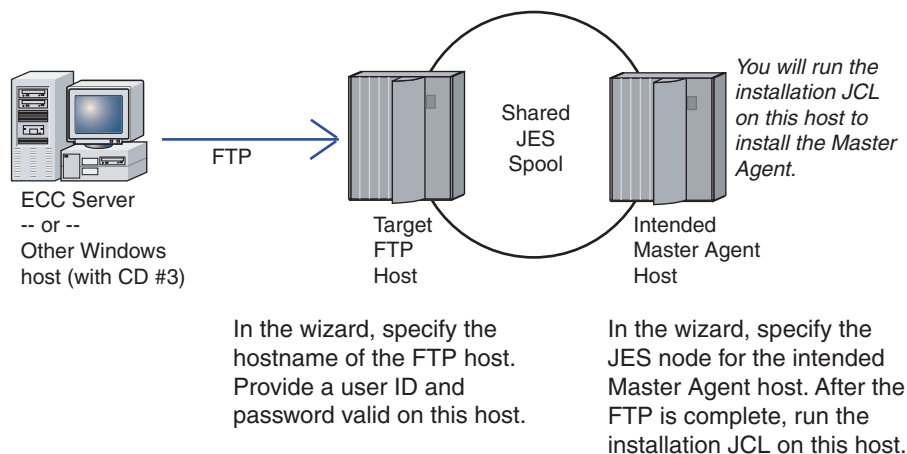


Figure 2-1 Identifying Hostnames for Master Agent Installation

Identifying the JES Node for JES2 Environments

Use the JES2 commands in this section to determine the necessary hostname information.

Determining the SYSAFF Node Configuration Parameters

First, determine the SYSAFF node of the host where you want to install the Master Agent. Then, ensure that this host is in the same JES spool as the FTP host.

To determine the SYSAFF node of a host:

1. On the host, issue the JES2 command:

```
$DMASDEF
```

2. Record this value in Table C-1, *Configuration Parameters: OS/390 Master Agent Wizard*, on page C-3 (for a clean installation) or Table D-1, *Configuration Parameters: OS/390 Master Agent Wizard*, on page D-2 (for an upgrade of the Master Agent).

Determining the Hosts that Share a JES2 Spool

To determine the hosts that share a JES2 spool:

1. Issue the JES2 command:

```
$DMEMBER
```

2. Ensure that both the target FTP host and the desired Master Agent installation host are in the list.

How the JES Node Name Is Used

For JES2 Environments

This section describes how the installation job uses the JES node.

For JES Node, enter the JES system affinity node for the host. This field is required for all installations. If the target FTP host and the intended Master Agent host are the same, then specify the SYSAFF node name of that host.

This information will update the JES2 control statement in the install JCL:

```
/*JOBPARM SYSAFF=node
```

where *node* is the host where you will run the uploaded installation JCL and install and start the Master Agent.

For JES3 Environments

For JES Node, use the SYSTEM name of the host as known to JES3. This field is required for all installations. If the target FTP host and the intended Master Agent host are the same, then specify the JES3 SYSTEM name of that host.

This information will update the JES3 control statement in the install JCL

```
//*MAIN SYSTEM=node
```

where *node* is the host where you will run the uploaded installation JCL and install and start the Master Agent.

Specifying a Catalog Solution Load Library

In the Logical Agent for MVS parameters, you can specify a value for the Catalog Solution® load library. You supply this dataset name as one of the parameters described in *Logical Agent for MVS Parameters* on page C-12.

- ◆ If you have Catalog Solution, specify its load library name.
- ◆ If you do not have Catalog Solution, leave the field blank.

Providing a Catalog Solution Load Library Name

In ControlCenter, a limited set of default MVS catalog management functions is available through system utilities invoked by the Logical Agent for MVS. A wider set of functions is available by supplying the load library dataset name of Catalog Solution during installation.

Catalog Solution is a separately licensed and installed product available from EMC.

The rest of this section lists the applicable functions and also describes how to supply the load library dataset name for Catalog Solution.

Catalog and Dataset Functions

All functions listed in this section are fully available through ControlCenter if you specify the Catalog Solution load library as a configuration parameter during installation.

If you do not specify a Catalog Solution load library, then catalog management functions are affected as shown in Table 2-1.

Table 2-1 Catalog Functions on a Non-Catalog Solution Host

Functions Available through Standard Utilities (Complete Information) ^a	Functions Available through Standard Utilities (Limited Information) ^b	Functions Not Available without Catalog Solution ^c	
EXAMINE OF CATALOG ALERT	EXPLORE DATA SETS UNDER AN ALIAS	ALIAS SPACE CHECK ALERT AND REPORT	TERASAM CANDIDATES REPORT
ORPHAN CATALOG ENTRIES ALERT	EXPLORE DATA SETS IN A CATALOG	CSL DUMP OF CATALOG/VVDS ALERT AND REPORT	GDGS DEFINED INCORRECTLY REPORT
LIST ATTRIBUTES	EXPLORE BY DSN MASK	ALIAS SPACE CHECK ALERT AND REPORT	ALIAS SPACE REPORT

Table 2-1 Catalog Functions on a Non-Catalog Solution Host (continued)

Functions Available through Standard Utilities (Complete Information) ^a	Functions Available through Standard Utilities (Limited Information) ^b	Functions Not Available without Catalog Solution ^c	
		CSL SYSTEMCHECK OF CATALOG/VVDS	VSAM ATTRIBUTES REPORT
		ORPHAN CATALOG ENTRY ALERT AND REPORT	CATALOG SHARING
		CSL DIAGNOSE	CA SPLITS ALERT
		CSL DUMP ALERT AND TRANSACTION	LOGICAL EXPLORE OF OPEN EDITION
		EXTENT REPORT - ALERT AND REPORT	SEARCH OPEN EDITION FILESYSTEM
		CSL SYSTEMCHECK ALERT AND TRANSACTION	PHYSICAL EXPLORE OF OPEN EDITION
		CSL SCAN ALERT AND TRANSACTION	SERVICE MODULE TO INVOKE CSL
		VSAM CA SPLITS REPORT	SERVICE MODULE TO PROCESS CSL

- a. In a non-Catalog Solution environment, the listed ControlCenter functions are performed through standard utilities (including IDCAMS) with full functionality.
- b. In a non-Catalog Solution environment, the listed ControlCenter functions are performed through standard utilities with less available information than through Catalog Solution.
- c. The listed ControlCenter functions are not available if the Catalog Solution load library is not specified as a configuration parameter for ControlCenter Logical Agent for MVS. You will receive message MML9006E if you attempt these functions in a non-Catalog Solution environment.

Testing the TCP/IP Configuration

This chapter explains how to test the TCP/IP configuration on MVS hosts to ensure that ControlCenter agents for MVS installed on these hosts can communicate with the ECC Server.

If TCP/IP is not properly configured on each of the MVS hosts on which you want to install ControlCenter agents, you will not be able to collect information about the objects the agents are monitoring.

To ensure that TCP/IP is properly configured on each MVS host, before you install ControlCenter agents on them, perform the MVS TCP/IP diagnostic tests in this chapter.

If you experience problems when starting the agent(s), refer to Chapter 12, *Troubleshooting the Installation of Agents for MVS*.

- ◆ Understanding TCP/IP Product Support in ControlCenter3-2
- ◆ Validating ECC Server and MVS Host Connection3-3
- ◆ Identifying TCP/IP Configuration.....3-4
- ◆ Establishing Hostname Resolution3-6
- ◆ Creating BSD-Style Host Tables.....3-8

Understanding TCP/IP Product Support in ControlCenter

In the current release, agents installed on MVS support specific versions of IBM Communications Server and Computer Associates Unicenter TCPaccess Communications Server (formerly NetworkIT TCPaccess). Refer to the *EMC ControlCenter Support Matrix* on Powerlink for versions and product names. Though ControlCenter supports these TCP/IP products, agents for MVS require certain configuration settings that allow them to resolve the name of the MVS host and the ECC Server. Once the host meets these settings, you can install the agents.

To test and gather information about your TCP/IP configuration, this chapter uses the following tools:

- ◆ PING
- ◆ NSLOOKUP (TCPaccess)
- ◆ HOMETEST (IBM Communications Server)

For Computer Associates TCPaccess, when configuring the Master Agent during installation or upgrade, you must specify an available port for the ControlCenter agent for MVS that is between 1024 and 4095. *Do not* use the default port value of 11051.

Validating ECC Server and MVS Host Connection

All ControlCenter agents must be able to communicate with the ECC Server. Perform the following steps to ensure that the MVS host on which you want to install ControlCenter agents can communicate with the ECC Server and vice versa.

Once you can successfully ping each MVS host and the ECC Server, continue to *Identifying TCP/IP Configuration* on page 3-4 to obtain information about the current TCP/IP configuration on the MVS host.

IBM Communications Server

If you are using IBM Communications Server, do the following:

1. Contact your ECC administrator to get the name and IP address of the ECC Server. Add this information to *OS/390 Master Agent Upload Wizard Parameters* on page C-3.
2. Use the `TSO PING` command to verify you can reach the ECC Server from the MVS host.
3. Ping the MVS hostname and IP address from the ECC Server to verify that you can reach the MVS host from the ECC Server.
4. Repeat steps 1 through 3 for each MVS host.

TCPassess

If you are using TCPPassess, do the following:

1. Contact your ECC administrator to get the name and IP address of the ECC Server. Add this information to *OS/390 Master Agent Upload Wizard Parameters* on page C-3.
2. Use the `TSO PING` command to verify you can reach the ECC Server from the MVS host.

To cause TSO PING to end on its own, make sure that you specify `-c nnn`, where *nnn* is the number of times (count) you want it to run before quitting. If you do not specify a count number, you must stop the entire TSO session.

3. Ping the MVS hostname and IP address from the ECC Server to verify that you can reach the MVS host from the ECC Server.
4. Repeat steps 1 through 3 for each MVS host.

Identifying TCP/IP Configuration

On each MVS host where you plan to install agents for MVS, you need to locate and identify the name of the TCP/IP parameter dataset, which contains the TCP/IP configuration parameters. The name of the dataset differs depending on which TCP/IP product you are using: IBM Communications Server or Computer Associates TCPAccess.

IBM Communications Server

If you are using IBM Communications Server, run the HOMETEST utility and review the output for the name of the TCP/IP parameter dataset. Then record the name of the dataset, which you will specify in the installation setup panels when installing the Master Agent for MVS wizard.

To locate the IBM Communications Server TCP/IP parameter dataset:

1. Type the following to run the HOMETEST utility, from the ISPF Primary Option menu:

TSO HOMETEST

If HOMETEST runs successfully, you see the following message in the HOMETEST output:

```
EZA0622I Hometest was successful - all Tests Passed!
```

2. In the HOMETEST output, locate the following line:

```
EZA0620I The TCP/IP system parameter file used will be
"tcp.ip.parms.data.set(member)".
```

where *tcp.ip.parms.data.set(member)* is the name of the TCP/IP parameter dataset, also called TCPDATA or SYSTCPD DD.

If HOMETEST does not run successfully or does not list a TCP/IP PARMS dataset, ask your systems programmer for the name of the dataset. Typical values for this dataset are:

```
SYS1.TCPPARMS(TCPDATA)
TCPIP.TCPIP.TCPDATA
```

3. Record the name of the TCP/IP parameter dataset in *OS/390 Master Agent Upload Wizard Parameters* on page C-3.

4. If the TCP/IP parameter dataset is different for some hosts, record the value in *Clone Master Agent Worksheet* on page C-6.

TCPaccess

If you are using Computer Associates UniCenter TCPaccess Communications Server, ask a knowledgeable systems programmer or search the system for the TCP/IP parameter dataset. Then record the name of the dataset, which you will specify when installing the Master Agent for MVS.

To locate the TCPaccess TCP/IP parameters dataset:

1. Locate the TCP/IP parameter dataset:

`tcpaccess.hlq.tcpip.data`

where `tcpaccess.hlq` is the high-level qualifier of the TCPaccess product.

You may need to contact your systems programmer or consult the TCPaccess documentation for the name of this dataset.

2. Record the name of `tcpaccess.hlq.tcpip.data` in *OS/390 Master Agent Upload Wizard Parameters* on page C-3.
3. If the TCP/IP parameter dataset is different for some hosts, record the value for each host in *Clone Master Agent Worksheet* on page C-6.

Establishing Hostname Resolution

ControlCenter agents for MVS need to access the name and IP address of the MVS hosts on which they are installed and the ECC Server. This IP information resides on DNS servers or host tables. If the MVS host uses a DNS server, the agents on the host can resolve the name of the host and ECC Server, as long as the DNS server is up. If the host is not using a DNS server, or the DNS server is down, you must create a Berkeley Software Distribution (BSD) style host table that contains the required IP information that the agents for MVS can use instead. Refer to the section for your TCP/IP product next for more information.

IBM Communications Server

If you are using IBM Communications Server, check the HOMETEST output to determine if the MVS host is using a DNS server or host tables to resolve the name of the MVS host and the ECC Server. Refer to the *IBM Communications Server* section of *Identifying TCP/IP Configuration* on page 3-4 for information on running the HOMETEST utility.

DNS Server

If HOMETEST located a DNS server, you see the following in the HOMETEST output:

```
EZA0605I Using Name Server to Resolve mvs.host.name
```

where *mvs.host.name* is the name of the MVS host.

Since the host is using DNS, the agents for MVS will be able to resolve the hostname. You are done with the diagnostic testing for IBM Communications Server. Continue to the next chapter.

Host Tables

If HOMETEST discovered host tables, you see the following in the HOMETEST output:

```
EZA0605I Using Host Tables to Resolve mvs.host.name
```

where *mvs.host.name* is the name of the MVS host on which the agents for MVS are installed.

This test verifies that there are MVS style host tables that are configured correctly for the MVS host, but agents for MVS require a

BSD style host table that has the correct filename and contains both the name and IP address of the following:

- ◆ The host(s) that uses the host table
- ◆ The ECC Server

Refer to Figure 3-1 on page 3-8 for an illustration. For the procedure on creating BSD style host tables, refer to *Creating BSD-Style Host Tables* on page 3-8.

TCPaccess

If you are using Computer Associates TCPaccess and the MVS host is using a DNS server to resolve the name of the MVS host and ECC Server, use the instructions in this section to ensure that the MVS host is properly configured.

If you know that the MVS host is not using a DNS server, you must create a BSD style host table (agents for MVS can only read BSD style host tables) that has the correct file name and contains both the name and IP address of the following:

- ◆ The host(s) that uses the host table
- ◆ The ECC Server

Refer to Figure 3-1 on page 3-8 for an illustration. For the procedure on creating BSD style host tables, refer to *Creating BSD-Style Host Tables* on page 3-8.

To ensure that DNS is properly configured for TCPaccess:

1. Locate the TCP/IP parameter dataset
`tcpaccess.hlq.tcpip.data`, where `tcpaccess.hlq` is the high-level qualifier of the TCPaccess product.

This is the same dataset that you located in the *TCPaccess* section of *Identifying TCP/IP Configuration* on page 3-4. You may need to contact your systems programmer or consult the TCPaccess documentation for the name of this dataset.

2. Edit `tcpaccess.hlq.tcpip.data` and locate the keyword `NSINTERADDR`.
3. Check that the IP address of the DNS server is listed under `NSINTERADDR`. Add up to three DNS server IP addresses, one per `NSINTERADDR`, if none are listed.

You may need to contact your systems programmer for the IP addresses of DNS servers.

Creating BSD-Style Host Tables

If you are not using a DNS server to resolve the name of the MVS host on which you want to install agents for MVS and the ECC Server, you need to create a host table. The host table must be in the Berkeley Software Distribution (BSD) style and contain the IP address of both the MVS host(s) and the ECC Server, as shown in Figure 3-1. Once you create the host table, ControlCenter agents for MVS can access the necessary IP information from it.

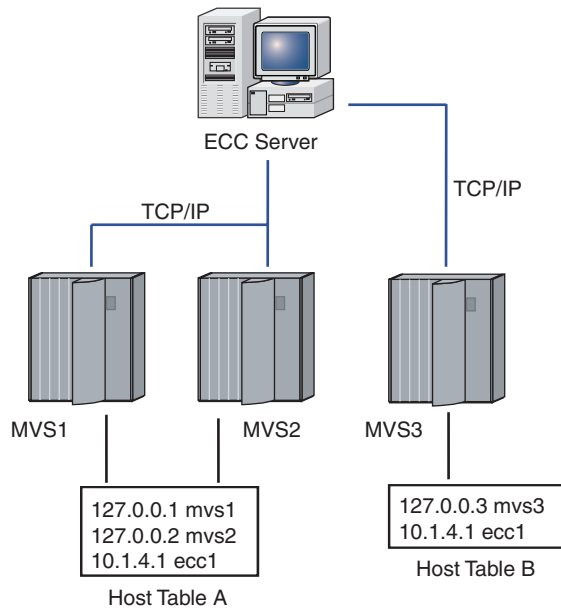


Figure 3-1 BSD-Style Host Tables

Locating Existing Host Tables

Host tables currently on the MVS host may contain the IP information that you need. Search the host for existing host tables.

Here are some examples of typical filenames for MVS- and BSD-style host tables; you may need to contact your systems programmer for other possible host table names:

- ◆ MVS style: HOSTS.LOCAL, TCPIP.LOCAL
- ◆ BSD style: ETC.HOSTS, TCPIP.ETC.HOSTS

If you are using the HFS filesystem, BSD style host tables may also reside in `/etc/hosts`.

If the host tables are not BSD style (`ETC.HOSTS`, `TCPIP.ETC.HOSTS`), you need to create a BSD style host table equivalent to the existing host tables. Refer to the next section, *Creating New BSD-Style Host Tables*.

Creating New BSD-Style Host Tables

If you currently do not have a BSD style host table at your site, this section explains how to create a new one with the correct settings and IP information for use with the ControlCenter agents for MVS.

To create new BSD style host tables for ControlCenter agent use:

1. Create a host table and name it either `ETC.HOSTS` or `tcpipprefix.ETC.HOSTS`. Depending on your TCP/IP product, `tcpipprefix` is one of the following:
 - IBM Communications Server—the `DATASETPREFIX` specified in your TCP/IP parameter dataset; the default prefix is `TCPIP`.
 - TCPaccess—the high-level qualifier for the TCPaccess product.

These are the acceptable host table filenames that the ControlCenter agents for MVS recognize.

The host table must have the following MVS DCB characteristics:

- sequential (`DSORG=PS`),
 - fixed-blocked (`RECFM=FB`),
 - logical record length of 80 (`LRECL=80`),
 - blocksize (`BLKSIZE=n×80`), where *n* is the number of records to be contained in one block. If you are using DFSMS to manage datasets, you can specify `BLKSIZE=0` to let DFSMS select the optimum blocksize for the storage device.
2. Edit the BSD style host table and add the IP address and name of:
 - Each MVS host using the host table.
 - The ECC Server.

Refer to Figure 3-1 on page 3-8.

If you have an existing host table (for example, `HOSTS.LOCAL` for MVS style) you can edit or browse it and specify the same IP information it contains in the BSD style host table. Refer to *Locating Existing Host Tables* on page 3-8.

Make sure that your entries are formatted in the BSD style.

Your host table is now in an acceptable format that the agents for MVS can use. Continue to the next chapter.

Monitoring MVS Attached Symmetrix Arrays

This chapter discusses how Solutions Enabler for z/OS and a proxy Storage Agent for Symmetrix work together to monitor Symmetrix arrays in an MVS environment. The agents for MVS do not monitor or manage Symmetrix systems. Rather, the Storage Agent for Symmetrix on an open systems host manages Symmetrix arrays through SYMAPI Server running on the MVS host.

- ◆ Implementing Proxy Configuration for Array Management.....4-2
- ◆ Configuring Data Collection to Minimize CPU Utilization.....4-3

Implementing Proxy Configuration for Array Management

For ControlCenter to manage Symmetrix subsystems attached to MVS hosts, EMC SYMAPI Server must be installed and running on the MVS host that will be used to manage the Symmetrix subsystems. The Storage Agent for Symmetrix runs as a proxy agent that monitors Symmetrix subsystems from a Windows, Solaris, HP-UX, or AIX host, using SYMAPI Server running on the MVS host.

For installation and configuration procedures:

- ◆ Refer to *EMC Solutions Enabler for z/OS Installation Guide* for installation instructions for SYMAPI Server on the MVS host.
- ◆ Refer to *EMC ControlCenter 5.2 Service Pack 4 Planning and Installation Guide, Volume 1* for Storage Agent for Symmetrix installation instructions.
- ◆ Refer to the EMC ControlCenter Online help for configuration procedures for the Proxy Discovery data collection policy. Also, use the information provided here to help you.

The Storage Agent for Symmetrix and SYMAPI Server function independently of the agents that run on MVS. The order in which you install, start, and run these components is irrelevant. The basic steps are as follows:

1. Install the ControlCenter infrastructure.
2. On an MVS host connected to a Symmetrix subsystem, install SYMAPI Server (if not already installed). Refer to the *EMC ControlCenter 5.2 Service Pack 4 Support Matrix* for version information.
3. Using the Console, install the Storage Agent for Symmetrix on a Windows, Solaris, HP-UX, or AIX host.
4. In the Console, configure the Proxy Discovery data collection policy for Storage Agent for Symmetrix. Provide information about the MVS hosts to which the agent will connect.

The hostname you provide in the Proxy Discovery data collection policy must be identical to the actual full hostname of the MVS system (*hostname.domain*). To verify the hostname and domain, use the output from NSLOOKUP or HOMETEST (HOMETEST is for IBM TCP/IP only). Ensure that the hostname in the policy matches case with the hostname as it appears in the Console tree.

Configuring Data Collection to Minimize CPU Utilization

When you use Solutions Enabler on MVS to manage Symmetrix arrays, configure the Storage Agent for Symmetrix to optimize data collection. This will prevent high CPU utilization on z/OS hosts that are using Solutions Enabler.

The recommended data collection policy settings in Table 4-1 minimize CPU utilization while retaining Workload Analyzer collections at 15 minute intervals. This allows you to continue monitoring Symmetrix array performance while minimizing system impact.

Table 4-1 Data Collection Settings for Storage Agent for Symmetrix

Data Collection Policy	Recommended Schedule or Setting
Alert Polling	Every 20 minutes (Minute_20) or disable if desired
BCV/RDF Status	Every 10 minutes (Minute_10)
Configuration	Every 10 minutes (Minute_10) or every 20 minutes (Minute_20), as desired
Performance Statistics	Every 10 minutes (Minute_10) or disable if desired
Proxy Discovery	Retain default of once per day (change the time if desired)
Real-time BCV/RDF Status	Every 10 minutes (Minute_10)
WLA Daily	Every 15 minutes (Minute_15)
WLA Revolving	Disable this policy

Configuring IBM SMF and RMF Statistics Collection

This chapter discusses how to configure IBM SMF and RMF to collect statistics on OS/390 and z/OS hosts. Workload Analyzer Archiver uses these statistics to create performance data shown in Performance Manager and Performance Manager Automated Reports.

This chapter discusses configuration required on MVS. It does not discuss Workload Analyzer Archiver functionality, nor data collection policies or other Console-based configuration. Refer to the *EMC ControlCenter 5.2 SP4 Administration/User Guide* for information about Workload Analyzer Archiver.

- ◆ Summary of SMF and RMF Records Collection.....5-2
- ◆ Gathering Performance Statistics on MVS Hosts5-3

Summary of SMF and RMF Records Collection

Table 5-1 describes the records you need to collect.

Table 5-1 Summary of SMF and RMF Records Collection to Configure

Record Configuration Requiring Verification	How to Verify	Agent and Application that Require the Record	Purpose
SMF types 70, 74	Refer to <i>Verifying SMF PARMLIB Specifications</i> on page 5-4	Physical Agent for MVS, Workload Analyzer	MVS host performance analysis
RMF types 70, 74	Refer to <i>Verifying RMF PARMLIB Specifications</i> on page 5-4	Physical Agent for MVS, Workload Analyzer	MVS host performance analysis

Gathering Performance Statistics on MVS Hosts

Workload Analyzer Archiver is required to view the performance statistics gathered by the Physical Agent for MVS.

In order for Workload Analyzer Archiver to receive data from the MVS hosts, you need to confirm a few configuration parameters about SMF and RMF as described in this section.

For information about the datasets created by this Workload Analyzer activity, refer to Appendix A, *Dataset Management for MVS Agents*.

If your MVS hosts have not been collecting the following data, changing these settings will require an IPL. Most data centers require IPLs to be scheduled, so make these changes in accordance with the MVS administrators at the installation site.

Confirm these MVS host conditions are in force:

- ◆ RMF is active.
- ◆ RMF is collecting type 70 (CPU) and type 74 (DASD) records. System PARMLIB member ERBRMF nn (where nn is the suffix used at your site) should specify the following parameters:
 - CPU
 - CACHE
 - DEVICE(DASD)
- ◆ SMF is active.
- ◆ SMF is recording type 70 and type 74 records.
- ◆ No SMF user exit prevents the ControlCenter exit from capturing type 70 or 74 records.

Verifying RMF PARMLIB Specifications

Check the system PARMLIB to ensure collection of the necessary RMF record types.

To verify the PARMLIB member specifications for RMF:

1. Issue the following MVS console command:

```
F RMF,D ZZ
```

This command lists the settings in the system PARMLIB member ERBRMFnn.

2. In the output, verify that CPU, CACHE, and DEVICE(DASD) are listed. It is irrelevant how these settings are specified (MEMBER, COMMAND, EXEC, or DEFAULT) as long as they appear in the output.

If the settings do not appear in the output, refer to *Resource Measurement Facility User's Guide* from IBM for information on specifying the parameters in the PARMLIB member ERBRMFnn.

Verifying SMF PARMLIB Specifications

Check the system PARMLIB to ensure SMF records of type 70 and 74 are collected.

The specifications and configuration are site-dependent. Use the following general procedure to help you verify the configuration.

To verify SMF records type 70 and 74 are being collected:

1. Identify the SMF member in the system PARMLIB. Issue the following command:

```
D SMF,O
```

Sample output follows. In this sample SMFPRM00 is the PARMLIB member for SMF.

```
RESPONSE=ABCD
IEE967I 11.18.27 SMF PARAMETERS 774
      MEMBER = SMFPRM00
      MULCFUNC -- DEFAULT
      MEMLIMIT(00000M) -- DEFAULT
```

2. Identify the datasets in the system PARMLIB concatenation. Issue the following command:

```
D PARMLIB
```

The sample member SMFPRM00 determined from step 1 will be found in one of the datasets listed in the response to the `D PARMLIB` command.

Sample output follows:

```
RESPONSE=ABCD
IEE251I 11.20.52 PARMLIB DISPLAY 776
PARMLIB DATA SETS SPECIFIED
AT IPL
ENTRY  FLAGS  VOLUME  DATA SET
1      S      VOL000  SYS1.PARMLIB
2      S      VOL001  CPAC.PARMLIB
3      S      VOL001  SYS1.IBM.PARMLIB
4      S      VOL002  SYS2.ABCD.PARMLIB
```

3. Search the resulting datasets for the SMF PARMLIB member (the output of the `D SMF, O` command).
4. In that PARMLIB member, verify that record types 70 and 74 are being collected.

How ControlCenter Intercepts Host Statistics

In ControlCenter, the Physical Agent for MVS dynamically loads SMF intercept routines for host statistics collection.

SMF exits IEFU83 and IEFU84 are used in the MVS host to intercept RMF statistics when they are written to SMF.

If the routines do not load, an abend condition occurs. The relevant address space is CSMAGENT, and the relevant environment is MMASMFRT. If an abend does occur, it will disable MMASMFRT, and no data will be collected. If this occurs, contact Customer Support for assistance.

Configuring Agent Access to System Resources

This chapter instructs you on how to configure various software systems to allow ControlCenter the necessary security access to do its work.

- ◆ Configuring Agent Access to System Resources.....6-2

Configuring Agent Access to System Resources

The following procedures require the personnel mentioned at the beginning of each subsection. In these procedures, you enable agents running on MVS to access the necessary system resources.

Authorizing Agent Access to Required System Resources

The steps in this section require a security administrator with the ability to authorize started procedures, update facility classes, and grant access to TCP/IP through OMVS.

ControlCenter requires the security access described in this section. You authorize ControlCenter started procedures (including STGADMIN access) and authorize ControlCenter access to TCP/IP through OMVS.

The steps in this procedure assume the use of RACF security. If your site uses ACF2 or TopSecret, make the equivalent authorizations in your environment.

To grant agents the necessary security access on MVS:

Use steps 1 and 2 if you use security to control started tasks. If you do not, skip these steps.

1. Create a user ID for ControlCenter started tasks to use, using the following guidelines:
 - Ensure the user ID does not exceed seven characters so that it adheres to the TSO user ID standards.
 - Assign it a group according to your standards and preferences.
 - Ensure that the user ID has a UID of zero (0) in the OMVS segment.
 - This is referred to as *userid* in the rest of this security section.

2. In RACF, authorize the started procedures created by ControlCenter. These are listed in Table 6-1 on page 6-3.

Table 6-1 Started Procedures

Procedure	Description
CSMAGENT	Master Agent for MVS that controls all the subagent spaces
CSM\$DATA	Data address space used by all of ControlCenter
CSMSLAVE	Subprocedure that is used to invoke the rest of the subagents
MMLSLAVE	Procedure used to schedule DCOLLECT for space activity and utilization reports and alerts

When you execute the RACF commands, we suggest you use the same user ID for all of the started procedures.

Possible commands are:

```
RDEFINE STARTED (CSM*.CSM*) STDATA(USERID(userid) GROUP(groupname))
```

and

```
RDEFINE STARTED (MML*.MML*) STDATA(USERID(userid) GROUP(groupname))
```

For both user ID assignments, assign the user ID you created in step 1.

For the group names, specify the default group assigned to the user ID.

Neither the privileged nor the trusted attributes are required for the started procedure authorizations.

An alternate approach to the one shown is to make the appropriate specifications in the ICHRIN03 table, if this older method of authorization is still in use in your environment. Again, privileged and trusted attributes are not required.

3. Authorize the ControlCenter user ID to the STGADMIN profiles in the Facility Class as described.

Several agents use services that may be restricted from general users with the STGADMIN facility class. Permit the user ID assigned to the ControlCenter started tasks as shown in Table 6-2.

Table 6-2 Facility Class Profiles

Facility Class Profiles	Started Procedures Whose Functions Require these Authorizations	Purpose for Which the Authorization is Required
STGADMIN.IDC.DCOLLECT	CSMSLAVE MMLSLAVE	Authorizes access to the DCOLLECT function. • The Host Agent for MVS HSM obtains a list of ML1 volumes. • The Logical Agent for MVS obtains a list of all datasets. • The Host Agent for MVS SMS obtains a list of volumes by storage group.
STGADMIN.IDC.DIAGNOSE.CATALOG	CSMSLAVE	Authorizes the Logical Agent for MVS to diagnose catalogs for synchronization issues.
STGADMIN.IDC.DIAGNOSE.VVDS	CSMSLAVE	Allows the Logical Agent for MVS to diagnose VVDSs for synchronization issues.

4. Permit the ControlCenter user ID update authority to the profile protecting the MVS Modify command for the OAM address space. The profile could be either generic or discrete, depending on your site.

You can use the following RACF command syntax:

```
PERMIT profile CLASS (OPERCMDS) ACCESS (UPDATE) ID (userid)
```

In your command, ensure that you specify the profile that actually protects the OAM address space (resource `MVS.MODIFY.STC.OAM.OAM`). In a RACF environment, you can determine this profile with the following RACF command:

```
RLIST OPERCMDS (MVS.MODIFY.STC.OAM.OAM) GENERIC
```

For example, if the `MVS.MODIFY.STC.OAM.OAM` profile exists to protect resource `MVS.MODIFY.STC.OAM.OAM`, you can use the following RACF command:

```
PERMIT MVS.MODIFY.STC.OAM.OAM CLASS (OPERCMDS) ACCESS (UPDATE) ID (userid)
```

Authorizing ControlCenter as an HSM DBA User

The steps in this section require a storage administrator.

Authorize Host Agent for MVS HSM task as an HSM DBA USER. If you have HSM, you need to authorize the user ID used by CSMSLAVE as an HSM-authorized user ID.

To authorize the Host Agent for MVS HSM task as an HSM DBA USER, use either of the methods described next.

Method 1: Use the MVS Console

From an MVS Console, enter the following:

```
F HSM, AUTH userid DBA(USER)
```

where *userid* is the user ID associated with the started task CSMSLAVE in step 1 of *Authorizing Agent Access to Required System Resources* on page 6-2.

Method 2: Use TSO

From an authorized TSO user ID, enter the following:

```
HSEND AUTH userid DBA(USER)
```

where *userid* is the user ID associated with the started task CSMSLAVE in *Authorizing Agent Access to Required System Resources* on page 6-2.

User IDs are associated with a started task name. For example, some installations have the user ID assigned the started task name. Other installations have a special system user ID for all started tasks. Use only the first seven characters of the user ID when issuing the HSM AUTH command. For example, if the user ID is CSMSLAVE, use HSEND AUTH CSMSLAV DBA(USER).

Defining Facility Class Profiles

You may control which persons have access to the functions provided by the ControlCenter MVS agents by defining Facility Class Profiles to your security product. If a user has at least READ authority to the respective Facility Class Profile the user will be allowed to use the agent functions. If the user does not have at least READ authority to the respective Facility Class Profile, the user will NOT be allowed to

use the agent functions. The Facility Class Profiles and the agents which they restrict are:

Table 6-3 Facility Class Profiles and Controlled Agents

Facility Class Profile	Controlled Agent
EMC.CONTROLCENTER.MMHAGENT	MVS HSM Agent
EMC.CONTROLCENTER.MMLAGENT	Logical Agent for MVS
EMC.CONTROLCENTER.MMPAGENT	Physical Agent for MVS
EMC.CONTROLCENTER.MMSAGENT	MVS SMS Agent
EMC.CONTROLCENTER.MM2AGENT	DB2 Agent for MVS

Installing Master Agents on MVS Hosts

This chapter discusses how to deploy installation files on an MVS host for the very first time. If you want to clone, or copy, Master Agents to additional MVS hosts, refer to Chapter 9, *Installing Agents on MVS Hosts*.

- ◆ Installing the Master Agent from ECC Server7-2
- ◆ Performing Final Steps before Starting Master Agent.....7-15

Installing the Master Agent from ECC Server

To deploy installation files to an MVS host, run `mmainst.exe`. This program transfers files to an MVS system you will use as a base for further installation procedures. The following procedure describes how to deploy the files to the MVS system.

For MVS images that share DASD, you only need to deploy installation files once. If you have other hosts that do not share DASD, complete this procedure for each of them.

The current release allows you to use `FTP` to transfer installation files to a host other than the one where you intend to install. Therefore, you need to know the system affinity node of the host where you want to install the Master Agent. Refer to *Understanding Host Specifications During Master Agent Upgrade* on page D-2 for an explanation.

If you are not a systems programmer, then you may need one for assistance. The user ID you specify in the following procedure requires the authority to write datasets on the target MVS system.

To deploy the installation files to a target MVS system:

1. Run the OS/390 Master Agent Upload wizard using one of the following methods:
 - On the ECC Server, click the desktop shortcut **OS/390 Master Agent Upload**.
 - On a Windows host with network connectivity to the target MVS host, follow these steps:
 - a. Insert ControlCenter installation CD #3 into a CD-ROM drive.
 - b. Extract the contents of this file:
`cddrive:\SetupData\Media\IGM512.zip`
 - c. Go to the directory where you extracted the files:
`localdrive:folder\media_rep\remoteinstall\MMA510`
 - d. Click **Mmainst.exe** to execute the program.
The **ControlCenter OS/390 or z/OS Upload Wizard - Host Information** dialog box is displayed.

2. In the **Host Information** dialog box, specify:
 - **Host Name** (DNS name or IP address)
 - **FTP Port** (Default port number is 21)
 - **JES Node** (If the host you specified in the **Host Name** field will run the Master Agent, insert its JES node name. Otherwise, specify the JES node name for the host that is to run the Master Agent.)
 - Select **Normal Install**.

If you need the IP address of the MVS host in the **Host Name** field, use the HOMETEST (for IBM Communications Server only) or NSLOOKUP results from the host.

Figure 7-1 shows an example of the **Host Information** dialog box.

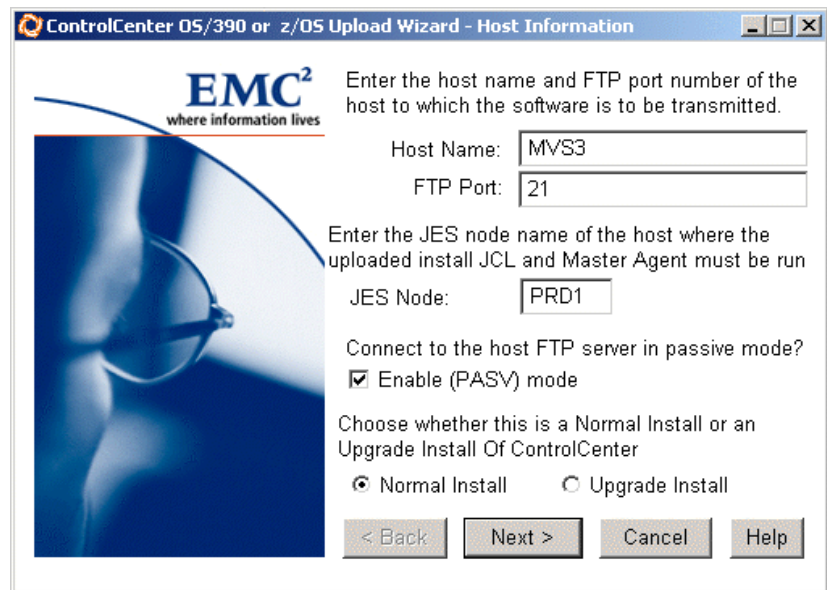


Figure 7-1 Specifying the Hostname and Port Number of the Target System

3. Enter a valid user ID and password for the system specified on the previous screen. For example, you can use your TSO user ID.
4. Click **Next**.

5. In the **Codehlq Allocation Information** dialog box, specify the *codehlq* (high-level qualifier) and any desired SMS allocation parameters. The fields for **SMS** and **non-SMS** allocation parameters are optional. Refer to Table 7-1 for information about filling out these fields.

IMPORTANT UPGRADE NOTE: If you are upgrading, use a *codehlq* different from the previous release.

Table 7-1 Codehlq Allocation Information

Field	Description
Codehlq (Required field)	This high-level qualifier is the location to which the wizard will extract the contents of the XMIT dataset. The high-level qualifier is <i>codehlq</i> as described in <i>Naming Conventions for Dataset Prefixes</i> on page 1-12.
SMS allocation criteria for Codehlq files (All Optional fields)	Optional SMS allocation parameters (only specify if SMS is installed and enabled at your site).
Storage Class	This value must be a valid SMS STORCLAS as defined on your system. If you have SMS ACS rules set up, this can default to the site value.
Data Class	This value must be a valid SMS DATACLAS as defined on your system. If you have SMS ACS rules set up, this can default to the site value.
Management Class	This value must be a valid SMS MGMTCLAS as defined on your system. If you have SMS ACS rules set up, this can default to the site value.
Non-SMS	Non-SMS allocation parameters (required if you want the datasets to reside on a non-SMS managed volume).
Unit	Unit name of the device type where the datasets will reside.
Volume Serial	Volume serial of the device where the datasets will reside. This identifier applies only to the datasets created during installation, and not to the datasets allocated during runtime processing of ControlCenter MVS agents.

Figure 7-2 shows an example of the **Codehlq Allocation Information** dialog box.

ControlCenter Mainframe Upload Wizard - Codehlq Allocation Information

EMC²
where information lives

Enter the high-level qualifier (Codehlq) for the product data sets to be created on this host. These files may be shared between hosts.

Codehlq:

SMS allocation criteria for Codehlq files

Storage Class:

Data Class:

Management Class:

Non-SMS

Unit:

Volume Serial:

< Back Next > Cancel Help

Figure 7-2 Specifying the Location for the Codehlq Dataset

6. Click **Next**.

7. In the **Datahlq Allocation Information** dialog box, specify the *datahlq* (data high-level qualifier) where you want the data (reports, work, and history files) generated by the Master Agent and all other agents you install on this host to be stored, and specify any SMS or non-SMS settings. This *datahlq* must be 17 characters or less.

IMPORTANT UPGRADE NOTE: If you are upgrading, use the existing *datahlq*.

The **SMS** and **non-SMS** fields are also available for you to specify that information.

If you run DFSMS without UNIT=VIO defined, or you do not have a UNIT=VIO esoteric defined in a non-SMS environment, you must specify a value in the **Unit** field.

Figure 7-3 shows an example of the **Datahlq Allocation Information** dialog box.

Figure 7-3 Specifying the Location for the Datahlq Dataset

8. Click **Next**.

9. In the **Host Specific Datasets** dialog box, specify the TCP/IP Parms dataset and member name (if applicable). If necessary, modify the `APF LOADLIB` and `PROCLIB` defaults.

Table 7-2 describes each of the fields requested by **Host Specific Datasets** dialog box.

Consult your network systems programmer if you have questions about which dataset(s) to use for any of these fields.

Table 7-2 Host-Specific Datasets Definitions

Field	Description
APF LOADLIB	The default is <code>codehlq.LOADLIB</code> . If you specify another value, that value must be an APF-authorized library. If you retain the default, you must APF-authorize <code>codehlq.LOADLIB</code> during postinstallation.
JES PROCLIB	The default is <code>datahlq.PROCLIB</code> . If you keep the default or if you specify a staging dataset that is not a JES PROCLIB, you must copy PROCs during postinstallation. If you specify a valid JES PROCLIB, be sure that your user ID has authority to write to the JES PROCLIB you specify.
TCP/IP Parms	This value was determined during preinstallation as part of the TCP/IP diagnostics in the worksheets, which are in Appendix C, <i>Installation and Configuration Parameters</i> . Obtain the value from the network systems programmer at your site who performed those diagnostics. This value is required. Note: The installation does not validate this value.

Figure 7-4 shows an example of the **Host Specific Datasets** dialog box.

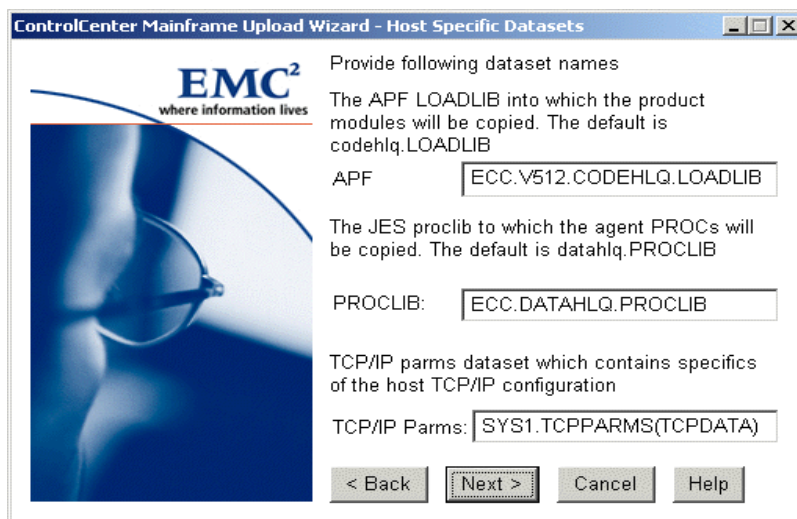


Figure 7-4 Specifying Host-Specific Information

10. Click Next.

11. In the **Infrastructure Details** dialog box, specify the following:
 - **Server Host** — The IP address or DNS-resolvable name of the ECC Server that can be pinged from the MVS host on which the Master Agent will run.
 - **Server Port** — Consult the person who installed the ECC Server for this port number. Edit this value only if the default conflicts in your environment.
 - **Agent Port** — Edit this value only if the default conflicts in your environment.

Figure 7-5 shows an example of the **Infrastructure Details** dialog box.

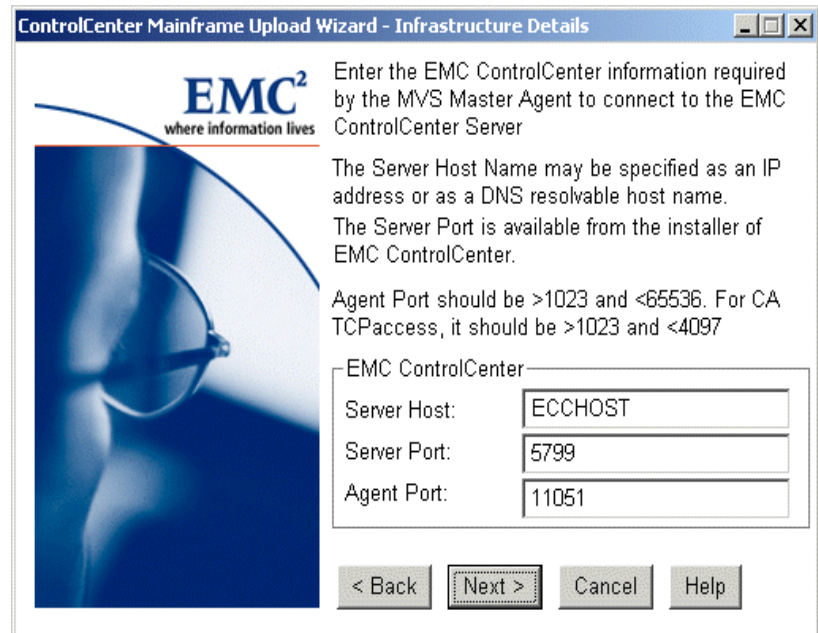


Figure 7-5 Specifying Infrastructure Details

12. Click **Next**. The **Specify Host Dataset and Trace Log** dialog box is displayed.

13. In the **Specify Host Dataset and Trace Log** dialog box, specify:

- **JCL dataset** — Contains the JCL that will extract the XMIT file on the target host.
- **XMIT dataset** — Contains the program files to be used on the MVS system.
- **ANSWER dataset** — Stores your installation values as collected by the wizard.
- **Trace log** — Edit the filename and location where it is stored, if necessary. The default is My Documents.

Figure 7-6 shows an example of the **Specify Host Dataset and Trace Log** dialog box.

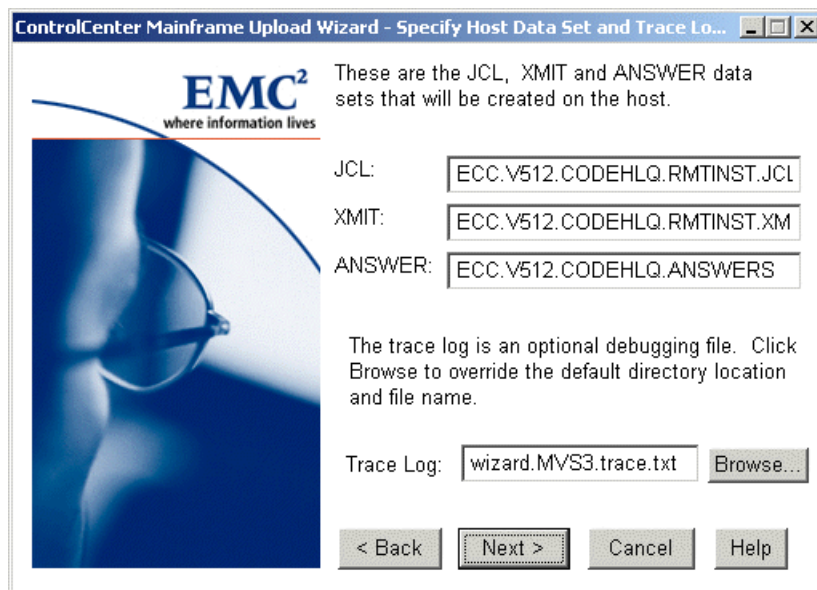


Figure 7-6 Verifying the Names of the Transferred Datasets

14. Click **Next**. The **Confirm Input** dialog box is displayed.

15. In the **Confirm Input** dialog box, verify that the entries you made are correct.

Figure 7-7 shows an example of the **Confirm Input** dialog box.

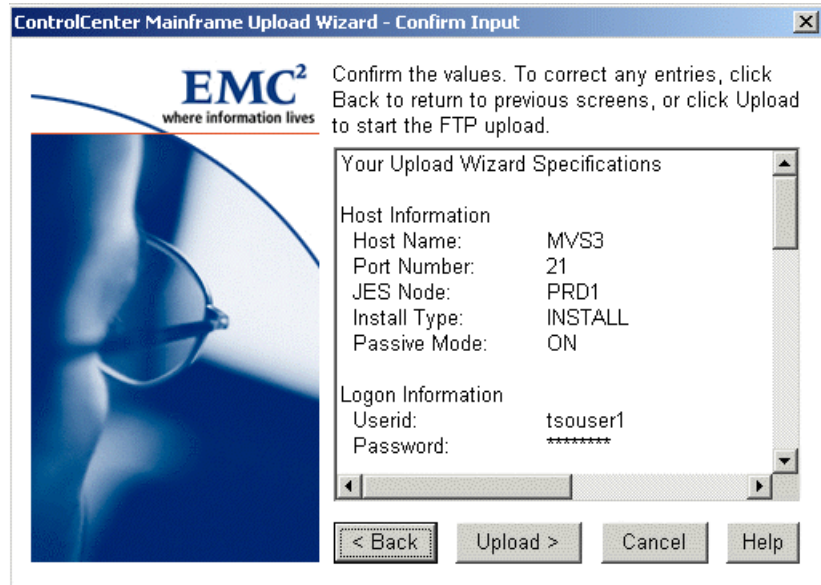


Figure 7-7 Verifying the Specifications in the Upload Wizard

16. Click **Upload**. The **Upload and Next Steps** dialog box is displayed.

17. When the upload has completed, click **Finish**.

Figure 7-8 shows an example of the **Upload and Next Steps** dialog box.

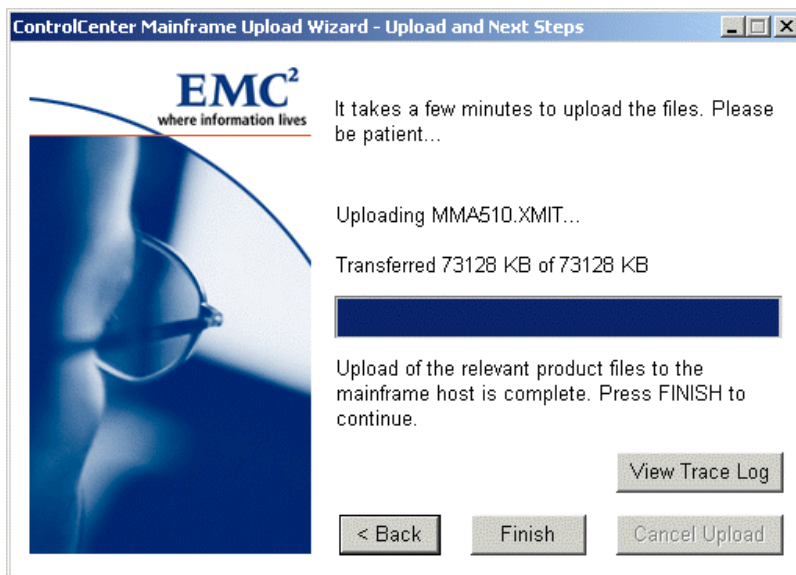


Figure 7-8 Upload of Master Agent Files Completed

18. The **Upload Wizard - Final Instructions** dialog box provides instructions on the next set of steps to take.

Figure 7-9 shows an example of the **Upload Wizard - Final Instructions** dialog box.

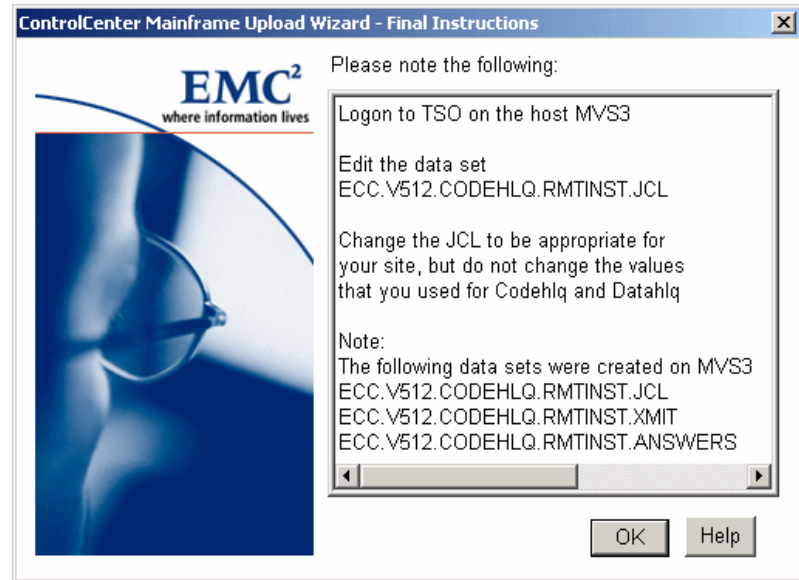


Figure 7-9 Final Notes for Installing the Master Agent

19. Click **OK** to exit the wizard.
20. Log on to the target host you specified in the installation deployment wizard.
21. Find the JCL dataset called *codehlq.RMTINST.JCL*, where *codehlq* is the high-level qualifier you specified in the wizard.
22. For dataset *codehlq.RMTINST.JCL*, edit the JOB card, review the JCL, and submit the job.
23. Ensure the job completes successfully.
24. Check the presence of the 21 datasets at the high-level qualifier *codehlq*. The datasets are as follows (though not in this order):
 - *codehlq.ANSWERS*
 - *codehlq.DBRMLIB*
 - *codehlq.EXEC*
 - *codehlq.HAPMEX*

- `codehlq.INSTALL`
- `codehlq.ISPELIB`
- `codehlq.ISPMLIB`
- `codehlq.ISPPLIB`
- `codehlq.ISPSLIB`
- `codehlq.JCL`
- `codehlq.LOADLIB`
- `codehlq.RMTINST.JCL`
- `codehlq.RMTINST.XMIT`
- `codehlq.ROBJ`
- `codehlq.SHIPAINI`
- `codehlq.SHIPCMD`
- `codehlq.SHIPINI`
- `codehlq.SHIPMSG`
- `codehlq.SSTINI`
- `codehlq.TEMPPDS`
- `codehlq.ZIPS`

25. Check the presence of the following datasets at high-level qualifier `datahlq`.

- `datahlq.CSMENV`
- `datahlq.INSTJCL`
- `datahlq.JCL`
- `datahlq.LOG`
- `datahlq.MMAINI`
- `datahlq.PERSIST`
- `datahlq.PERSIST.DATA`
- `datahlq.SSTINI`

If all your hosts share DASD with one another, then you are done with this procedure and will not need to repeat it.

26. If there are hosts that do not share DASD with the target host you specified in the wizard, repeat the tasks in this chapter *up to this point* and deploy installation files for the separate hosts. When you complete this task, continue to Chapter 8, *Using the Console to Install Master Agents*.

Performing Final Steps before Starting Master Agent

Now that you have installed the Master Agent, you must perform the following procedures to start the Master Agent, and then you can use the Console to install agents. Some steps are required on all images in a shared DASD environment.

To perform postinstallation steps for the Master Agent:

1. APF-authorize the *codehlq*.LOADLIB dataset unless you specified an APF-authorized library in the wizard.
 - If you specified an existing APF-authorized dataset in the wizard, the installation copied the necessary members to that dataset during the installation job. (This dataset is also referred to as the *apfdsn* dataset.) In this case, skip this step. Note that the dataset must be APF-authorized on all images, including those that share DASD.
 - If you did not specify an APF-authorized dataset in the wizard, the ControlCenter installation process created a new dataset called *codehlq*.LOADLIB. You must APF-authorize this dataset.

Figure 7-10 shows an example of APF-authorization by updating the system PARMLIB.

Update the system PARMLIB member to APF-authorize the LOADLIB.

```

EDIT          SYS1.PARMLIB(PROGnn) - 01.00          Columns 00001 00072
Command ==>                                         Scroll ==>
DATA
000005 APF ADD
000006      DSNAME (SYS2.LINKLIB)
000007      VOLUME (SOFT04)
000008 APF ADD
000009      DSNAME (EMC.ECC.LOADLIB)                /* EXAMPLE ECC LOADLIB */
000010      VOLUME (SOFT01)
000011 APF ADD
000012      DSNAME (codehlq.LOADLIB)                /* EXAMPLE ECC LOADLIB */
000013      SMS
000014 APF ADD
000015      DSNAME (SYS1.ACFNCP.NCPLIB)
000016      VOLUME (SOFT04)

```

Followed by the operator command:

```
SET PROG=nn
```

Figure 7-10 APF-Authorizing a Dataset by Updating the System PARMLIB

UPGRADE: You must perform steps 2 and 3. Otherwise, Master Agent abends will occur.

2. Ensure that the Master Agent started procedures were copied to a JES PROCLIB, or copy them now.
 - If you specified a JES PROCLIB in the wizard and your installation jobs completed successfully, skip this step.
 - If you left the **JES PROCLIB** field blank during installation, or if you specified a dataset that is not a JES PROCLIB, then complete this step.
 - a. Browse the dataset name you specified for JES PROCLIB, or browse *datahlq.PROCLIB* if you left the field blank.
 - b. Copy the Master Agent PROCs to a JES PROCLIB.
 - CSM\$DATA
 - CSMAGENT
 - CSMSLAVE
 - MM3AGENT
 - MMAREXX
 - MMNSERV

UPGRADE: You can skip the next step if you performed it for the previous release.

3. Ensure that enqueues are handled as global resources.

During processing, ControlCenter issues a SYSTEMS level enqueue on the system, as follows:

```
QNAME=MMAZSRLZ RNAME=ALERTFIL SCOPE=SYSTEMS
```

This resource might not be handled as a global resource by your serialization product. If you use GRS as your serialization product, there should not be a problem. However, if you use another serialization product, such as MIM, you must update the appropriate tables to ensure that product handles this resource name combination as a global enqueue.

UPGRADE: You can skip step 4, updating the TSO commands and programs table on each image, if you performed it for the last release.

4. Update the TSO commands and programs table on each image.

This step is required if you plan to install the Logical Agent for MVS, Host Agent for MVS HSM, or Host Agent for MVS SMS. You can perform this step now or anytime before you start the Logical Agent for MVS. If you do not have a license for Automated Resource Manager, you can skip this step.

Ensure the following authorizations are done in SYS1.PARMLIB member IKJTSOxx.

For OS/390 release 2 and later, SYS1.PARMLIB may not be the name of the system parameter library dataset. To determine the appropriate system PARMLIB dataset, use the MVS command `D PARMLIB` to list the dataset names in the system PARMLIB concatenation.

For AUTHCMD (Authorized Command):

- ALTER (required for Logical Agent, Host Agent for MVS HSM, and Host Agent for SMS)
- DIAGNOSE (required for the Logical Agent for MVS)
- EXAMINE (required for the Logical Agent for MVS)
- EXPORT (required for Logical Agent and Host Agent for MVS HSM)

For AUTHPGM (Authorized Program):

- HAPX\$MON (required for Host Agent for MVS HSM)
- CSLPCTL (required for Logical Agent for MVS to use Catalog Solution)
- EXPORT (required for Logical Agent and Host Agent for MVS HSM)
- IDCAMS (required for Logical Agent, Host Agent for MVS HSM, and Host Agent for SMS)
- ADRDSSU (required for the Logical Agent for MVS and Host Agent for SMS)
- VSAMASST (required for the Logical Agent for MVS to access the VSAM Assist utility)
- QINDEX (required for the Logical Agent for MVS to access the VSAM Quick Index utility)

For AUTHTSF (Authorized TSO Service Facility):

- CSLPCTL (required for Logical Agent for MVS to use Catalog Solution)
- IDCAMS (required for Logical Agent, Host Agent for MVS HSM, and Host Agent for SMS)

To make the changes immediately effective, use the command:

PARMLIB UPDATE (xx)

where **xx** is the alphanumeric value to be appended to IKJTSO. PARMLIB is a TSO command that is executed from option 6 of the ISPF Primary Option Menu. You must meet the authorization requirements for using the PARMLIB command. Refer to Figure 7-11 and Figure 7-12 for examples.

Add ALTER,
DIAGNOSE,
EXAMINE, and EXPORT
commands to
AUTHCMD NAMES

EDIT	SYS1.PARMLIB(IKJTSO00) - 01.01	Columns 00001 00072
Command ==>		Scroll ==> DATA
002200		
002300	AUTHCMD NAMES(	/* AUTHORIZED COMMANDS */ +
002400	RECEIVE	/* TSO COMMANDS */ +
.	. (your other entries)	
.	.	
.	.	
003200	PARMLIB IKJPRMLB	/* */ +
006210	ALTER	/* CONTROLCENTER */ +
006220	DIAGNOSE	/* CONTROLCENTER */ +
006230	EXAMINE	/* CONTROLCENTER */ +
003220	EXPORT	/* CONTROLCENTER */ +
003400	AD ADDSD	/* RACF COMMANDS */ +
.	. (your other entries)	
.	.	
.	.	
005700	SR SEARCH)	/* */

Figure 7-11 Adding Commands to the TSO Commands and Programs Table

	006000	AUTHPGM NAMES (	/* AUTHORIZED PROGRAMS */	+
	006100	IEBCOPY	/*	+
Add	003210	HAPX\$MON	/* CONTROLCENTER	+
HAPX\$MON,	006240	CSLPCTL	/* CONTROLCENTER	+
CSLPCTL, EXPORT,	006250	EXPORT	/* CONTROLCENTER	+
IDCAMS, ADDRSSU,	006260	IDCAMS	/* CONTROLCENTER	+
VSAMASST, and	006270	ADDRSSU	/* CONTROLCENTER	+
QINDEX	006280	VSAMASST	/* CONTROLCENTER	+
programs to AUTHPGM	006290	QINDEX	/* CONTROLCENTER	+
NAMES	006300	ICHUT100	/* RACF PROGRAMS	+
	.	(your other entries)		
	.			
	.			
	007000	IRRUT400)	/*	
	.	(your other entries)		
	.			
	.			
	007900	AUTHTSF NAMES (	/* PROGRAMS TO BE AUTHORIZED WHEN	+
	008000		/* WHEN CALLED THROUGH THE TSO	+
	008100		/* SERVICE FACILITY.	+
Add CSLPCTL and IDCAMS	008110	CSLPCTL	/* CONTROLCENTER	+
TSO service facilities to	008130	IDCAMS	/* CONTROLCENTER	+
AUTHTSF NAMES	008200	IEBCOPY	/*	+
	008300	ICQASLI0	/*	+
	008400	IKJEFF76)	/*	+

Figure 7-12 Authorized Programs and Authorized TSO Service Facility

The screen shows an ISPF edit session of a SYS1.PARMLIB member named IKJTSO_{xx}, where _{xx} is determined during the installation of the operating system. This updated screen shows authorized commands, authorized programs, and authorized TSO service facilities.

5. Start the Master Agent.

Issue the following MVS operator command to start the Master Agent:

S CSMAGENT

You must issue the start command on each MVS system.

When the Master Agent starts, it generally starts all of the subagents that you have installed and configured to start automatically. However, in this circumstance, no agents are installed, and only the Master Agent address spaces start.

The startup of agents on MVS has no effect on the proxy Storage Agent for Symmetrix used for collecting data about the Symmetrix systems from the perspective of MVS hosts. Refer to Chapter 4, *Monitoring MVS Attached Symmetrix Arrays*, for information about the proxy agent.

6. Verify Master Agent startup on each image as described in the next section.

Verifying Master Agent Startup

This section lists the messages you should receive after starting the Master Agent. Look for these messages in the log for each image where you started ControlCenter agents on MVS.

1. Verify CSMAGENT started correctly.

After starting the Master Agent, look for the following message:

```
MMA@100I CONTROLCENTER MAIN AGENT vrm NOW ACTIVE
```

2. Verify the CSM\$DATA address space started correctly

The Master Agent starts the CSM\$DATA address space. After the Master Agent startup has been verified, look for the following message:

```
HAP5904I CONTROLCENTER/MVS DATA SPACE STARTUP
```

3. Verify the MM3AGENT address space started correctly:

```
MM3@100I (internal Console messaging agent)
```

4. Verify the MMNSERV address space started correctly. Figure 7-13 shows a sample of the output. This output is considered normal.

If Master Agent fails to start, refer to Chapter 12, *Troubleshooting the Installation of Agents for MVS*.

```

20.50.13 STC05809 ---- day,    dd mmm yyyy ----
20.50.13 STC05809 IEFCL165I // SETPROG APF,ADD,DSN=codehlq.LOADLIB,SMS
20.50.13 STC05809 SETPROG APF,ADD,DSN=codehlq.LOADLIB,SMS
20.50.16 STC05809 $HASP373 CSMSLAVE STARTED
20.50.18 STC05809
20.50.20 STC05809 SST001I SST service routines loading
20.50.20 STC05809 SST000I Module PRMSSTT@ loaded at xxxxxxxx
20.50.20 STC05809 SST000I Module SSTDICT loaded at xxxxxxxx
20.50.20 STC05809 SST000I Module SKBALOG loaded at xxxxxxxx
20.50.20 STC05809 SST000I Module SKBKBP loaded at xxxxxxxx
20.50.21 STC05809 SST000I Module SKBKBR loaded at xxxxxxxx
20.50.21 STC05809 SST000I Module SKBKBW loaded at xxxxxxxx
20.50.21 STC05809 SST000I Module SKBKBH loaded at xxxxxxxx
20.50.21 STC05809 SST000I Module SKBKBL loaded at xxxxxxxx
20.50.21 STC05809 SST000I Module SKBKBS loaded at xxxxxxxx
20.50.21 STC05809 SST000I Module SKBDSVC loaded at xxxxxxxx
20.50.21 STC05809 SST004I The schema contains 00059 tables
20.50.22 STC05809 SST001I SST service routines loaded
20.50.22 STC05809 MMN@100I ControlCenter NETSERVER AGENT vrm NOW ACTIVE
20.50.23 STC05809
20.50.23 STC05809
20.50.26 STC05809 MMN0000I ControlCenter/NetServer (MMNSERV) initialization in
progress, version v.r.m, built on mmm dd x hh:mm:ss
20.50.31 STC05809 SSTCALL : PERFORM ROUTINE NOW
20.50.31 STC05809 SSTCALL : PERFORM INITCSTU 1

```

Figure 7-13 Master Agent Startup Messages

Now that the Master Agent has started, you are finished with installing the first Master Agent. You will need a Console ID to log on to the Console, and you may need to map your Console ID to your TSO ID if you are using a different Console ID than TSO ID. Refer to Chapter 8, *Using the Console to Install Master Agents*, for instructions on performing these tasks.

To install additional Master Agents, refer to Chapter 9, *Installing Agents on MVS Hosts*, and use the ControlCenter Console rather than repeating the wizard. This will allow code datasets to be shared.

To install MVS agents on the current host, you also use the Console. Refer to Chapter 10, *Performing Agent Postinstallation Steps on MVS Hosts* for MVS agent installation instructions.

Using the Console to Install Master Agents

This chapter provides procedures for installing the ControlCenter Console and using it to install Master Agents.

Install and log on to the ControlCenter Console so you can proceed with Master Agent and agent installation. Refer to *EMC ControlCenter 5.2 Planning and Installation Guide, Volume 1*.

After installing the ControlCenter Console, you can use the Console to clone an installed Master Agent to other hosts in the Sysplex.

To use agent functions, ControlCenter users must have a user ID that has native SAF authority to execute product functions. Follow the instructions in this chapter to configure Console user IDs as needed.

- ◆ Mapping TSO IDs to ControlCenter Usernames.....8-2
- ◆ Installing Master Agents through Cloning8-4

Mapping TSO IDs to ControlCenter Usernames

ControlCenter users must have native SAF authorization to perform many agent functions on MVS hosts.

If the ControlCenter administrator assigned you a username that does not correspond to your TSO ID, you must map the TSO ID to your username.

Use Table C-8 on page C-15, to record your mappings before performing this procedure.

If you are using SAF-authorized TSO IDs as your ControlCenter usernames, you do not need to map the TSO IDs to ControlCenter usernames.

Specify the ControlCenter usernames of all MVS agent users, together with their corresponding SAF (RACF) IDs. This allows ControlCenter to pass an SAF user ID to MVS for security checking. Note that the SAF IDs you provide must have standard security access to the necessary resources.

If you do not want to complete this table, you can create ControlCenter user IDs and passwords that are identical to the SAF user IDs and passwords. With no entries in the present table, ControlCenter agents will pass the ControlCenter user ID directly to MVS.

To map Console usernames to SAF IDs:

1. Start a TSO session and log on to the host where the Master Agent is installed.
2. Start ISPF.
3. Using option 6 in ISPF, specify `'EX codehlq.INSTALL(SETUP)'` and press **ENTER**.

4. In the **Primary Menu** panel, type **1**, and then press **ENTER**. The *Map Console IDs to TSO IDs* panel is displayed.

Figure 8-1 shows an example of the *Map Console IDs to TSO IDs* panel.

```

Installation of ControlCenter Agents for MVS - Map Console IDs Row 1 to 1 of 1
Command ===                               Scroll ===> CSR

    Name: MVS1                               Current Process: Product Configuration

To Add or Update entries, key in data then press Enter
    RACF ID  Console User ID

Action RACF ID  Console User ID          Valid Action:  D to delete an entry
      TSO001    ECCADMIN

***** Bottom of data *****

```

Figure 8-1 Map Console IDs to TSO IDs

5. In the respective columns, add a RACF ID (SAF ID) and its corresponding ControlCenter Console username, and then press **ENTER**.

For MVS users of ControlCenter, you must ensure that the first eight characters of each ControlCenter Console username are unique.

6. Repeat step 5 for the rest of the Console usernames.
7. Press **PF3** to return to the Primary Menu panel.
8. Issue the MVS console command **F CSMAGENT, INI R** on the host system.

This command instructs the Master Agent to read the updated SAF ID(s) into the ControlCenter username mapping table.

Installing Master Agents through Cloning

After you have installed and run the first Master Agent in a Sysplex environment, you can clone (or copy) the Master Agent to additional hosts in the same Sysplex.

The cloned Master Agent shares code libraries with the Master Agent from the source host. However, data libraries are unique to each host and require their own high-level qualifier. Some installation parameters may also be unique, such as the TCP/IP parameters dataset. The Console Agent Installation wizard prompts you for any values unique to the host.

The Agent Installation wizard functions slightly differently for cloning than it does for other agent installations. For cloning, you select the source host from which you want to copy the Master Agent configuration. (By contrast, for normal agent installations, you select the target host where you want to install.)

The following conditions apply for cloning:

- ◆ You cannot clone the first Master Agent in a Sysplex. You must install the first Master Agent using the OS/390 Master Agent Upload Wizard.
- ◆ You can only clone the Master Agent to one host at a time. To clone the Master Agent to additional hosts, repeat the steps in the Agent Installation wizard as needed, specifying a unique target hostname and data library high-level qualifier (*datahlq*) for each host.
- ◆ When you clone a Master Agent, the source and target hosts must be in the same Sysplex.

To install the Master Agent using installation parameters from another host (cloning):

1. On the host whose Master Agent you want to clone (this is the source host), ensure that the Master Agent is running.
2. Start the ControlCenter Console (refer to *EMC ControlCenter 5.2 Planning and Installation Guide, Volume 1* for instructions).
3. In the tree, right-click **Hosts**, and then select **Arrange By, Type**.
4. Right-click **MVS Hosts**, and then select **Agents, Install**. The Agent Installation wizard appears, with MVS hosts listed.

5. In the **Host Selection** dialog box, select the source host. Ensure the host's status is **Available**. Click **Next**. The **Agent Selection** dialog box is displayed.
6. In the **Agent Selection** dialog box, select **Clone Master Agent**, and then click **Next**. The **Prerequisite Checks** dialog box is displayed.

Figure 8-2 shows an example of the **Prerequisite Checks** dialog box.

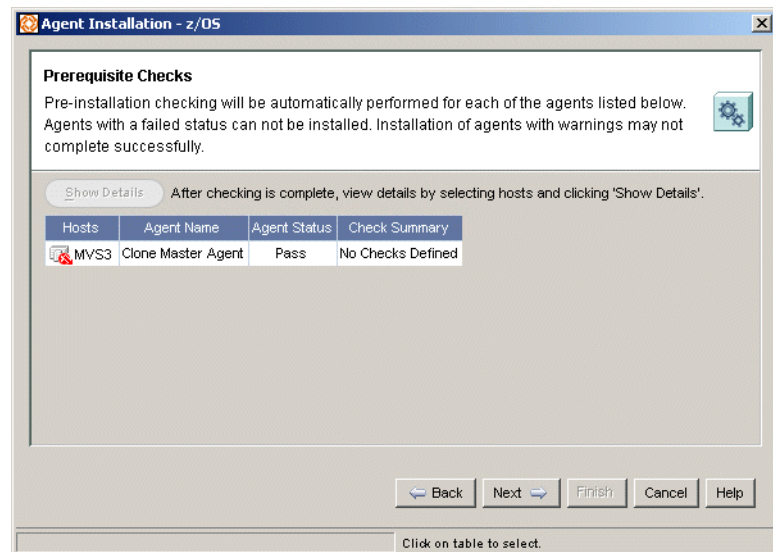


Figure 8-2 Prerequisite Checks Dialog Box

7. Confirm that the **Agent Status** field in the **Prerequisite Checks** dialog box displays **Pass**, and then click **Next**. The **Clone MVS Master Agent Questions** dialog box is displayed.

Figure 8-3 shows the **Clone MVS Master Agent Questions** dialog box.

Figure 8-3 Clone MVS Master Agent Questions Dialog Box

8. Complete the four required fields:

- **Host (LPAR) name:** Use the SMFID of the Host on which to install the Master Agent.
- **Data highlevel qualifier:** The *dathlq* for ControlCenter datasets on the host. This must be unique in the Sysplex. The *dathlq* must be 17 characters or less.

The Code highlevel qualifier is not needed for a cloned Master Agent because it uses the same *codehlq* datasets as the host from which it is being cloned.

- **TCP/IP Params:** Change the default parameter only if it differs from your environment's specification.
- **Agent Port:** Change the default port, 11051, only if it is already being used.

Click **Help** for assistance with other fields.

9. Click **Next**.

The **Review Install Agent Task** dialog box is displayed.

10. Click the **Installable Agents** tab. The **Agent Name** field indicates Clone Master Agent. Confirm that **Pass** appears in the **Agent Status** field.

Optionally, click the **Answers to Questions** tab to review the settings you specified.

11. Click **Finish**.

The **Execute Now** dialog box is displayed.

12. Note the name of the task list in the **New** field. Click **OK**.

Rename the task list, if you prefer, by clicking in the field and typing a different name.

13. View the progress of the task list in the *Task List Viewer* in the Console.

To display a task list in the Task List Viewer, create a Properties view and then select the task list in the **Task Lists** folder in the tree.

After the task list completes, the Console lists its status and a message about success.

14. Click the task list in the Properties view.

The task details appear in the lower half of the view. Note the outcome of each action in the task list.

Figure 8-4 shows an example of the *Task List Viewer* in the Console.

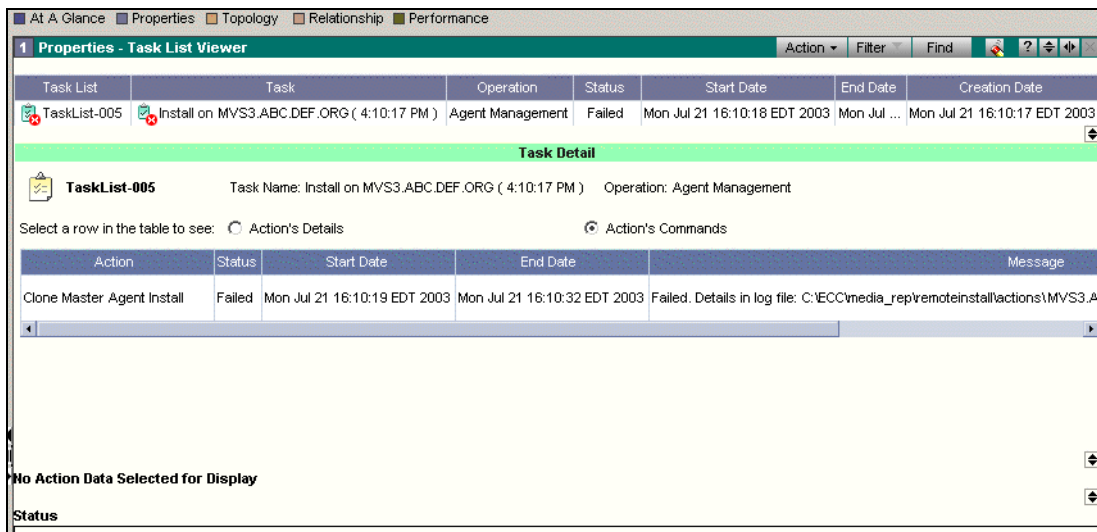


Figure 8-4 Task List Details for Cloned Master Agent

15. View the installation log file by right-clicking the **Hosts** folder in the tree and selecting **Agents, View Install Logs**.
16. Use the **Host**, **Product Name**, and **Date/Time** columns to locate the correct log, click the log, and click **View Log**.
17. For a successful installation, note any postinstallation instructions that appear in the log. Also, record the name of the dataset that contains the agent started procedures (PROCs) you will need to copy (by logging onto the host).

If the task list failed, the log contains information on why it failed.

Next, perform the postinstallation steps described in *Performing Final Steps before Starting Master Agent* on page 7-15. After you complete those steps, proceed to *Installing Agents on MVS Hosts* on page 9-2.

Repeat this procedure as needed for other hosts in the same Sysplex.

Installing Agents on MVS Hosts

This chapter discusses how to install agents on MVS hosts after you have completed the Master Agent installation procedures outlined in Chapter 8, *Using the Console to Install Master Agents*.

- ◆ Installing Agents on MVS Hosts.....9-2
- ◆ Viewing Agent Installation Logs9-9
- ◆ Copying Agent PROCs to a JES PROCLIB.....9-10

Installing Agents on MVS Hosts

You install agents for MVS through the Console. Before you begin, ensure that you have installed the Master Agent and performed necessary preinstallation steps on the MVS hosts themselves.

After you install, complete postinstallation steps both on the MVS host and in the ControlCenter Console.

Requirements for Agents for MVS

The agents described in this section are available for installation on MVS hosts. The agent descriptions show the required licenses for installation (if applicable), the required disk space for each agent, and hardware and software prerequisites.

Refer to *Available Agents for MVS* on page 1-2 for descriptions of these agents and information about agents that are not generally available in ControlCenter 5.2.

The following agents are part of ControlCenter Open Integration Components (no license is required to make them available).

- ◆ Master Agent (required disk space: 2500 tracks)
- ◆ SYMAPI Server (required disk space: 3000 tracks)
- ◆ Physical Agent for MVS
 - Required disk space: 15 tracks.
 - Required for host discovery on MVS systems.
 - Requires that EMC Symmetrix Control Facility (EMCSCF), part of EMC ResourcePak Base 5.2 for OS/390 and z/OS, is installed and active. Refer to the *EMC ResourcePak Base for OS/390 and z/OS Product Guide* for installation details. If you did not receive this software package with ControlCenter, contact Customer Support.
- ◆ Database Agent for DB2
 - Required disk space: 188 tracks.
 - Requires that you define UNIT-SYSDA and add it to your Eligible Device Table (EDT).
 - Compatible software: DB2 versions 5, 6, and 7. For DB2 version 7 and higher, this agent requires DB2 Operational Utilities and DB2 Diagnostic and Recovery Utilities.

The following agents require an Automated Resource Manager or StorageScope™ license, entered through the ControlCenter Console.

- ◆ Logical Agent for MVS
 - Required disk space: 877 tracks.
 - For certain catalog management and dataset functions, Logical Agent for MVS uses Catalog Solution 8.6 or higher. If the dataset name of Catalog Solution load libraries is not provided during installation and configuration, some ControlCenter catalog functions will be executed through system utilities, while other ControlCenter functions will not be available.
- ◆ Host Agent for MVS HSM
 - Required disk space: 3331 tracks.
 - Compatible software: DFSMSHsm 2.6 or higher.
- ◆ Host Agent for MVS SMS
 - Required disk space: 20 tracks.
 - Compatible software: DFSMS 1.5 or higher.

TCP/IP Support for MVS Agents

Table 9-1 lists the TCP/IP products for use with agents for MVS.

Table 9-1 TCP/IP Products Supported with MVS Agents

Vendor	TCP/IP Product	Version
IBM	OS/390 eNetwork Communications Server	2.10
	Communications Server for z/OS	1.1, 1.2, 1.3, 1.4
Computer Associates	Unicenter TCPaccess Communications Server (formerly NetworkIT TCPaccess)	5.3, 6

Determining the Scope of the Installation

The installation process allows multiple agents to be installed on multiple hosts at the same time. However, some agents have installation parameters that are unique to each host, and must be installed one host at a time. Refer to Table 9-2, *Agent Deployment Options*, on page 9-4 for agents that can be installed to multiple hosts

at the same time and for agents that must be deployed one host at a time.

Table 9-2 **Agent Deployment Options**

Agents That Can Be Installed on Multiple Hosts at the Same Time ^a	Agents That Must Be Installed on One Host at a Time
Physical Agent for MVS Logical Agent for MVS Host Agent for MVS SMS Host Agent for MVS HSM	Database Agent for DB2 Any agent that has parameter values specific to a given host

a. This method assumes all hosts in the same installation task share the same installation parameters. If any of the hosts in a Sysplex use different third-party load libraries, HSM control datasets, or other parameters defined at installation, you must install the applicable agent separately on those hosts.

Installing Initial Agents

The first time you install agents on a mainframe host, use the following approach: install multiple agents on a single host, and then perform postinstallation, startup, and configuration for the agents on that host.

This approach allows you to get agents working on a single host before deploying multiple agents to multiple hosts.

Agent Installation Procedures

This section contains two procedures for installing agents on MVS hosts. Table 9-3 describes when to use each procedure.

Table 9-3 Agent Installation Procedures

Procedure	Use This Procedure For...
<i>Installing Multiple Agents on Multiple Hosts</i> on page 9-5	Testing agent installation in your environment. Installing a single agent on multiple hosts. Installing multiple agents on a single host. Installing multiple agents on multiple hosts.
<i>Installing Agents on a Single Host</i> on page 9-6	Installing a single agent on a single host. Installing agents that must be deployed one host at a time. Installing agents that have parameter values specific to a given host.

Installing Multiple Agents on Multiple Hosts

To install one or more agents on one or more hosts in the same Sysplex:

1. In the tree, expand **Hosts**.
2. Use **Shift-click** or **Ctrl-click** to select the OS/390 or z/OS hosts that are in the same Sysplex.
3. Right-click any of the hosts you selected and select **Agents, Install**. The *Agent Installation* wizard is displayed.
4. In the **Host Selection** dialog box, select individual hosts, or click the checkmark icon to select all the hosts. Click **Next**.
5. In the **Agent Selection** dialog box, select the agent or agents you want to install. Click **Next**.
6. Complete the **Questions** dialog box for each agent, clicking **Help** if needed and **Next** after each dialog box. If you have already completed an installation parameters worksheet for this agent on this host, use the worksheet to complete the fields.

Worksheets are in Appendix C, *Installation and Configuration Parameters*, of this guide.

The parameters you specify will apply to all hosts in this installation task.

7. When finished with the final **Questions** dialog box, click **Next**.

8. Review the specifications as needed.
9. Click **Finish**.
10. Select or create a task list for the operations, and then click **OK**.
11. View the progress of the task list in the *Task List Viewer*.
12. On completion, view the install logs for dataset names and other information you will need during postinstallation. The log contains error information if applicable. (Refer to *Viewing Agent Installation Logs* on page 9-9 for instructions on viewing install logs.)
13. For a successful installation, note any postinstallation instructions that appear in the log. Also, record the name of the dataset that contains the agent started procedures you will need to copy (on the mainframe host).

If you successfully installed the agents, refer to *Successful Agent Installation* on page 9-7. If you were unable to install the agents, refer to *Troubleshooting Agent Installation* on page 9-8.

Installing Agents on a Single Host

To install an agent on a single MVS host:

1. In the tree, expand **Hosts**.
2. Right-click the host where you want to install, and then select **Agents, Install**.
3. Select **OS/390 or z/OS** from the **Platform Types** menu, and click **Next**.
4. In the **Host Selection** dialog box, select the host. Click **Next**.
5. In the **Agent Selection** dialog box, select the agent you want to install. Click **Next**.
6. Enter the agent installation parameters. Click **Help** or use the installation worksheet you completed earlier. Click **Next**.
7. Review the list of installable agents and the answers to the installation questions as needed.
8. Click **Finish**.
9. Select or create a task list for the operations, and then click **OK**.
10. Review the progress of the operations in the Properties view of the task list.

11. On completion, view the install log for dataset names and other information you will need during postinstallation. The log contains error information if applicable. (Refer to *Viewing Agent Installation Logs* on page 9-9 for instructions on viewing install logs.)
12. Assuming the installation is successful, note any postinstallation instructions that appear in the log. Also, record the name of the dataset that contains the agent started procedures you will need to copy (on the mainframe host).

If you successfully installed the agent, go to the next section, *Successful Agent Installation*. If you were unable to install the agent, refer to *Troubleshooting Agent Installation* on page 9-8.

Successful Agent Installation

After installation completes successfully, you must copy the agent PROCs on the MVS host. You may find it convenient to wait until all agent installations are completed for a host; then you can copy all the agent PROCs at once.

If the installation fails, use the error messages in the installation log to determine the problem.

If you do not have authority to write to a JES PROCLIB, then complete all the agent installations on a host and ask a systems programmer to copy all the agent PROCs for the host at the same time.

To proceed now with the agent you just installed, continue with *Copying Agent PROCs to a JES PROCLIB* on page 9-10.

Troubleshooting Agent Installation

If you were unable to successfully install the MVS agents, troubleshoot the installation as follows:

- ◆ Check the installation log for error messages returned from the MVS host. Error messages from either MVS or ControlCenter are possible.
- ◆ Ensure that you or someone at your site completed all preinstallation steps for the agent you installed.
- ◆ Possible agent installation problems:
 - Values specified in **Questions** dialog box could be invalid. The values you specified are listed in the install log. Verify the existence of any dataset names.
 - Specified load libraries may not exist.
 - Installer's user ID may not have write access to the product and data high-level qualifiers.
 - Installer's user ID may not have write access to the dataset specified as the **JES PROCLIB** field in the Master Agent installation (whether this is an actual JES PROCLIB or a dummy dataset).
 - Master Agent may not be installed. The host may still be visible in the tree if it was discovered by Solutions Enabler.
 - Master Agent may have become inactive on the host since you opened the dialog box.
 - Master Agent PROCs may not have been copied to a JES PROCLIB, specifically MMAREXX.
 - ECC Server may have become inactive.
 - ECC Server name or port number may have changed since Master Agent installation.

Viewing Agent Installation Logs

When you install an agent on MVS, you can view the log immediately upon completion and also at a later time. There is one log for each agent for each install.

The log contains important information about the success or failure of the installation operation. It also informs you of certain (but not all) postinstallation steps you need to take, often providing the relevant dataset names to use.

You cannot view install logs for an agent or host until you have conducted at least one installation operation for that agent or host.

Viewing Log Files by Host

For a successful installation, note any postinstallation instructions that appear in the log. Also, record the name of the dataset that contains the agent started procedures you will need to copy (on the mainframe host).

To view the install log for the installation:

1. In the tree, click the host where you just installed the agents.
2. Click the **ECC Administration** blue button.
3. On the **Agents** menu, select **View Install Logs**.
4. Select the desired log.
5. For a successful installation, scroll to the bottom for the staging PROCLIB dataset name where the PROCs are located.
6. On the MVS host, copy the PROCs to a JES PROCLIB, as described in the next section.

Copying Agent PROCs to a JES PROCLIB

After you install agents on an MVS host, you need to ensure that the newly created agent started procedures are copied to a JES PROCLIB on the host. Depending on how the Master Agent was installed, the installation may have done this automatically, or you may need to do so manually.

- ◆ If the Master Agent installer specified an actual JES PROCLIB in the ISPF installation panels and your installation jobs completed successfully, skip this procedure.
- ◆ If the Master Agent installer left the **JES PROCLIB** field blank during installation setup or specified a dataset that is not a JES PROCLIB, then complete this task.

To copy agent PROCs, you must have write authority to a JES PROCLIB on the MVS host. If you do not have this authority, contact a systems programmer who does.

Where to Find the PROCs to Copy

Browse the dataset name listed at the bottom of the agent installation log. The agent installation procedure instructed you to record this value. Alternatively, refer to *Viewing Agent Installation Logs* on page 9-9.

The log may list more than one dataset for where to find the PROCs:

- ◆ *datahlq*.PROCLIB (if the Master Agent installer left the **JES PROCLIB** field blank during Master Agent installation). Copy all the members in the partitioned dataset. (They will all be agent PROCs).
- ◆ Dataset name the Master Agent installer specified for JES PROCLIB (if specified). Identify the individual members to copy using the names in the message, or the names in Table 9-4. (There *may* be members besides the agent PROCs, so do not copy all the members.)

For example, the log for a successful Physical Agent installation reads as follows:

```
mm/dd/yy hh:mm:ss Install of Physical Agent for MVS (LPAR
MVSM) completed successfully.
You must now copy the TEST.ABCD.ECC510.PROCLIB.MEMBERS or
TEST.ABCD.ECC510.JCL to your JES PROCLIB and issue a
start from the MVS Console for this Agent (MMPAGENT
MMPREXX) .
```

In this case, MMPAGENT and MMPREXX are the PROCs you need to copy. They are listed in parentheses.

PROCs to Copy for Each Agent

Copy the necessary PROCs to a JES PROCLIB. The names of the PROCs for each agent are listed in Table 9-4.

Table 9-4 PROCs to Copy for Each Agent

Agent That was Installed	PROCs to Copy to a JES PROCLIB
Database Agent for DB2	MM2AGxxx MM2UTxxx MM2REXX
Host Agent for MVS HSM	MMHAGENT MMHREXX MMHX001 MMHX002
Logical Agent for MVS	MMLAGENT MMLREXX MMLSLAVE
Physical Agent for MVS	MMPAGENT MMPREXX
Host Agent for MVS SMS	MMSAGENT MMSREXX MMSISPF MMSNQIF

After you copy the PROCs, the following agents require postinstallation steps on the MVS host:

- ◆ Host Agent for MVS HSM
- ◆ Database Agent for DB2
- ◆ Logical Agent for MVS

Do not start the agents until you have performed the postinstallation procedures as described in Chapter 10, *Performing Agent Postinstallation Steps on MVS Hosts*.

For all other MVS agents, postinstallation occurs only in the Console. Refer to Chapter 11, *Performing Agent Setup in the Console*.

Performing Agent Postinstallation Steps on MVS Hosts

Now that you have installed MVS agents, you must perform the following postinstallation procedures in this chapter before using ControlCenter. Some steps are required on all images in a shared DASD environment. Other steps may be necessary more than once, depending on how resources are shared in your environment. When the postinstallation steps are complete, start the agents and verify startup using the procedures at the end of the chapter.

- ◆ Postinstallation for Host Agent for MVS HSM.....10-2
- ◆ Postinstallation Steps for Logical Agent for MVS.....10-2
- ◆ Postinstallation for Database Agent for DB2.....10-3
- ◆ Starting All Agents on the MVS Host.....10-4

Postinstallation for Host Agent for MVS HSM

Perform the steps in this section after deploying Host Agent for MVS HSM and before starting the agent.

UPGRADE: If you are upgrading, you need only edit the cleanup JCL as described next. If you have updated the HSM PARMLIB member in the previous release, you do not have to repeat the procedure. Note that additional postinstallation steps allow you to remove unneeded configurations. These can be performed at your convenience (you do not have to wait to start the agent). Refer to *Performing Postinstallation Cleanup Steps for an Upgrade* on page 13-22.

Editing Job Card of Daily Cleanup JCL

Edit the job card (or job Statement) in the JCL member `datahlq.JCL(CLEANUP)` as needed for your data center's environment. This edit ensures that the daily cleanup job for Host Agent for MVS HSM will run. ControlCenter automatically updates the rest of the JCL.

The Host Agent for MVS HSM writes DFSMSHsm messages and its own agent-related messages to log files. When the agent is stopped and restarted, or the system date changes, a new log dataset is created. The daily cleanup job combines these log datasets, so there is just one log dataset for each day.

Starting the Host Agent for MVS HSM

To start the Host Agent for HSM:

1. Start the agent in the Console or use the following MVS command:

```
F CSMAGENT,ENV S MMHAGENT
```

2. Verify agent startup on each image. Look for message MMH@100I.

Postinstallation Steps for Logical Agent for MVS

If you have not already done so, add the necessary entries in the TSO Commands and Programs table. *Performing Final Steps before Starting Master Agent* on page 7-15 describes this procedure.

Postinstallation for Database Agent for DB2

Perform the steps in this section after deploying Database Agent for DB2 and before starting the agent. DB2 bind authority is required to complete this procedure. The steps in this procedure allow the agent to manage the single DB2 database specified during agent deployment. To add more databases, refer to *Adding More DB2 Subsystems* on page 11-4.

UPGRADE: Refer to the instructions in *Postinstallation for Database Agent for DB2* on page 13-21.

Authorizing and Binding Database Agent for DB2 Started Task Procedures

To authorize and bind for Database Agent for DB2:

1. After you install the agent, the log informs you of the dataset name and member with the JCL you need to run. For an upgrade, you can find the JCL for the BIND job in *datahlq.JCL* on the host, where *datahlq* is the high-level qualifier of the datasets used to store ControlCenter data.
2. Run the JCL for all BIND jobs and ensure they complete successfully.
3. After performing the BIND operation, issue the GRANT EXECUTE statement to grant the privilege to use the bound plan. This must be performed by someone with DB2 bind authority.

The commands are as follows:

```
GRANT EXECUTE ON PLAN DB2REPRT TO PUBLIC ;  
GRANT EXECUTE ON PLAN TBIXINFO TO PUBLIC ;  
GRANT EXECUTE ON PLAN SDTSINFO TO PUBLIC ;
```

Starting Database Agent for DB2

To start Database Agent for DB2

1. Start the agent in the Console or use the following command:
F CSMAGENT,ENV S MM2AGENT
2. Verify agent startup on each image. Look for message MM2@100I.
3. Perform setup for the agent and the subsystem in the Console.

For more information, refer to Chapter 11, *Performing Agent Setup in the Console*.

Starting All Agents on the MVS Host

This section describes how to start agents automatically when the Master Agent starts on MVS. This is the easiest procedure to use during your initial product installation and configuration.

For other ways to start and stop agents, refer to *Starting and Stopping Agents for MVS* on page B-2.

You can start the agents one at a time in the Console.

Alternatively, shut down the Master Agent and restart it. All other agents will start at once.

Use the following operator command:

F CSMAGENT, SHUTDOWN

Wait several minutes, and then issue:

S CSMAGENT

Verifying Agent Startup

This section lists the messages you should receive after starting the the individual agents. Look for these messages in the log for each image where you started ControlCenter agents on MVS.

1. Verify that the following agent startup messages issued (if you installed a specific agent):
 - MM2@100I (Database Agent for DB2)
 - MM3@100I (internal Console messaging agent)
 - MMH@100I (Host Agent for MVS HSM)
 - MML@100I (Logical Agent for MVS)
 - MMP@100I (Physical Agent for MVS)
 - MMS@100I (Host Agent for MVS SMS)

2. Ensure the following HSM-related messages appear:

```
+HAP5572I ControlCenter/HSM COMMAND PROCESSOR SPACE STARTUP
+HAP5551I ControlCenter/HSM MESSAGE PROCESSOR SPACE STARTUP
```

If you discover that you need to change anything you have configured during the installation, refer to Appendix B, *Maintaining Agents for MVS* for procedures.

Performing Agent Setup in the Console

This chapter discusses how to set up agents in the Console.

- ◆ Performing Agent Setup in the Console 11-2
- ◆ Database Agent for DB2 Setup 11-3
- ◆ Host Agent for MVS HSM Setup (Optional) 11-6
- ◆ Host Agent for MVS SMS Setup (Optional) 11-7
- ◆ Logical Agent Setup and Alert Definitions (Required) 11-9

Performing Agent Setup in the Console

After you install the agent and perform any postinstallation steps, you can start the agent. Then perform agent setup in the ControlCenter Console. Agent setup is required for certain agents, optional for some agents, and not applicable for some agents.

The following agents have optional or required postinstallation setup in the ControlCenter Console:

- ◆ Database Agent for DB2—adding more DB2 subsystems running on the same host, if any
- ◆ Host Agent for HSM—setting up reporting
- ◆ Host Agent for SMS—setting up reporting
- ◆ Logical Agent for MVS—setting up catalog processing, scheduling collection of space utilization data

For Physical Agent for MVS, data collection policies are enabled by default, except for Workload Analyzer Archiver policies.

Database Agent for DB2 Setup

After starting the Database Agent for DB2, perform do the following to complete the installation and ensure that the agent runs properly:

- ◆ Configure data collection for DB2 alerts and reports

The agent uses facility called the *detector* to gather information on a periodic basis for alerts and reports. The Console online help has guidelines on setting the frequency of detector operation. In general, make collection more frequent if alerts are the priority, and less frequent if reports are the priority.

- ◆ Configure collection of DB2 summary data

Perform these steps for the database you specified during installation.

Configuring Data Collection for DB2 Alerts and Reports

To configure data collection for DB2 alerts and reports:

1. Determine how often to run the detector. Refer to the Console online help for guidelines.
2. Set the detector frequency in the ControlCenter Console.
 - a. In the **Hosts** tree, find the host where the DB2 subsystem is running.
 - b. Right-click the host and select **Database Agent for DB2, Explore**.
 - c. In the agent window, right-click an individual DB2 subsystem, select **Setup** and **Set Detector/Alert Timer**.
 - d. Complete the **DB2 Timer** dialog box and click **OK**.
 - e. Repeat steps a through d for each DB2 subsystem (instance).
3. Monitor execution of the detector.

Use alerts to ensure that you collect essential data needed to monitor DB2 and run DB2 reports.

By default, the tablespace RUNSTATS return code alert monitors all databases and tablespaces. Be sure the alert is enabled and that the trigger values use the appropriate severity. Select the hosts on which the detector runs.

Configuring Collection of DB2 Summary Data

In the Console main window, the tree panel displays summary data of the DB2 instances present on a host. No configuration is required. Discovery of these instances takes place at startup of the Database Agent for DB2. If you add or remove a DB2 instance on a host, restart the agent on the same host to refresh the Console display.

Adding More DB2 Subsystems

After installation and startup of the agent, you can add more DB2 subsystems using the ControlCenter Console. Specify additional DB2 subsystems using this procedure. You can specify a total of 99 DB2 subsystems per host.

First, add a subsystem in the Console. Second, run the Bind JCL and issue GRANT EXECUTE statements for the subsystem. Finally, configure data collection for the subsystem you added.

You or a designated person at your site must have DB2 bind authority to complete this procedure.

To add more DB2 subsystems to agent control:

1. Explore the Database Agent for DB2.
2. Right-click **Database Agent for DB2** and select **Setup, Add DB2 Subsystem**.
3. In the **Add DB2 Subsystem** dialog box, specify the parameters for the subsystem. Click **Help** for a description of the fields. Click **OK**.
4. When the process completes, view the log file. Note the name of the dataset and member that contains the DB2 BIND JCL for the subsystem. Also note the PROC names and PROCLIB in which they are located. Do not continue until you scroll to the bottom of the log and note the required steps and relevant dataset names. Record this information and keep it for later use.
5. If you have more subsystems to add, click **Add Subsystem**. Otherwise, click **Close**, and then go on to the next section.

Host-Based Steps Required for the Added Subsystems

After you add subsystems, perform the following steps on the MVS host:

UPGRADE: This procedure is **required** for previously defined subsystems for which binding has already been performed.

To authorize and bind for the Database Agent for DB2:

1. After you install the agent, the log informs you of the dataset name and member with the JCL you need to run. For an upgrade, you can find the JCL for the BIND job in *datahlq.JCL* on the host, where *datahlq* is the high-level qualifier of the datasets used to store ControlCenter data.
2. Run the JCL for all BIND jobs and ensure they complete successfully.
3. After performing the BIND operation, issue the GRANT EXECUTE statement to grant the privilege to use the bound plan. This must be performed by someone with DB2 bind authority.

UPGRADE: You can skip this step for DB2 subsystems for which you issued GRANT EXECUTE statements in a prior release.

The commands are as follows:

```
GRANT EXECUTE ON PLAN DB2REPRT TO PUBLIC ;  
GRANT EXECUTE ON PLAN TBIXINFO TO PUBLIC ;  
GRANT EXECUTE ON PLAN SDTSINFO TO PUBLIC ;
```

4. Start the agent in the Console or use the following command:

```
F CSMAGENT,ENV S MM2AGENT
```

Or restart it if it is already running:

```
F CSMAGENT,ENV R MM2AGENT
```

5. Verify agent startup on each image. Look for message MM2@100I.

After you finish adding the subsystems and completing steps on the host, set up data collection for the subsystems. Refer to *Configuring Data Collection for DB2 Alerts and Reports* on page 11-3.

Host Agent for MVS HSM Setup (Optional)

UPGRADE: If you performed these steps in a previous release, you do not have to repeat them.

These steps are required only if you use DFSMSHsm, IBM's data migration and backup software. The defaults in the setup menu were provided when the Host Agent for MVS HSM software was deployed. You can return to optimize these agent values later. Perform this procedure on all hosts where the agent is to run.

Begin in the main window of the ControlCenter Console. Expand **Hosts** until you find an MVS host where the Host Agent for MVS HSM is running. To specify the **Message System** value and any optional fields for Host Agent for MVS HSM:

1. Right-click the host and select **Host Agent for MVS HSM**. A new window appears for the agent.
2. Right-click **Host Agent for MVS HSM**. Select **Setup, Basic Setup**.
3. For **Message System**, type the SMFID of the agent host.

If you do not know the single-character SMFID or HSM Host ID, when logged on to the host on which you are running the HSM agent, enter the following command in the TSO READY prompt:

```
READY
```

```
hsend q setsys
```

Output similar to this example will appear:

```
ARC0101I QUERY SETSYS COMMAND STARTING ON HOST=8
ARC0147I BUDENSITY=*, BUUNIT=SILO, BU RECYCLE
PERCENTAGE=050%, MOUNT WAIT
```

The first message (ARC0101I) contains the HOST= value.

Any time both HSM and Host Agent for MVS HSM are running on the same LPAR, you can enter the SMFID as the **Message System** name in the **Basic Setup** panel, and the transaction will translate it to the single-character HSM host ID.

4. Click **Help** on the dialog box for assistance with any other fields. No other changes are required at this time.

Host Agent for MVS SMS Setup (Optional)

UPGRADE: If you performed these steps in a previous release, you do not have to repeat them.

The setup steps in this section are optional. You can use defaults initially, and then return to optimize these agents later.

Begin in the main window of the Console. Expand **Hosts** until you find an MVS host running the Host Agent for MVS SMS.

- ◆ Configure storage monitoring rules
- ◆ Configure fragmentation monitoring rules

Configuring Storage Monitoring Rules

The Host Agent for MVS SMS lets you notify TSO users about out-of-space conditions. To issue notices to TSO users:

1. Expand **Hosts** in the tree panel. Right-click an MVS host and select **Host Agent for MVS SMS, Setup, Space Monitoring**.
The **Storage Monitoring Rules Setup** dialog box is displayed.
2. Specify the user IDs of the TSO users you want notified about out-of-space conditions.
3. Specify the SMF ID of the system to be checked each hour.
4. Set the space threshold for non-SMS volumes and SMS groups.
5. Indicate any non-SMS volumes or SMS groups to include or exclude from monitoring.
6. Click **OK** to finish.

Configure Fragmentation Monitoring Rules

The Host Agent for MVS SMS allows you to monitor fragmentation conditions for your SMS-managed storage. To define the rules by which you want the agent to work:

1. Expand **Hosts** in the tree panel. Right-click an MVS host and select **Host Agent for MVS SMS**.
2. Select **Setup, Fragmentation Monitoring**.

The **Fragmentation Monitoring Rules Setup** dialog box is displayed.

3. Specify **Yes** to enable the defragmentation processing.

A simulated defragmentation generates a report listing what would be defragmented.

4. Specify a value in the **Fragmentation Threshold Value** field (the higher the number specified, the greater the fragmentation allowed before the defragment job runs). The default is 400.
5. For **Time that job should be submitted**, specify the time for the job in either military units or standard time, separating with a colon. For example, specify 23:55 to start the job at 11:55 p.m., or 1:30 a.m. to run the job at that time.
6. Specify non-SMS volumes or SMS groups to include or exclude in the defragmentation.
7. Enter the job card instructions to run your defragment JCL when the value exceeds your predefined level.

When the fragmentation threshold is reached, ControlCenter generates the necessary JCL and puts it into queue for submission and execution at the time you designate. If the agent is cycled in the interim, the command still runs as scheduled.

Logical Agent Setup and Alert Definitions (Required)

UPGRADE: If you performed these steps in a previous release, you do not have to repeat them.

Use the procedures in this section for setup procedures and alert definitions necessary for the Logical Agent's functionality.

If you are not going to use VSAM Quick Index or VSAM Assist functionality through ControlCenter, then skip the first subsection and continue with the rest. Otherwise, complete all subsections.

Catalog and VVDS Backup HLQ and Naming Conventions

These settings are required. Begin in the main window in the Console. Expand **Hosts** in the tree, right-click an MVS host, and then select **Logical Agent for MVS**. A new window appears for the agent.

To specify the location and naming convention for catalog backups:

1. Right-click **Logical Agent for MVS** and select **Setup, CSL Dump**.
2. Specify the SMF record type. This setting is optional.

If you do not specify an SMF record type, then you cannot search SMF records to locate catalog backups. You must know the locations of the backups, as specified in the other field on this dialog box.

Ensure that the record type you specify is *not* in use by any other program or resource.

3. Optionally, specify a different destination high-level qualifier and naming convention for catalog and VVDS backup dumps if you do not prefer the default created during the agent installation.
4. Click **OK**.

VSAM Quick Index and Assist Load Libraries

This procedure assumes you have already installed one or both of these products (if not proceed to the next section). VSAM Quick Index or VSAM Assist settings are required to use their functionality through ControlCenter. VSAM Quick Index and VSAM Assist are

separately licensed products. If you will not be using any of these products from within the Console, go to the next section, *Specifying the Catalog Host* now.

Begin in the main window of the Console. Expand **Hosts** in the tree, right-click an MVS host, and select **Logical Agent for MVS**. A new window appears for the agent.

To specify the VSAM Quick Index or VSAM Assist load libraries:

1. Right-click the agent and select **Setup, Basic Setup**.
2. In the **Catalog Host** field, specify the SMF ID of the current MVS host (on which the agent is installed).
3. On the **Libraries** tab, specify the load libraries for VSAM Assist and VSAM Quick Index.
4. Click **OK**.

Specifying the Catalog Host

You must specify the catalog host (the current image) for each instance of the agent. This is necessary to prevent redundant catalog processing and contention against the system catalog resources.

If you specified the catalog host for all instances of the agent in *Catalog and VVDS Backup HLQ and Naming Conventions* on page 11-9, then you do not need to do so again.

If you do not specify the catalog host, then some agent functions may yield error message MML9476E - CATHOST name is blank. Completing the current procedure is the best response to that error message.

Begin in the main window of the Console. For instructions on starting the Console, refer to the *EMC ControlCenter Administration/User Guide*. Expand **Hosts** in the tree, right-click an MVS host, and select **Logical Agent for MVS**. A new window appears for the agent.

To specify the catalog host:

1. Right-click the **Logical Agent for MVS** and select **Setup, Basic Setup**.
2. In the **Catalog Host** field, specify the SMF ID of the current MVS image (on which the agent is installed).
3. Click **OK**.

DCOLLECT Dataset Allocation (Optional)

The following DCOLLECT configuration procedures are optional for DASD space activity and utilization alerts and reports in the Logical Agent for MVS. During installation, the number of online volumes is determined, so only make changes to this if needed.

Begin in the selection tree of the Console. Expand **Hosts** in the tree, right-click an MVS host, and then click **Logical Agent for MVS, Explore**. A new window appears for the agent.

To configure DCOLLECT dataset allocation and management:

1. Under the MVS host that you want to perform DCOLLECT processing, right-click **Logical Agent for MVS** and select **Setup, Basic Setup**.
2. Click the **Data Collection** tab.
3. Optionally, specify properties for the data collection dataset used for space alerts and reports. If you make changes, you must specify the new DASD unit name. The primary space size will be updated dynamically by returning to Basic Setup. Optional properties include a volser, storage class, and management class.

Table 11-1 includes complete descriptions and recommendations.

Table 11-1 Descriptions for DCOLLECT Dataset Allocation Preferences

Field	Description
DASD Unit Name	The storage unit name on which you want DCOLLECT datasets to reside. This field is required.
Volser	The volume on which you want the datasets to reside. This field is optional and we do not recommend using it except when absolutely necessary, depending on the environment.
Storage Class	The storage class you want to assign to the datasets. This field is optional.
Management Class	The SMS management class you want to assign to each DCOLLECT dataset. This field is optional. Its value depends on the size of the DCOLLECT datasets and whether you plan to use the data for reports (do not migrate) or alert monitoring only (migration acceptable).

4. Click **OK** when finished.

Data Collection for DCOLLECT

Space use alerts and reports use data collected by a DCOLLECT operation at regular intervals. An alert called `SpaceUsed.Schedule.DCOLLECT` controls the scheduling of the data collection.

Begin in the ControlCenter Console. This procedure assumes you have completed *DCOLLECT Dataset Allocation (Optional)* on page 11-11.

To schedule DCOLLECT data collection:

1. In the selection tree, expand **Administration, Alert Management, and Alert Templates**.
2. Expand **Logical Agent for MVS, Space Used, and Schedule**.
3. Right-click **DCOLLECT** and select **New**. The **Alert Definition** dialog box is displayed.
4. Click **Actions**.
5. In the **Schedule** list box, select **Day_01_2200**. This schedules the alert to run at 10 p.m. each day. This causes future DCOLLECT operations to finish before midnight (in the majority of environments), which decreases agent response time when you run reports later. It also avoids conflicts with other processes commonly scheduled for midnight.

Alternatively, select or create the schedule of your choice:

- Do not specify a schedule more frequently than once per day, as reports cannot show the additional data.
 - To optimize response time when you create reports, schedule the DCOLLECT to finish just before midnight (12:00 a.m.).
 - Consider how to time the DCOLLECT processing to avoid contention with other processes.
6. Click **Apply to**.

Troubleshooting the Installation of Agents for MVS

This chapter provides troubleshooting information for the Master Agent and agent installation.

- ◆ Troubleshooting General Installation Problems 12-2
- ◆ Troubleshooting TCP/IP on MVS Hosts 12-7
- ◆ Master Agent Troubleshooting Tools 12-10

Troubleshooting General Installation Problems

This describes some errors that occasionally occur and some suggested solutions.

Stopping Agents on MVS

To stop all ControlCenter agents on an MVS host, use the command:

```
F CSMAGENT, SHUTDOWN
```

To shut down all MVS agents and the data address space CSM\$DATA, use the command:

```
F CSMAGENT, SHUTDOWN EOD
```

The data address space CSM\$DATA is designed to run continuously between IPLs. It maintains agent-related persistent data and continuity between agent executions.



CAUTION

Terminating the CSM\$DATA address space can cause loss of agent data, interfere with data gathering, or both. Only use the EOD option immediately before an IPL.

You can use the stop command (P CSMAGENT) to shut down the executing agents, but we no longer recommend using this command. This is functionally equivalent to the F CSMAGENT, SHUTDOWN command without the EOD option. To ensure compatibility with future ControlCenter releases, avoid using the stop command.

MVS Agents Not Reaching the Console

MVS agents appear in the Console in shortcut menus. In the Console selection tree, expand **Hosts**. Then right-click an MVS host and look for the MVS agent names (for example, Physical Agent for MVS). If none appear in the shortcut menu, use these troubleshooting steps, and verify agent startup using the procedure in *Verifying Agent Startup* on page 10-4.

Physical Agent for MVS Receiving Error Messages

Physical Agent for MVS receives an error message, which can occur for data set `datahlq.sysname.MMP.WLA.SENDNOW` and environment `MMPXMWLR`. An example follows:

```
IEC070I 203-203 for data set datahlq.sysname.MMP.WLA.SENDNOW
MMP0004E DIV MAP ERROR
MMP@313E Environment: MMPXMWLA has been disabled
```

Follow these steps to address the error message:

1. Stop the Physical Agent for MVS.
2. Delete the datasets `datahlq.sysname.MMP.WLA.SENDNOW` and `datahlq.sysname.MMP.WLA.REVOLVE`.
3. Restart the Physical Agent for MVS to reallocate the datasets with proper attributes.

APF Errors

Figure 12-1 shows typical messages received when the `codehlq.LOADLIB` has not been APF-authorized:

```
$HASP100 CSMAGENT ON STCINRDR
IEF693I PROCEDURE CSMAGENT IS ASSIGNED TO USER ++++++
$HASP373 CSMAGENT STARTED
IEF403I CSMAGENT - STARTED - TIME=21.24.16
+MMA@902I ControlCenter MAIN REQUIRES APF AUTHORIZATION
IEF450I CSMAGENT CSMAGENT - ABEND=S000 U0902 REASON=00000000 384
TIME=21.24.17
IEF404I CSMAGENT - ENDED - TIME=21.24.17
$HASP395 CSMAGENT ENDED
```

Figure 12-1 Viewing an Example of an APF Error

If possible, APF-authorize the `codehlq.LOADLIB` dataset. Alternatively, add `codehlq.LOADLIB` to an APF-authorized dataset, and then edit the system profile and specify this dataset name. Use the ISPF installation setup panels to make this specification.

Read and Write Errors During User ID Mapping

If you receive write errors in the ISPF panels while mapping TSO IDs to Console IDs, then you may not have security access to the datasets where configuration data is stored. You cannot complete the installation without this security access.

The user ID performing Master Agent installation must have read authority to *codehlq*.INSTALL and update authority to *datahlq*.MMAINI. (If MMAINI has a different high-level qualifier than the install dataset, then use that high-level qualifier.) For a description of high-level qualifiers and how they are used, refer to *Naming Conventions for Dataset Prefixes* on page 1-12.

HSM ARCINEXT User Exit Conflicts and Errors

Problems with ARCINEXT could mean upgrade installers need to edit the HSM member of the PARMLIB or reassemble ARCINEXT, depending on your environment.

ControlCenter no longer uses the HSM ARCINEXT user exit. If you performed an upgrade installation, you may have merged ControlCenter agent code into this user exit for a prior release.

In case of a problem with ARCINEXT:

- ◆ If other applications use ARCINEXT, remove the ControlCenter code from the source and reassemble the exit. Ensure that the command SETSYS EXITON(ARCINEXT) *remains in* the HSM member in the PARMLIB.
- ◆ If no other programs use the exit, remove the command SETSYS EXITON(ARCINEXT) from the HSM member in the PARMLIB.

Refer to *Removing the HSM STEPLIB Specification* on page 13-22 and *Removing HSM ARCINEXT Configuration* on page 13-22.

Dataset *xxx* Does NOT Exist

The installation failed because of an incorrect dataset name.

Ensure that all PROCs have been copied to a JES PROCLIB.

Repeat the installation, ensuring a correct dataset name.

Master Agent Failed to Receive the Necessary Script File

Installation failed because the Master Agent failed to receive the necessary script file.

The install unit was blank or it specified a unit incompatible with your site's SMS ACS routine. Edit dataset *datahlq*.SSTINI(MMN:xxx), and change "install unit = *nnnnn*" to a unit name valid at your site. Then restart MMNSERVER. This will restart all the agents running on the MVS host.

Installation Returns Status: Unknown

The host did not return a log file as expected. Status of the installation is unknown.

The installation may or may not have completed. Using ISPF Option 3.4, check for a dataset name of *datahlq.product*.ILOG*, where *product* is *MMxnnn*, with *MMx* as the agent code, and *nnn* the version, release, and modification number.

Browse the dataset for information about the installation. Also, see MMAREXX output for any messages.

User Abends

The following user abends indicate problems with the agents not working or not performing as expected. Check the JES2 log to determine if any of these user abend messages might be the source of the problem:

- ◆ U1003—Authorized library missing
- ◆ U1010—Unable to allocate WHO dataset
- ◆ U1077—STEPLIB error
- ◆ U1099—Security error

No Active Module Found: Abend

The MVS JCL job issues this message when it creates customized ControlCenter datasets from *HLQ.rmtinst.xmit*.

SSTINI - No Active Module Found

SYSTEM COMPLETION CODE=013 REASON CODE=00000018

Description: You did not specify different HLQs for *Codehlq* and *Datahlq* in the Installation Wizard. The SSTINI dataset is created as a *Datahlq* dataset and also as a *Codehlq* dataset in a successful installation. The job will fail if different names are not specified in the Wizard.

Response: Delete all ControlCenter MVS datasets and run the Wizard again with different names entered for *Codehlq* and *Datahlq* (refer to Chapter 7, *Installing Master Agents on MVS Hosts* for details).

The problem produces a joblog entry similar to:

```

15.25.32 JOB07363 IEC141I
      013-18, IGG0191B, PSYSJGBI, STEP3, SSTIN, 464B, SYF405, SYS4.EMC.CNTC.SSTINI
15.25.32 JOB07363 IEA995I SYMPTOM DUMP OUTPUT
      SYSTEM COMPLETION CODE=013 REASON CODE=00000018
      TIME=15.25.32 SEQ=21468 CPU=0000 ASID=0096
      PSW AT TIME OF ERROR 075C1000 80DE108E ILC 2 INTC 0D
      NO ACTIVE MODULE FOUND
      NAME=UNKNOWN
      DATA AT PSW 00DE1088 - 41003A62 0A0D4DE0 39FE5820
      GR 0: 00DE1274 1: A4013000
          2: 0000E400 3: 00DE0812
          4: 0089F410 5: 0089F7A4
          6: 0089F74C 7: 0089F7A4
          8: 0089F76C 9: 00FC8D18
          A: 00FA5390 B: 0089F024
          C: 00000008 D: 00000000
          E: 80DE0942 F: 00000018
      END OF SYMPTOM DUMP
15.25.33 JOB07363 PSYSJGBI 03 STEP3 IKJEFT01 ----- RET= 008
15.25.33 JOB07363 IEF404I PSYSJGBI - ENDED - TIME=15.25.33

```

Connection to FTP Server Failed Message

The MVS JCL job issues this message when it creates customized ControlCenter datasets from HLQ.rmtinst.xmit.

Connection to FTP server XXX on port 21 has failed with error code 10022.

Description: This message is issued when the Install Wizard fails to start an FTP session with the MVS LPAR during file upload. The MVS system is never contacted and there is no activity on the MVS Console Log. The Wizard Tracelog has no entries.

Response: The problem occurs because the entry for Hostname (XXX) in the first Wizard panel is not found. This entry must be either a correct DNS name or the IP address of the MVS target.

Troubleshooting TCP/IP on MVS Hosts

ControlCenter agents use TCP/IP to communicate with the ECC Server and Store, so TCP/IP must be properly configured on the MVS host on which the agents for MVS are installed. Refer to Chapter 3, *Testing the TCP/IP Configuration*, to test your TCP/IP configuration.

Viewing Detailed TCP/IP Configuration

If the ISPF setup panels are rejecting the TCPDATA dataset you entered, you can run the TCPVERIF utility (the ISPF setup panels use this utility internally) from ISPF option 6 for more detailed error messages:

```
(TSO) EXEC 'codehlq.INSTALL(TCPVERIF) '  
'VERIFY tcpdatasetname'
```

If the TCPVERIF utility can resolve the name of the MVS host, but the ControlCenter MVS agents cannot, make sure your BSD style host tables are configured correctly, as explained in *Establishing Hostname Resolution* on page 3-6.

Finding DNS Configuration Information

If you are using a DNS and the ControlCenter MVS agents cannot resolve the hostname of the MVS host from it, you can use SDSF to check the following:

- ◆ MMNSERVER MMNLOG, which is the log file for one of the Master Agent's PROCs (MMNSERVER). Check MMNLOG to see what the agents are using for the hostname and domain name. If the hostname and domain name are correct, verify that the agents are using the correct TCPDATA dataset in SYSTCPD DD, and that the TCPDATA dataset contains the correct information. Refer to *TCPDATA Dataset Settings* on page 12-8 for specific configuration parameters.
- ◆ MMNSERVER SYSPRINT, which contains information about how the MVS host is communicating with the DNS server.

TCPDATA Dataset Settings

For IBM Communications Server, ensure that the TCPDATA dataset is specified in SYSTCPD DD.

For either TCPAccess or IBM Communications Server, make sure the TCPDATA dataset contains the following:

- ◆ TCP/IP dataset prefix (DATASETPREFIX)
- ◆ Name of the DNS server(s) (NSINTERADDR), if you are using DNS to resolve the hostname
- ◆ Host name or domain name (HOSTNAME, DOMAINORIGIN)
- ◆ The TCP/IP stack (TCPIPJOBNAME)

IBM Language Environment (LE) Software

For IBM Communications Server, the TCP/IP started task PROC may specify PARMS on the EXEC statement. One commonly seen parm sets the environmental variable RESOLVER_CONFIG:

```
PARMS= ' ENVAR ( "RESOLVER_CONFIG=/' ' ' TCPIVP.TCPPARMS
(TCPDATA) ' ' " ) ' )
```

TCP/IP software based on IBM's Language Environment (LE) uses the RESOLVER_CONFIG environmental variable to find the TCPDATA dataset; ControlCenter MVS agents ignore this environmental variable.

Master Agent for MVS and Hostnames

If you enter the MVS hostname in the TCPDATA dataset in the following manner:

```
system_name: HOSTNAME hostname
```

where *hostname* is the MVS hostname, the Master Agent for MVS incorrectly uses *system_name* for the hostname, rather than *hostname*.

The Master Agent for MVS works correctly when the hostname is not specified in TCPDATA, or if the hostname is specified without the system name:

```
HOSTNAME hostname
```

As a workaround, add an alias or host entry to ETC.HOSTS for the *system_name*.

Socket Initialization Error

Agents for MVS in ControlCenter 5.2 Service Pack 4 use SAS/C 6.5 runtime, which by default requests a maximum of 2000 sockets during socket initialization. If your MAXFILEPROC value in SYS1.PARMLIB(BPXPRMnn) is not 2000 (sockets and files) or greater, you will see an error similar to the following:

```
LSCX471  ERRNO=ENETDOWN, TCPIP failed with IBM errno:
10198, using HPNS
```

To correct this problem, either adjust the number of sockets and files in MAXFILEPROC to be greater than 2000, or apply the fix available from www.sas.com/service/techsup/unotes/C/1789.html.

Verifying if the DNS Server Is Up

If you are using a DNS server for hostname resolution, you can use the NSLookup utility to verify if the DNS server is up.

Master Agent Troubleshooting Tools

Use the tools described in this section to troubleshoot problems with the Master Agent.

MVS Console Commands

You can use the following MVS console commands to find out more information about the NetServer component of the Master Agent.

NetServer Help

From the MVS Console, issue the command:

```
F csmslave.MMNSERVER,HELP
```

Where `csmslave` is the default procname.

Sample output follows:

```
MMN0500I Received command request: 'HELP'
MMN0930I Help format: COMMAND (abbreviations): descriptions.
MMN0930I ? (h,help): Display the help panel.
MMN0930I MMNINFO (d,display,q,query): Display the NetServer status.
MMN0930I SET LOGLVL=0-5 (s): Change the logging level.
MMN0930I VERSION (v): Display the NetServer version number.
```

NetServer Information

From the MVS Console, issue the command:

```
F csmslave.MMNSERVER,MMNINFO
```

Where `csmslave` is the default procname.

Sample output follows:

```
MMN0500I Received command request: 'MMNINFO'
MMN0920I NetServer General Information Display
MMN0921I NetServer status=Active NumTranTask=0 RestartCount=0
MMN0922I NetServer Listener Port=11051 Loglvl=5
MMN0923I SendTask=Active StoreTask=Active InBound=Active
      LogTask=Active
MMN0924I Remote Server=eccserver IP=10.1.1.1 Port=5799
MMN0926I SndCTGCnt=70 SndSSTCcnt=20 RcvSSTCcnt=1 TranRecv=10314
MMN0927I Agent Status CmpId
MMN0927I =====
MMN0928I host_MMN000 Active 8818
MMN0928I host_MMC000 Active 8830
MMN0928I host_MML000 Active 8832
MMN0928I host_MMT000 Active 8825
MMN0928I host_MMI000 Active 149379
MMN0928I host_MMP000 Active 8828
MMN0929I End of display
```

SDSF Resources

You can use SDSF to check the following:

- ◆ MMNSERVER MMNLOG, the log file for PROC (MMNSERVER)
- ◆ MMNSERVER SYSPRINT, which shows DNS server information
- ◆ MMAREXX JES log

Using MMAREXX JES Log

For further troubleshooting, you can view the MMAREXX JES log.

To locate the MMAREXX JES log:

1. Go to SDSF.
2. Type **DA**.
3. Type **prefix CSM***.

The ProcStep you are looking for contains MMAREXX.

Display	Filter	View	Print	Options	Help						
SDSF	DA	AOSB	AOSB	PAG	2	SIO	28	CPU	23/ 17	LINE 1-17 (17)	
COMMAND INPUT ==>											
SCROLL ==> PAGE											
NP	JOBNAME	StepName	ProcStep	JobID	Owner	C	Pos	DP	Real	Paging	SIO
	CSMSLAVE	MMSRE010	MMSREXX	STC05652	TECHDFT	LO	FF	807	0.00	0.00	
	CSMSLAVE	MM2A0009	MM2AGENT	STC03664	TECHDFT	LO	FF	108	0.00	0.00	
	CSMSLAVE	MMHX002	MMHX002	STC03668	TECHDFT	LO	FF	313	0.00	0.00	
	CSMSLAVE	MM2A0010	MM2AGENT	STC03665	TECHDFT	LO	FF	125	0.00	0.00	
	CSM\$DATA	CSM\$DATA	IEFPROC			NS	F5	1712	0.00	0.00	
	CSMSLAVE	MMIAGENT	MMIAGENT	STC03661	TECHDFT	LO	FF	1085	0.00	0.00	
	CSMSLAVE	MMLAGENT	MMLAGENT	STC03656	TECHDFT	LO	FF	316	0.00	0.00	
	CSMSLAVE	MMHX001	MMHX001	STC03667	TECHDFT	LO	FF	132	0.00	0.00	
	CSMSLAVE	MMSAGENT	MMSAGENT	STC05651	TECHDFT	LO	FF	1191	0.00	0.00	
	CSMSLAVE	MMHAGENT	MMHAGENT	STC03655	TECHDFT	LO	FF	259	0.00	0.24	
	CSMSLAVE	MM2AGENT	MM2AGENT	STC03658	TECHDFT	LO	FF	1170	0.00	0.00	
	CSMSLAVE	MMYAGENT	MMYAGENT	STC03660	TECHDFT	LO	FF	355	0.00	0.00	
	CSMSLAVE	MMCAGENT	MMCAGENT	STC03662	TECHDFT	LO	FF	1471	0.00	0.00	
	CSMSLAVE	MM3AGENT	MM3AGENT	STC03659	TECHDFT	IN	F5	188	1.78	0.00	
	CSMAGENT	CSMAGENT	CSMAGENT	STC03653	TECHDFT	IN	F5	254	0.00	0.19	
----	CSMSLAVE	MMARE011	MMAREXX	STC05668	TECHDFT	IN	F5	849	0.00	13.54	
	CSMSLAVE	MMNSERV	MMNSERV	STC03654	TECHDFT	IN	F5	4015	19.21	7.86	

Upgrading from a Previous Release

This chapter provides information for upgrading from a previous ControlCenter release to ControlCenter 5.2 Service Pack 4. Because of the flexibility of the OS/390 and z/OS environment, this chapter covers issues for you to consider. Use these considerations when referring to the step-by-step installation instructions found in the earlier chapters.

- ◆ Upgrading to a New Release..... 13-2
- ◆ Backing Up the Previous Installation..... 13-3
- ◆ Performing Preinstallation for an Upgrade 13-4
- ◆ Installing Agents at the Current Release 13-5
- ◆ Postinstallation for Database Agent for DB2 13-21
- ◆ Performing Postinstallation Cleanup Steps for an Upgrade ... 13-22
- ◆ Reverting to an Earlier Release 13-24

Upgrading to a New Release

The upgrade process brings the current agent code into use on your MVS hosts.

The upgrade process allows the new agents to continue using and adding to the storage data collected by previous releases. Historical reports under the new agents will include data collected by previous releases.

The upgrade installation is a process of backing up previous data, upgrading a single host, and then upgrading other hosts. Certain postinstallation steps are required for upgrades, while others are not necessary since you performed them in a previous release.

The remainder of the chapter contains procedures for upgrade installation.

Changes to the Upgrade Process in the Current Release

For MVS agent installation, the OS/390 Master Agent Upload Wizard now collects all Master Agent installation parameters. The ISPF panels are used only for Console user ID mapping.

The OS/390 Master Agent Upload Wizard allows you to `FTP` the files to a different host from where you plan to install.

After a starter Master Agent installation on one MVS host, the Master Agent can be installed on subsequent hosts from the ControlCenter Console. The subsequent hosts must share DASD with the first host.

Installation of the MVS Master Agent can be performed from the new Console installation wizard.

The installation wizard can install MVS agents to all hosts in the same Sysplex in a single operation, with the exception of the Database Agent for DB2. The installer must know the hosts that are in the Sysplex.

The OS/390 Master Agent Wizard now has an upgrade option. Data entry is still required for the Master Agent upgrade, but using this option causes installation parameters to be retained during individual agent upgrades in the Console.

MVS agent upgrades in the Console now retain installation parameters (questions) from the prior release, preventing the need to specify them again. You must still specify DB2 subsystems beyond the initial installation.

Backing Up the Previous Installation

Before you do anything else, first shut down ControlCenter. Then back up your datasets from the previous installation. This section focuses on the datasets that are most important.

- ◆ Before you install the new release, back up all *datahlq* datasets. These are listed in Appendix A, *Dataset Management for MVS Agents*.
- ◆ If you still have the installation datasets or media from the previous release, you do not need to back up code datasets. Otherwise, back up *codehlq* datasets also. This is normally not necessary.
- ◆ Back up the Master Agent PROCs and agent PROCs for the previous release. Refer to the *EMC ControlCenter Installation and Configuration Guide* for a list of the PROCs provided with versions prior to ControlCenter 5.1.

Refer to the *EMC ControlCenter Installation Guide Volume 2 (MVS Agents)* for ControlCenter 5.1 or 5.1.1 for a list of the PROCs.

- ◆ Optionally, remove the PROCs from the JES PROCLIB. This is a safeguard against starting new agents with old agent PROCs. Do not start the upgraded agents without copying the PROCs generated by the upgrade.

Performing Preinstallation for an Upgrade

This section describes preinstallation steps necessary for the upgrade process on MVS.

Determining Configuration Parameters

First, determine the configuration parameters for the Master Agent upgrade. You may need to use the ISPF panels from the previous installation to determine some parameters to reuse, or refer to the installation worksheets that you filled out for the earlier release. Determine the configuration parameters from the prior release so you can use them in the current installation if needed.

You do not need to determine configuration parameters for agents besides the Master Agent. The upgrade retains these parameters.

Gather the installation parameters for the Master Agent and enter them in the installation worksheets for the current release. Note that the ISPF panels are no longer used for the Master Agent installation. Therefore, you will not specify the installation parameters for the Master Agent in the ISPF panels, but rather in the OS/390 Master Agent Installation Wizard or the ControlCenter Console.

For the Master Agent on each host, you will change *codehlq* to differ from any previous release, but you will keep the same *datablq* from the previous release. This enables ControlCenter agents to keep and use data from prior releases. Specify these parameters accordingly.

Refer to Appendix D, *Upgrade Parameters for MVS Agents*, for worksheets to use during the Master Agent installation.

The current release allows you to FTP installation files to a different host from the one where you intend to install. Therefore, you need to know the system affinity node of the host where you want to install the Master Agent. Refer to *Understanding Host Specifications During Master Agent Upgrade* on page D-2 for an explanation.

Testing the TCP/IP Configuration

If you are migrating a new host for the ECC Server, perform TCP/IP diagnostics to ensure all MVS hosts can resolve the ECC Server hostname. Update DNS or host tables to include the new ECC Server name and IP address. Refer to Chapter 3, *Testing the TCP/IP Configuration*.

Installing Agents at the Current Release

Installing the Master Agent has changed considerably in the current release. The Master Agent installations are performed entirely from a Windows host such as the ECC Server and from the Console. As with prior releases, you must install the Master Agent on each host before you can install agents through the Console.

Table 13-1 Upgrading MVS Hosts

Host to be Upgraded	Master Agent	Agents
Upgrading the first host	For the first agent in a shared DASD environment, use the OS/390 Master Agent Upload Wizard; then run an installation job.	Upgrade agents on the host using the Console Upgrade Wizard.
Upgrading subsequent hosts	For all subsequent hosts that share DASD with the first, "clone" the Master Agent from the first host to the others, using the ControlCenter Console. (Alternatively, you can use the OS/390 Master Agent Upload Wizard again for each host.)	Upgrade agents on the host using the Console Upgrade Wizard. You can upgrade multiple hosts at once.

Upgrading the Master Agent

On a single host in a Sysplex, upgrade the Master Agent, and then upgrade the agents on that host.

This section discusses how to upgrade the Master Agent on the first host in a Sysplex. For the first Master Agent in any shared-DASD environment, you must upgrade using the OS/390 Master Agent Upload Wizard. After completing the Master Agent upgrade, use the Console to upgrade all agents on that host. (This step is required before you can proceed to cloning the Master Agent on other hosts.)

To upgrade the Master Agent on the first host in a Sysplex:

1. Run the OS/390 Master Agent Upload wizard using either of these methods:
 - On the ECC Server, click the desktop shortcut **OS/ 390 Master Agent Upload**.

- Do the following on any Windows host with network connectivity to the target MVS host:
 - a. Insert ControlCenter installation **CD#3**.
 - b. Extract the contents of this file:
`cddrive:\SetupData\Media\IGM512.zip`
 - c. Go to the directory where you extracted the files:
`localdrive:folder\media_rep\remoteinstall\MMA510`
 - d. Click **Mmainst.exe** to execute the program.
The **ControlCenter OS/390 or z/OS Upload Wizard - Host Information** dialog box is displayed.
- 2. In the **Host Information** dialog box, specify:
 - **Host Name** (DNS name or IP address)
 - **FTP Port** (Default port number is 21)
 - **JES Node**. If the host you specified in the **Host Name** field will run the Master Agent, insert its JES Node name. Otherwise, specify the JES Node name for the host that is to run the Master Agent. Refer to *Identifying Hostnames for Master Agent Installation* on page 2-3 for more explanation.
 - Select **Upgrade Install**

If you need the IP address of the MVS host in the **Host Name** field, use HOMETEST (for IBM Communications Server only) or NSLOOKUP results from the host.

Figure 13-1 shows an example of the **Host Information** dialog box.

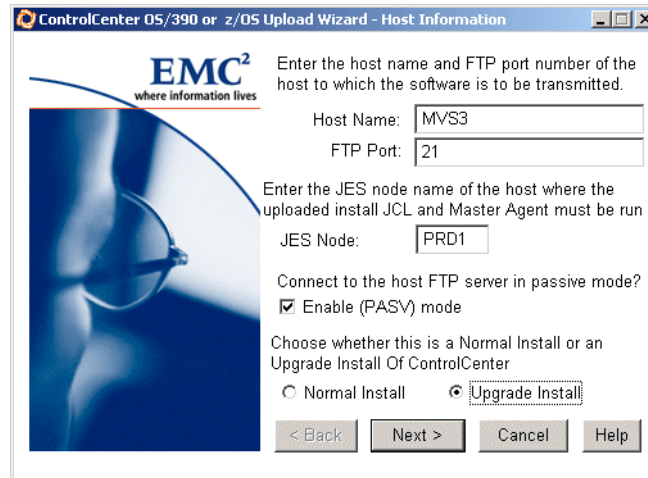


Figure 13-1 Specifying the Host Name and Port Number of the Target System

3. Click **Next**.
4. In the next screen, enter a valid user ID and password for the system specified on the previous screen. For example, you can use your TSO user ID.
5. Click **Next**. The **Codehlq Allocation Information** dialog box is displayed.
6. In the **Codehlq Allocation Information** dialog box, specify the *codehlq* (high-level qualifier) and any desired SMS allocation parameters.
7. Click **Next**. The fields for SMS and non-SMS allocation parameters are optional.

Table 13-2 describes the information you need in the **Codehlq Allocation Information** dialog box.

Table 13-2 Codehlq Allocation Information

Field	Description
Codehlq (Required field)	This high-level qualifier is the location to which the wizard will extract the contents of the XMIT dataset. The high-level qualifier is <i>codehlq</i> as described in <i>Naming Conventions for Dataset Prefixes</i> on page 1-12.
SMS allocation criteria for Codehlq files (All Optional fields)	Optional SMS allocation parameters (only specify if SMS is installed and enabled at your site).
Storage Class	This value must be a valid SMS STORCLAS as defined on your system. If you have SMS ACS rules set up, this can default to the site value.
Data Class	This value must be a valid SMS DATACLAS as defined on your system. If you have SMS ACS rules set up, this can default to the site value.
Management Class	This value must be a valid SMS MGMTCLAS as defined on your system. If you have SMS ACS rules set up, this can default to the site value.
Non-SMS	Non-SMS allocation parameters (required if you want the datasets to reside on a non-SMS managed volume).
Unit	Unit name of the device type where the datasets will reside.
Volume Serial	Volume serial identifier of the device where the datasets will reside. This identifier applies only to the datasets created during installation, and not to the datasets allocated during runtime processing of ControlCenter MVS agents.

8. In the **Codehlq Allocation Information** dialog box, specify the *codehlq* (high-level qualifier) and any desired SMS allocation parameters.

Figure 13-2 shows an example of the **Codehlq Allocation Information** dialog box.

ControlCenter Mainframe Upload Wizard - Codehlq Allocation Information

EMC²
where information lives

Enter the high-level qualifier (Codehlq) for the product data sets to be created on this host. These files may be shared between hosts.

Codehlq:

SMS allocation criteria for Codehlq files

Storage Class:

Data Class:

Management Class:

Non-SMS

Unit:

Volume Serial:

< Back Next > Cancel Help

Figure 13-2 Specifying the Location for the Codehlq Dataset

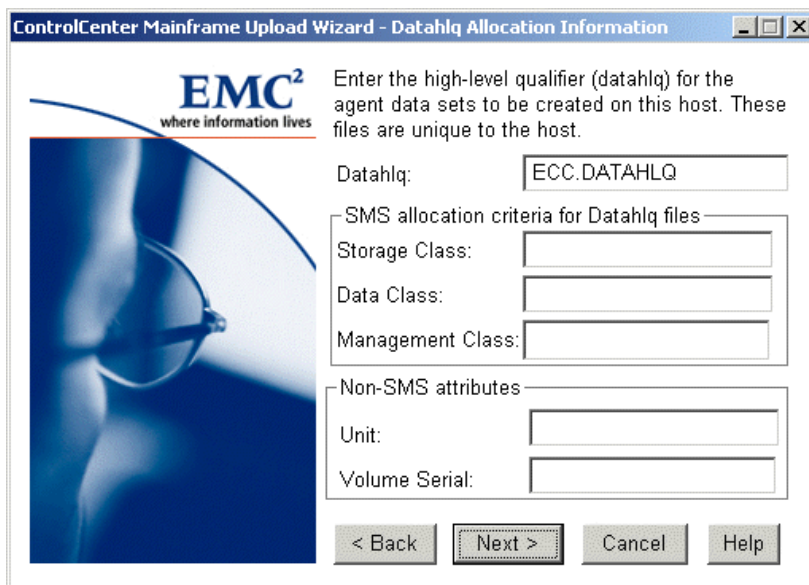
9. Click **Next**. The **Datahlq Allocation Information** dialog box is displayed.
10. Specify the same *datahlq* used for the prior release on the target Master Agent host. Specify allocation parameters you used last release also.

The fields for SMS and non-SMS allocation parameters are optional.

The **SMS** and **non-SMS** fields are available for you to specify allocation parameters for any new datasets created during upgrade. (Prior datasets will not be affected).

If you run DFSMS without UNIT=VIO defined, or you do not have a UNIT=VIO esoteric defined in a non-SMS environment, you must specify a value in the Unit field.

Figure 13-3 shows an example of the **Datahlq Allocation Information** dialog box.



The screenshot shows a dialog box titled "ControlCenter Mainframe Upload Wizard - Datahlq Allocation Information". On the left is the EMC² logo with the tagline "where information lives" and a blue-tinted image of a person's face wearing glasses. On the right, there is instructional text: "Enter the high-level qualifier (datahlq) for the agent data sets to be created on this host. These files are unique to the host." Below this text are several input fields: "Datahlq:" with the value "ECC.DATAHLQ", "SMS allocation criteria for Datahlq files" (a collapsed group box containing "Storage Class:", "Data Class:", and "Management Class:"), and "Non-SMS attributes" (a collapsed group box containing "Unit:" and "Volume Serial:"). At the bottom are four buttons: "< Back", "Next >", "Cancel", and "Help".

Figure 13-3 Specifying the Location for the Datahlq Dataset

11. Click **Next**. The **Host Specific Datasets** dialog box is displayed.

12. In the **Host Specific Datasets** dialog box, edit the APF LOADLIB and/or JES PROCLIB if you want to designate a different dataset high-level qualifier. In addition, specify the TCP/IPParms for the host. This will typically be SYS1.TCPPARMS(TCPDATA). Consult your z/OS administrator if in doubt.

Refer to Table 13-3 for descriptions of the host-specific datasets fields.

Table 13-3 Host-Specific Datasets Definitions

Field	Description
APF LOADLIB	The default is <i>codehlq.LOADLIB</i> . If you specify another value, that value must be an APF-authorized library. If you retain the default, you must APF-authorize <i>codehlq.LOADLIB</i> during postinstallation.
JES PROCLIB	The default is <i>datahlq.PROCLIB</i> . If you keep the default or if you specify a staging dataset that is not a JES PROCLIB, you must copy PROCs during postinstallation. If you specify a valid JES PROCLIB, be sure that your user ID has authority to write to the JES PROCLIB you specify.
TCP/IP Parms	This value was determined during preinstallation as part of the TCP/IP diagnostics. Refer to Chapter 3, <i>Testing the TCP/IP Configuration</i> . Obtain the value from the MVS administrator at your site who performed those diagnostics. This value is required. Note: The installation does not validate this value.

Figure 13-4 shows an example of the **Host Specific Datasets** dialog box.

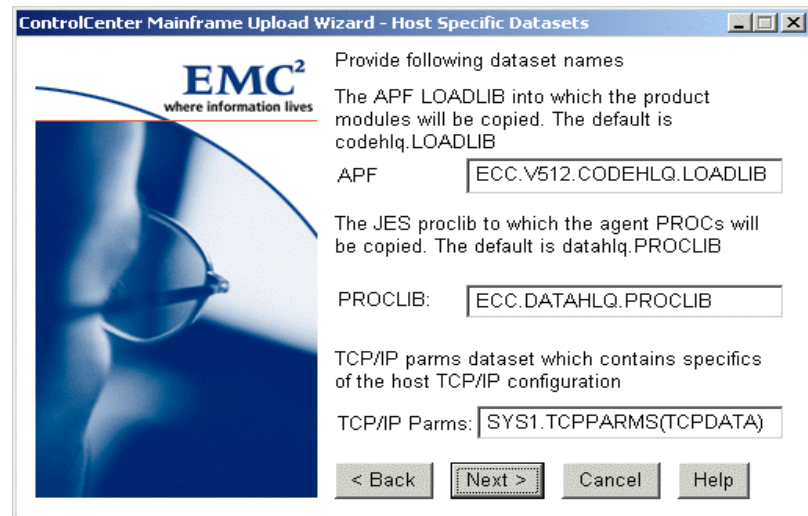


Figure 13-4 Specifying Host-Specific Information

13. Click **Next**. The **Infrastructure Details** dialog box is displayed.
14. In the **Infrastructure Details** dialog box, specify the following:
 - **Server Host**—the IP address or DNS-resolvable name of the ECC Server that can be pinged from the MVS host on which the Master Agent will run.
 - **Server Port**—consult the person who installed the ECC Server for this port number. Edit this value only if the default conflicts in your environment.
 - **Agent Port**—edit this value only if the default conflicts in your environment.

Figure 8-6 shows an example of an **Infrastructure Details** dialog box.

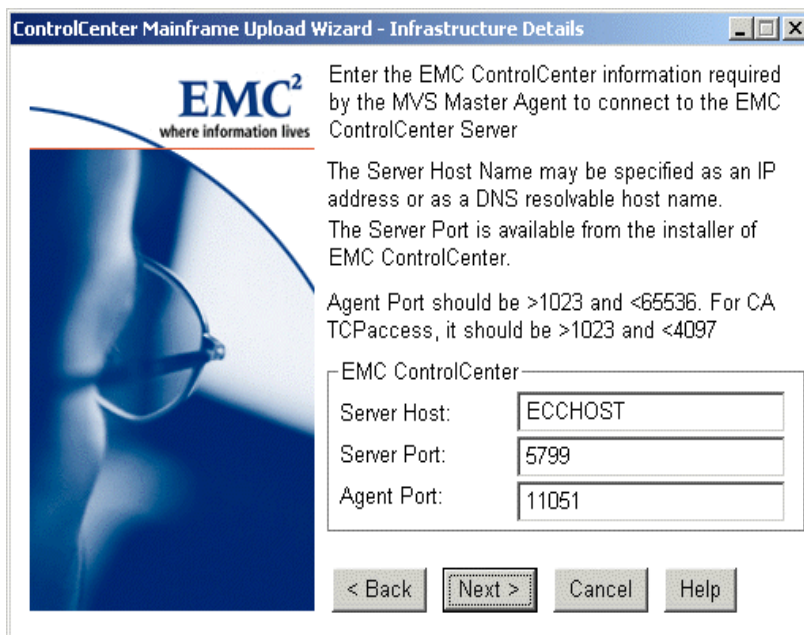


Figure 13-5 Specifying Infrastructure Details

15. Click **Next**. The **Specify Host Dataset and Trace Log** dialog box is displayed.

16. In the **Specify Host Dataset and Trace Log** dialog box, specify the following:

- **JCL dataset**—Contains the JCL that will extract the XMIT file on the target host.
- **XMIT dataset**—Contains the program files to be used on the MVS system.
- **ANSWER dataset**—Stores your installation values as collected by the wizard.
- **Trace log**—Edit the filename and location where it is stored, if necessary. The default is My Documents.

Figure 13-6 shows an example of a **Specify Host Dataset and Trace Log** dialog box.

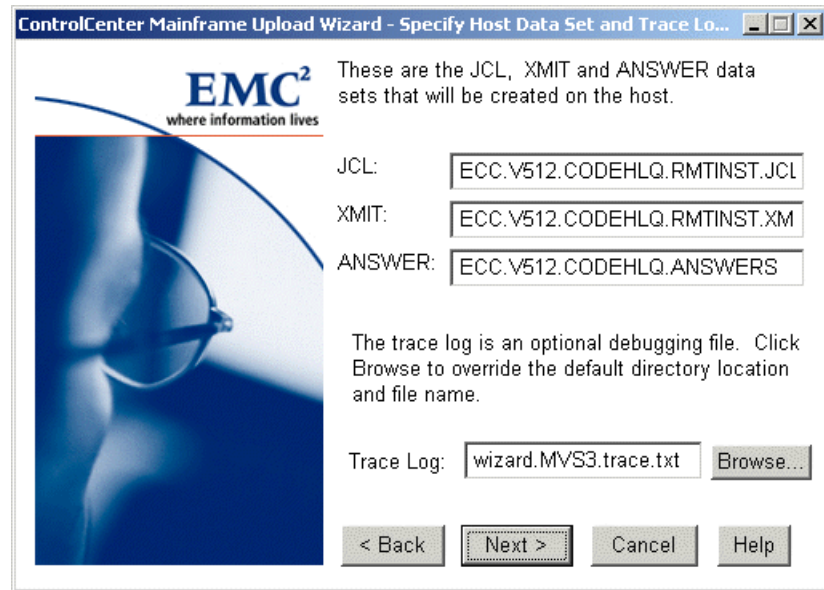


Figure 13-6 Verifying the Names of the Transferred Datasets

17. Click **Next**.
18. Verify that the entries you made are correct. Click **Upload**.
19. When the upload has completed, click **Finish**.

The **Upload Wizard - Final Instructions** dialog box provides instructions on the next set of steps to take.

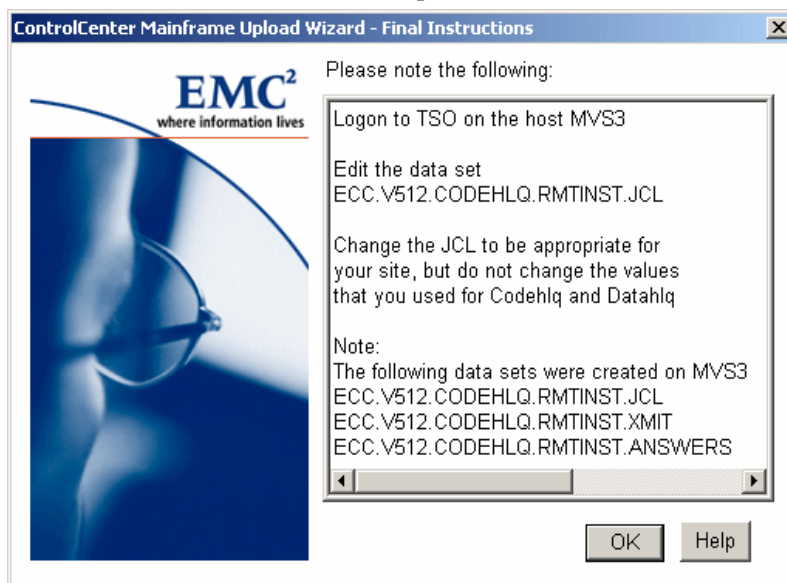


Figure 13-7 Final Notes for Installing the Master Agent

20. Click **OK**.
21. Log on to the target host you specified in the installation deployment wizard.
22. Find the JCL dataset called *codehlq.RMTINST.JCL*, where *codehlq* is the high-level qualifier you specified in the wizard.
23. For dataset *codehlq.RMTINST.JCL*, edit the JOB card, review the JCL, and submit the job.
24. Ensure the job completes successfully.
25. Check the presence of the 21 datasets at the high-level qualifier *codehlq*. The datasets are as follows (though not in this order):
 - *codehlq.ANSWERS*
 - *codehlq.DBRMLIB*
 - *codehlq.EXEC*
 - *codehlq.HAPMEX*
 - *codehlq.INSTALL*
 - *codehlq.ISPELIB*
 - *codehlq.ISPMLIB*

- `codehlq.ISPPLIB`
- `codehlq.ISPSLIB`
- `codehlq.JCL`
- `codehlq.LOADLIB`
- `codehlq.RMTINST.JCL`
- `codehlq.RMTINST.XMIT`
- `codehlq.ROBJ`
- `codehlq.SHIPAINI`
- `codehlq.SHIPCMD`
- `codehlq.SHIPINI`
- `codehlq.SHIPMSG`
- `codehlq.SSTINI`
- `codehlq.TEMPPDS`
- `codehlq.ZIPS`

26. If all your hosts share DASD with one another, then you are done with this procedure and will not need to repeat it. Continue to *Performing Postinstallation Steps for the Master Agent*.

If there are hosts that do not share DASD with the target host you specified in the wizard, repeat the tasks in this chapter *up to this point* and deploy installation files for the separate hosts. When you complete this task, continue to *Performing Postinstallation Steps for the Master Agent*.

Performing Postinstallation Steps for the Master Agent

The postinstallation steps for an upgrade are the same as those for an installation, with the exception of a few additional cleanup steps you perform after all other upgrade procedures.

For postinstallation instructions, refer to *Performing Final Steps before Starting Master Agent* on page 7-15.

After you complete postinstallation and startup of the Master Agent, continue with *Upgrading Agents on a Single Host* in the next section.

Upgrading Agents on a Single Host

To upgrade the agents on a single OS/390 or z/OS host:

1. In the tree panel, expand **Hosts**. Then right-click the host where you want to install, and select **Agents, Upgrade**. The upgrade wizard is displayed.
2. In the **Host Selection** dialog box, select the desired host. The status of the host must be Available for the upgrade to be allowed.

If the status is something other than Available, ensure the Master Agent is upgraded and started on the host.

Click **Next**.

3. In the **Agent Selection** dialog box, select the option for upgrading all the MVS agents.

Click **Next**.

4. Review the specifications as needed. Click **Finish**.
5. Select or create a task list for the operations, and then click **OK**.
6. Review the progress of the operations in the Properties view of the task list.
7. On completion, view the install log for dataset names and other information you will need during postinstallation. The log contains error information if applicable.

Assuming the upgrade is successful, note any postinstallation instructions that appear in the log. Also, record the name of the dataset that contains the agent started procedures you will need to copy (on the mainframe host).

After upgrade completes successfully, you must copy the agent PROCs to a JES PROCLIB on the MVS host. The PROCs are located in the dataset name that appears in the log.

Viewing the Install Log

To view the install log for the upgrade:

1. In the tree, click the host where you just upgraded the agents.
2. Click the **ECC Administration** button.
3. Select **Agents, View Install Logs**.
4. Select the desired log.
5. For a successful upgrade, scroll to the bottom for the staging PROCLIB dataset name where the PROCs are located.

On the MVS host, copy the PROCs to a JES PROCLIB. Refer to *Copying Agent PROCs to a JES PROCLIB* on page 9-10 for more information.

Starting the Agents

Start the agents by issuing the following commands from the MVS console:

```
F CSMAGENT, SHUTDOWN
S CSMAGENT
```

Upgrading the Master Agent on Other Sysplex Hosts

Then return to the ControlCenter Console to begin using the product.
To upgrade other hosts in the same Sysplex, go on to the next section.

Cloning the Master Agent uses the installation parameters from an upgraded Master Agent on a source host to upgrade the Master Agent on a target host.

The newly installed or upgraded Master Agent shares code libraries with the Master Agent from the source host. However, data libraries are unique to each host and require their own high-level qualifier. Some installation parameters may also be unique, such as the TCP/IP parameters dataset. The cloning process prompts you for any values unique to the host.

Note the following conditions for cloning:

- ◆ You cannot clone the first Master Agent upgrade in a Sysplex. The first upgrade must be done with the OS/390 Master Agent Upload Wizard.
- ◆ You can only clone the Master Agent to one host at a time. For other hosts, repeat the installation wizard as needed, specifying a unique target hostname and data library high-level qualifier (*datahlq*) for each upgrade installation.
- ◆ When you clone a Master Agent, the source and target hosts must be in the same Sysplex.

The clone process uses the Console installation wizard, but the wizard functions slightly differently for cloning as it does for other agents. For the clone, you select the source host from which you want to copy the Master Agent configuration. (By contrast, for normal agent installations, you select the target host where you want to install.)

Table 13-4 Specifying Source and Target Hosts for Cloning the Master Agent

Host	Description
Source host: Where Master Agent is currently running	Select the source host in the Host Selection dialog box of the installation wizard. Ensure the host has a status of Available, which means the Master Agent is installed and running.
Target host: Where Master Agent will be installed	Type the name of the target host in the Clone Master Agent Questions dialog box later in the wizard. Ensure that this host is in the same Sysplex.

To install the Master Agent using installation parameters from another host (cloning):

1. On the host whose Master Agent you want to clone, ensure the Master Agent is upgraded and running, and that the agents on the host have been upgraded.
2. In the tree, right-click **Hosts**, and then select **Arrange By, Type**. Right-click **MVS Hosts**, and then select **Agents, Install**. The agent installation wizard appears, with MVS hosts listed.

Use the **Agents, Install** option for both installations and upgrades by cloning. Do not use **Agents, Upgrade** (it should be grayed out).

3. In the **Host Selection** dialog box, select a source host whose status is Available. This is a host where you previously upgraded and started the Master Agent. Click **Next**.
4. In the **Agent Selection** dialog box, select **Clone Master Agent**, and then click **Next**.
5. In the **Questions** dialog box, specify the following:
 - The name of the target host where you want to upgrade the Master Agent.
 - The data high-level qualifier *datahlq* for ControlCenter datasets on the host. This must be unique in the Sysplex. Specify the same *datahlq* used for this target host in the previous release.
 - Other parameters as needed. Preferably, use the same allocation parameters as the prior release.

Click **Next**.

6. In the **Review Install Agent Task** dialog box, review the selections and specifications you made. Then click **Finish**. A dialog box is displayed.
7. Select or create a task list for the installation, and then click **OK**.
8. View the progress of the installation in a Properties view for the task list.
9. When the installation operation is complete, view the installation log.

For a successful installation, note any postinstallation instructions that appear in the log. Also, record the name of the dataset that contains the agent started procedures (PROCs) you will need to copy (by logging onto the host).

Perform the postinstallation instructions for the Master Agent (shown in *Performing Final Steps before Starting Master Agent* on page 7-15), and then return to the next section, *Upgrading Agents on Multiple Hosts*.

Repeat this procedure as needed for other hosts in the same Sysplex.

Upgrading Agents on Multiple Hosts

After you clone the Master Agent to one or more OS/390 or z/OS hosts and perform postinstallation, upgrade the agents on those hosts, using the following procedure.

1. In the tree panel, expand **Hosts**. Use **Shift-click** and **Ctrl-click** to select the OS/390 or z/OS hosts where you want to upgrade the agents.
2. If Database Agent for DB2 is part of your configuration, you must delete the *datahlq.MM2PROF* dataset.
3. Right-click any of the hosts you checked and select **Agents, Install**. Provide the necessary data to complete.
4. In the **Host Selection** dialog box, select all the hosts, and then click **Next**.
5. In the **Agent Selection** dialog box, select the option for upgrading all the MVS agents. Click **Next**.
6. Review the specifications as needed. Click **Finish**.
7. Select or create a task list for the operations, and then click **OK**.
8. Review the progress of the operations in the Properties view of the task list.
9. On completion, view the install logs for dataset names and other information you will need during postinstallation. The log contains error information if applicable.

For a successful upgrade, note any postinstallation instructions that appear in the log. Also, record the name of the dataset that contains the agent started procedures you will need to copy (on the mainframe host).

To view the install log for the upgrade:

1. In the tree, click the host where you just upgraded the agents.
2. Click the **ECC Administration** button.
3. Select **Agents, View Install Logs**.
4. Select the desired log.
5. For a successful upgrade, scroll to the bottom for the staging PROCLIB dataset name where the PROCs are located.

On the MVS host, copy the PROCs to a JES PROCLIB. Refer to *Copying Agent PROCs to a JES PROCLIB* on page 9-10 for more information.

If you do not copy the PROC, the agent will use the old PROCs, possibly resulting in JCL errors, PROCs starting and shutting down, and datasets not being found.

Starting the Agents

On a newly upgraded host, start the agents by issuing the following commands from the MVS console:

```
F CSMAGENT, SHUTDOWN  
S CSMAGENT
```

After you start the agents the first time using these commands, you will be able to stop and start them subsequently using the ControlCenter Console.

Return to the ControlCenter Console to begin using the product to manage the MVS host and its storage.

Postinstallation for Database Agent for DB2

Previously specified DB2 subsystems will be retained during the upgrade. However, you must run the BIND JCL for each of the subsystems.

To authorize and bind for the Database Agent for DB2:

1. Locate the JCL for the BIND job in *datahlq.JCL* on the host, where *datahlq* is the high-level qualifier of the datasets used to store ControlCenter data.
2. Run the JCL for all BIND jobs and ensure they complete successfully.
3. Start the agent, or restart it if it is already running.

Start the agent in the Console or use the following command:

```
F CSMAGENT,ENV S MM2AGENT
```

Or to restart:

```
F CSMAGENT,ENV R MM2AGENT
```

4. Verify agent startup on each image. Look for message MM2@100I.
5. Ensure the subsystems appear properly in the ControlCenter Console.

Performing Postinstallation Cleanup Steps for an Upgrade

This section describes considerations for postinstallation of the agents after an upgrade.

Perform these steps at your convenience any time after upgrade is complete. They are not required to run the agents, only to remove obsolete elements from your environment.

Removing Linklisted Datasets

The Master Agent on MVS no longer requires modules to be linklisted. Delete linklisted modules from the earlier release versions of these modules and perform a REFRESH LLA at your convenience. The modules to be deleted are:

- ◆ MMA\$DATA
- ◆ HAPV\$ADI
- ◆ HAPX\$ADI

Removing the HSM STEPLIB Specification

These are considerations related to DFSMSHsm.

If you specified the APF-authorized dataset name from last release in the HSM STEPLIB, then remove this specification and restart HSM at your convenience.

Removing HSM ARCINEXT Configuration

The steps you take depend on whether other programs use ARCINEXT in your environment.

ARCINEXT Used by Other Programs

If you assembled the HSM ARCINEXT exit for previous releases of ControlCenter, back up the affected files, remove any ControlCenter code from your ARCINEXT source, and reassemble the exit. This removes the ControlCenter ARCINEXT code, which is no longer required.

Perform this step at your convenience.

ARCINEXT Not Used

If you updated the HSM PARMLIB to enable the ARCINEXT user exit for a prior release of ControlCenter (or Resource Availability), perform this step. (Do not perform this step if another program is using ARCINEXT.)

Remove the command SETSYS EXITON(ARCINEXT) from the HSM member in the PARMLIB.

This step may be necessary on multiple images if each has a separate HSM PARMLIB member.

Restarting HSM

Restarting HSM is not necessary unless the command SETSYS EXITON(ARCINEXT) was removed from a prior release.

Issue the following commands to stop and then restart HSM:

P HSM
S HSM

Perform this on each image that has HSM installed.

Reverting to an Earlier Release

If necessary, use the following guidelines to revert (roll back) to a previous release.

- ◆ Restore *datahlq* datasets that you backed up at the beginning of this chapter, and restore the PROCs used for the earlier release.
- ◆ Restore the previous release's linklist modules, and perform a REFRESH LLA.
- ◆ For HSM's PARMLIB, add the DD statement to point back to the earlier release's APF-authorized library.
- ◆ Restore a backup of the ARCINEXT files needed, with ControlCenter code included.

Refer to the *EMC ControlCenter Installation and Configuration Guide* for a list of the PROCs provided with versions prior to ControlCenter 5.1. Refer to the *EMC ControlCenter Installation Guide Volume 2 (MVS Agents)* for ControlCenter 5.1 or 5.1.1 for a list of the PROCs.

Dataset Management for MVS Agents

This appendix provides MVS dataset names created by ControlCenter and the instructions for their management. The chapter is divided into the following sections:

- ◆ Datasets Created During Installation.....A-2
- ◆ Distribution and Installation DatasetsA-16

Datasets Created During Installation

As you prepare to install ControlCenter agents, consider the space and management requirements of the datasets described in this section. Table A-1 lists:

- ◆ Datasets that are created during installation.
- ◆ The space required for each dataset.
- ◆ How ControlCenter uses the dataset.
- ◆ A recommended approach for managing the dataset.

During the installation process, you will find the “Space Required” column useful in determining what volume(s) to specify for dataset allocations.

For information about the high-level qualifiers for these datasets, refer to *Naming Conventions for Dataset Prefixes* on page 1-12.



CAUTION

Do not edit the contents of *codehlq* datasets. Manual editing of *datahlq* datasets is discouraged. If you want to edit a dataset manually, contact EMC Customer Support for alternatives or assistance.

Table A-1 Datasets Created at Installation

Dataset Name (DDNAME)	Space Required	Used For	How to Manage
Datasets used for product load modules, JCL, initialization files, and interface resource files			
<i>apfdsn</i>	76 cylinders 250 directory blocks when blocked at 15,476	This space is only required when the <i>apfdsn</i> variable is specified during the installation process. Note that <i>apfdsn</i> should only be specified if <i>codehlq</i> .LOADLIB cannot be APF-authorized, and <i>apfdsn</i> is an existing APF-authorized dataset having the required space.	User-defined. If specified during installation, this must be a preexisting dataset.
<i>codehlq</i> .DBRMLIB (DBRMLIB)	3 tracks	DB2 utility files for the MM2BIND job.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>codehlq</i> .CNTL (ECCENVAR)	2 tracks	ControlCenter MVS control data used by the MMNSERVER job.	Backup: 2 incrementals. Migration: Normal days for migration.

Table A-1 Datasets Created at Installation (continued)

Dataset Name (DDNAME)	Space Required	Used For	How to Manage
<i>codehlq.EXEC</i> (SYSEXEC)	14 cylinders	REXX execs used by the Host Agent for MVS HSM and other agents.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.HAPMEX</i> (SYSPROC)	4 tracks	Event handling execs for the Host Agent for MVS HSM. This is where REXX execs written as autofixes are stored.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.ASM</i>	2 tracks	Assembly source for ARCINEXT.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>codehlq.DTRLIB</i>	2 cylinders	Sample source and SYSIN for catalog management.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.ISPCLIB</i>	5 cylinders	REXX execs used by the Host Agent for MVS HSM and catalog management.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.ISPMLIB</i>	3 cylinders	ISPF panel messages. Used by the Host Agent for MVS HSM and catalog management.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>codehlq.ISPPLIB</i>	11 cylinders	ISPF panels. Used by the Host Agent for MVS HSM and catalog management.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>codehlq.ISPSLIB</i>	5 tracks	ISPF skeleton JCL. Used by the Host Agent for MVS HSM and catalog management.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>codehlq.JCL</i>	4 tracks	Pattern JCL used for creating site-specific installation JCL. Actual site-specific JCL is stored in <i>datahlq.JCL</i> .	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>codehlq.LOADLIB</i>	81 cylinders	ControlCenter library for executable code. Used by all agents. Must be APF-authorized on each image.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.ROBJ</i>	5 cylinders	REXX object code. Used by the Host Agent for MVS HSM.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.

Table A-1 Datasets Created at Installation (continued)

Dataset Name (DDNAME)	Space Required	Used For	How to Manage
<i>codehlq.SHIP2INI</i>	2 tracks	ControlCenter MVS initialization dataset primed with Database Agent for DB2 default values. Used to initialize <i>datahlq.MM2PROF</i> .	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.SHIPAINI</i>	2 tracks	ControlCenter MVS initialization dataset primed with MVS Master Agent default values. Used to initialize <i>datahlq.MMAINI</i> .	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.SHIPCMD</i>	2 tracks	ControlCenter MVS scheduled command dataset primed with ControlCenter MVS header record. Used to initialize <i>datahlq.COMMAND</i> .	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.SHIPINI</i>	2 tracks	ControlCenter MVS initialization dataset primed with ControlCenter MVS default values. Used to initialize <i>datahlq.HAPINI</i> .	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.SHIPMSG</i>	2 tracks	ControlCenter MVS message passing datasets primed with ControlCenter MVS header record. Used to initialize <i>datahlq.PRIMSG</i> .	Backup: 2 incrementals. Migration: Normal days for migration.
<i>codehlq.SSTINI</i>	2 tracks	Template used during installation to create <i>datahlq.SSTINI</i> .	
<i>codehlq.ZIPS</i>	2 cylinders	Graphical user interface resource file. Used by each Console and by the ECC Server and Store.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
Datasets containing agent initialization parameters, work data, and the data that describes your storage environment			
<i>datahlq.CSMENV</i> (CSMENV)	1 track	ControlCenter MVS environment parameters. Used by all agents.	Backup: Exclude from HSM backup. Migration: No deletion. Will never migrate if ControlCenter MVS agents are used.
<i>datahlq.HAPCOM</i> (HAPCOMDS)	4 cylinders	Communications dataset for passing data between HSM address spaces and any ControlCenter MVS ISPF session.	Backup: Exclude from HSM backup. Migration: No deletion. Will never migrate if ControlCenter MVS agents are used.

Table A-1 Datasets Created at Installation (continued)

Dataset Name (DDNAME)	Space Required	Used For	How to Manage
<i>datahlq</i> .HAPINI (HAPINIDS)	2 tracks	Host Agent for MVS HSM initialization parameters.	Backup: Exclude from HSM backup. Migration: No deletion. Will never migrate if ControlCenter is used consistently.
<i>datahlq</i> .MM2PROF (MM2CUSTM)	2 tracks	Database Agent for DB2 initialization parameters.	Backup: Exclude from HSM backup. Migration: No deletion. Will never migrate if ControlCenter MVS agents are used.
<i>datahlq</i> .MMAINI (MMAINI)	2 tracks	MVS Master Agent initialization parameters.	Backup: Exclude from HSM backup. Migration: No deletion. Will never migrate if ControlCenter MVS agents are used.
<i>datahlq</i> .PERSIST (MMxALERT)	5 cylinders	VSAM file storing persistent data. Used by all agents.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>datahlq</i> .MSG (MSG)	1 track	Dataset used for temporary storage of cross-complex messages if the multicomplex feature is activated in the Host Agent for MVS HSM.	Backup: None required. Migration: Normal days for migration.
<i>datahlq</i> .COMMAND	15 tracks	Schedule command dataset for the Host Agent for MVS HSM.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>datahlq</i> .INSTJCL	1-5 tracks, depending on number of systems	ControlCenter MVS installation jobs, panels, and control information. A modified copy of <i>codehlq.install</i>	Backup: 2 incrementals. Migration: Normal days for migration.
<i>datahlq</i> .JCL	4 tracks	Installation JCL created including site-specific information.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>datahlq</i> .PRIMSG	2 tracks	Message passing datasets for the Host Agent for MVS HSM.	Backup: 2 incrementals. Migration: Normal days for migration.

Table A-1 Datasets Created at Installation (continued)

Dataset Name (DDNAME)	Space Required	Used For	How to Manage
<i>datahlq.PROCLIB</i>	4 tracks	Optional staging PROCLIB created by the installation if no user-specified dataset name is provided. Contains agent PROCs to be copied to a JES PROCLIB.	Backup: 1 or 2 incrementals. Migration: No deletion. Normal days for migration.
<i>datahlq.RUNLOG</i>	15 tracks	Work dataset used by LIA daily automation job. Used by Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.SCANS</i>	15 tracks	Control information for catalog scanning.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>datahlq.SPCLUST</i>	cylinders = (the sum of user IDs, high-level qualifiers, and job names) divided by 45 Certain inactive entries are deleted after 29 days. Other entries are deleted after 370 days.	VSAM file used for storing information about cumulative and owned disk space. Used by Logical Agent for MVS.	Backup: 2 incrementals. Migration: Normal days for migration.
<i>datahlq.SSTINI</i> (ECCINI)	2 tracks	Initialization parameters for communication between MVS Master Agent and the ECC Server and Store. Also, name and version numbers of MVS agents.	Backup: Exclude from HSM backup. Migration: No deletion. Will never migrate if ControlCenter MVS agents are used.
<i>prefix.rav.install</i>	1-5 tracks, depending on number of systems	ControlCenter MVS installation jobs, panels, and control information.	Backup: 2 incrementals. Migration: Normal days for migration.

Datasets Created by Agent Processing

ControlCenter agents for MVS create certain datasets as required during processing. Prepare space allocations and management practices according to the descriptions in this section.

Multiple instances of certain datasets are possible. These typically have variables such as a time stamp (*hhmmss* or *sssss*), a system ID, or a sequential number as part of their dataset names.

Table A-2 lists:

- ◆ Names of datasets created for message logs or other agent functions.
- ◆ The space required for each dataset.
- ◆ How ControlCenter uses the dataset.
- ◆ A recommended approach for managing the dataset.

Table A-2 Datasets Created by Agent Processing

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXP.D.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.CID</i>	1 track	Retain server certificate ID/ Master Agent.	No backup or migration required.
<i>datahlq.CER</i>	1 track	Retain server certificate data/ Master Agent.	No backup or migration required.
<i>datahlq.CSLSCAN.CTLCARD.Tsssss</i>	As required TRK(15,15)	DSS, FDR, or VSAM assist control cards created by CSL Scan. Logical Agent for MVS.	Backup: none required. Migration: None required. Work files: deleted by transaction.
<i>datahlq.CSLSCAN.MMLSCNG.Msssss</i>	As required TRK(15,15)	Catalog Solution Scan report in grid format. Logical Agent for MVS.	Backup: none required. Migration: None required. Work files: deleted by transaction.
<i>datahlq.CSLSCAN.MMLSCNV.Msssss</i>	As required TRK(15,15)	Catalog Solution Scan report. Logical Agent for MVS.	Backup: none required. Migration: None required. Work files: deleted by transaction.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq</i> .BKUPEXP.D.REPORT	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq</i> .CSLSCAN.MMLXLOE.Msssss	As required TRK(15,15)	Open Edition Explore work file. Logical Agent for MVS.	Backup: none required. Migration: None required. Work files: deleted by transaction.
<i>datahlq</i> .CSLSCAN.Snnnnnnn.SCNODS	As required TRK(15,15)	Catalog Solution Scan report, when the user does not provide a report DSN. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq</i> .CSLSCAN.TSOCMDS.Tsssss	As required TRK(15,15)	TSO commands created by CSL Scan function. Logical Agent for MVS.	Backup: None required. Migration: None required. Work files: deleted by transaction.
<i>datahlq</i> .CSLSCAN.UTLDUMP.Tsssss	As required TRK(15,15)	DSS, FDR, or VSAM Assist backup created by CSL Scan function. Logical Agent for MVS.	Backup: None required. Migration: None required. Work files: deleted by transaction.
<i>datahlq</i> .DB2Subsys. DETECT.CANCEL	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq</i> .DB2Subsys. MONITOR.CANCEL	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq</i> .DB2Subsys. MONITOR.FORMAT	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq</i> .DB2Subsys. MONITOR.INPUT	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq</i> .DB2Subsys. MONITOR.OUTPUT	5 cylinders	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq</i> .DB2Subsys. PROFILE	3 tracks	Initialization parameters used at startup of the Database Agent for DB2.	Backup: Incremental. Migration: Do not delete. Deletion will result in delays when the agent starts.
<i>datahlq</i> .DB2Subsys. REPORT.CANCEL	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXP.D.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.DB2Subsys. REPORT.FORMAT</i>	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq.DB2Subsys. REPORT.INPUT</i>	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq.DB2Subsys. REPORT.INPUT1</i>	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq.DB2Subsys. REPORT.OUTPUT</i>	5 cylinders	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq.DB2Subsys. REPORT.OUTPUT1</i>	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq.DB2Subsys. UTILITY.CANCEL</i>	3 tracks	Work dataset. Database Agent for DB2.	No backup or migration required.
<i>datahlq.DEFRAG.Vvolser</i>	1 track	Dataset created when a volume needs to be defragmented. When the DEFRAG is completed, the dataset is deleted. Host Agent for MVS SMS.	No backup or migration required.
<i>datahlq.HAPLOG.Dyyyyddd</i>	As required	Message log the Host Agent for MVS HSM creates by combining all host logs for a given day. The size of this dataset is the total of all the host logs for a given day. Host Agent for MVS HSM.	Backup: No backup required. Migration: No deletion. Normal days for migration.
<i>datahlq.HAPLOG.Hrr.Dyyyyddd.Thhmmss</i>	As required	Message log created by an HSM host. The size will depend on how much data is placed into the dataset. The primary and secondary allocation size is 75,75 tracks. Host Agent for MVS HSM.	Backup: No backup required. Migration: No deletion. Normal days for migration.
<i>datahlq.HAPLOGSD</i>	As required TRK(300,750)	HSM activity log single-day extract. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: Normal days for migration.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXPD.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.HAPLOGTR</i>	As required TRK(300,750)	HSM activity trend analysis dataset. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq.HAPRRPT.GnnnnV00</i>	1 track	The report created from each run of the automation job. Host Agent for MVS HSM.	Backup: No backup required. Migration: Migrate and/or delete after the number of days that you would want to keep automation reports.
<i>datahlq.HAPSTAT.Dyyyyymm</i>	As required	Historical statistics log that contains HSM and DASD space statistics for a single month. A new log is created for each month. Host Agent for MVS HSM.	Backup: No backup required. Migration: No deletion. Normal days for migration.
<i>datahlq.JRN.sysid\$\$\$\$.Dyyyyddd.Thhmmss</i>	As required TRK(150,150)	HSM Journal dataset records. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq.MIGHIST.REPORT</i>	15 tracks	ML1 / ML2 Space Usage report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MIGRDSN.REPORT</i>	15 tracks	Migrated Dataset report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MIGRECDS.REPORT</i>	15 tracks	Migration / Recall Activity report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MLGROWTH.HISTORY</i>	750 tracks	HSM ML1 / ML2 space usage history. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMHBUF.Dyyyyddd.Tsssss</i>	As required TRK(300,750)	HSM report buffer file. Host Agent for MVS HSM.	Backup: none required Migration: none required. Work file - deleted by transaction.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXPD.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMHOUTDD</i>	15 cylinders	ML1 / ML2 Space Usage extract file. Host Agent for MVS HSM.	Backup: none required Migration: none required. Work file - deleted by transaction.
<i>datahlq.MMHZCDSX</i>	15 cylinders	HSM Control dataset (CDS) extract. Host Agent for MVS HSM.	Backup: none. Migration: Normal days for migration.
<i>datahlq.MMLD.Dddy.Thh.mm.ss</i> Note: Each dataset stores 344 bytes per record. This equals 162 records per track or 2,430 records per cylinder. Issue the command: DCOLLECT VOLUMES (*) NOVOLUMEINFO MIGD to determine the number of records. Divide that number by 162 for the primary space allocation in tracks.	As required based on your site's needs	Contains daily space usage detail information; one file is created each day and used as the input for the Logical Agent for MVS DASD Space Activity report.	Backup: none required. Migration: Normal days for migration.
<i>datahlq.MMLDCOL.WORK</i>	As required TRK(15,15)	DCOLLECT extract of current SMS configuration. Used by Logical Agent for MVS.	Backup: none required. Migration: Normal days for migration.
<i>datahlq.MMLRPT.CSLDUMP</i>	As required TRK(15,15)	Summary / index of user catalogs and VVDSs backed up by the Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq.MMLRPT.DIAGNOSE.Rnnnnnnn</i>	5 tracks as required	Catalog Diagnose report. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq.MMLRPT.Dnnnnnnn</i>	As required TRK(15,15)	Detail report of CSL backup of a specific user catalog or VVDS. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq.MMLRPT.Ennnnnnn</i>	As required TRK(15,15)	Detail report datasets with excessive extents under a specific high-level qualifier. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal days for migration.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXP.D.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.EXAMINE</i>	As required CYL(5,5)	Summary of CSL EXAMINE processing against user catalogs. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal migration days.
<i>datahlq.MMLRPT.EXT</i>	As required CYL(5,5)	Summary / index of scans for datasets with excessive extents. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal migration days.
<i>datahlq.MMLRPT.PDS DIR</i>	5 tracks	List of datasets with excessive extents. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal migration days.
<i>datahlq.MMLRPT.Snnnnnnn</i>	As required TRK(15,15)	Detail report of CSL SYSTEMCHECK of a specific user catalog. Logical Agent for MVS.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq.MMLRPT.SWEEPAS</i>	15 tracks	Alias space report. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.SWEEPGD</i>	15 tracks	GDGs defined incorrectly report. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.SWEEPRG</i>	15 tracks	VSAM CA Splits reports. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.SWEEPTS</i>	15 tracks	Terasam candidate report. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.SWEEPVE</i>	15 tracks	Orphaned catalog entries report. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.SYSCHECK</i>	5 cylinders	Summary / index of SYSTEMCHECK processing against user catalogs. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXP.D.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.VCE</i>	5 cylinders	Summary / index of DIAGNOSE processing against user catalogs. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.Vnnnnnnn</i>	As required TRK(15,15)	Orphan Catalog Entries report. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLRPT.Xnnnnnnn</i>	As required TRK(15,15)	Detail report of CSL EXAMINE of a specific user catalog. Logical Agent for MVS.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMLVAS.Dyyyyddd.Ssssss</i>	One track as required	VSAM Assist parameter file. Logical Agent for MVS.	Backup: None required Migration: None required. Work file: deleted by transaction.
<i>datahlq.MMLVASD.Dyyyyddd.Ssssss</i>	As required where each allocation is based on the size of the VSAM dataset	VSAM Assist Dump file used for reorganization of dataset. Logical Agent for MVS.	Backup: None required Migration: None required. Work file: deleted by transaction.
<i>datahlq.MMLVQI.Dyyyyddd.Ssssss</i>	One track as required	VSAM Quick Index permanent file. Logical Agent for MVS.	Backup: None required Migration: None required. Work file: deleted by transaction.
<i>datahlq.host\$\$\$\$.MMP.WLA.REVOLVE</i>	5 cylinders	Records revolving data for Workload Analyzer. Physical Agent for MVS.	Not applicable.
<i>datahlq.host\$\$\$\$.MMP.WLA.SENDNOW</i>	5 cylinders	Records daily and analyst data for Workload Analyzer. Physical Agent for MVS.	Not applicable
<i>datahlq.MMSDCOL</i>	50 tracks	DCOLLECT output dataset. Host Agent for MVS SMS.	Backup: None required Migration: Normal days for migration.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXP.D.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.MMSDCOL.WORK</i>	50 tracks	DCOLLECT output dataset. Host Agent for MVS SMS.	Backup: None required. Migration: Normal days for migration.
<i>datahlq.MVTDISP</i>	As required	Work dataset created to contain HSM migration volume information. Used during MVS hourly space checks and statistical reports. Created by the Host Agent for MVS HSM and used by the Host Agent for MVS SMS.	Backup: None required. Migration: Normal days for migration.
<i>datahlq.PCDATA</i>	As required TRK(300,300)	HSM Activity graphing data. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: Normal days for migration.
<i>datahlq.SCHEDULE.sysid\$\$\$\$.SCHED1</i>	5 tracks	Schedule dataset created by the scheduling manager. Framework.	Backup: None required. Migration: no deletion. Will never migrate if agent is up.
<i>datahlq.SCHEDULE.sysid\$\$\$\$.SCHED2</i>	5 tracks	Schedule dataset created by the scheduling manager. Framework.	Backup: None required. Migration: no deletion. Will never migrate if agent is up.
<i>datahlq.WHO.Dyyyyddd.Tsssss.Ssysid</i>	150 tracks as required	DASD activity report: logging of DASD dataset allocations. Logical Agent for MVS.	Backup: None required. Migration: Normal days for migration. Never deleted by agent. Delete when sufficiently old.
<i>datahlq.WHO.REPORT.Dyyyyddd.Tsssss.Ssysid</i>	As required	DASD activity report - detail file. Logical Agent for MVS.	Backup: None required. Migration: Normal days for migration.
<i>datahlq.MMAZFDSX</i>	15 cylinders	HSM journal record extract. Host Agent for MVS HSM.	Backup: None required. Migration: Normal days for migration.
<i>datahlq.TABLE.sysid\$\$\$\$.TABLE1</i>	1 track	Allocated dynamically by CSMAGENT address space.	Backup: None required. Migration: Do not delete.

Table A-2 Datasets Created by Agent Processing (continued)

Dataset Name (DDNAME)	Space Required	Purpose/Created By	How to Manage
<i>datahlq.BKUPEXP.D.REPORT</i>	15 tracks	Dataset backup report. Host Agent for MVS HSM.	Backup: 1 incremental. Migration: No deletion. Normal days for migration.
<i>datahlq.TABLE.sysid\$\$\$\$.TABLE2</i>	1 track	Allocated dynamically by CSMAGENT address space.	Backup: None required. Migration: Do not delete.
<i>emcdhlq.Uunit.Dyyyyddd.Thhmmss</i>	As required	Agent dump of a specified unit address.	Backup: None required. Migration: None required. Tape dataset.
<i>emcdhlq.Vvolser.Dyyyyddd.Thhmmss</i>	As required	Agent dump of a specified volume serial.	Backup: None required. Migration: None required. Tape dataset.
<i>datahlq.TAPE.Dyyyyddd.Tsssss.Ssysid</i>	15 tracks as required	Logging of tape allocations. Physical Agent for MVS.	Backup: None required. Migration: Normal days for migration.

Distribution and Installation Datasets

EMC ControlCenter agents for MVS are distributed on the product CD-ROM and deployed to MVS systems using `Mmainst.exe` from the ECC Server or CD-ROM.

The key files distributed on the product CD-ROM are named as follows for an ECC Server installed on a Windows system:

```
c:\ecc\media_rep\remoteinstall\MMA510\MMA510.jcl
c:\ecc\media_rep\remoteinstall\MMA510\MMA510.xmit
c:\ecc\media_rep\remoteinstall\MMA510\Mmainst.exe
c:\ecc\media_rep\remoteinstall\MMA510\Mmainst.chm
```

You deploy the JCL and XMIT files to an MVS system using `Mmainst.exe`. Then you edit and submit the JCL dataset to extract the installation datasets from the XMIT file to disk. This procedure is described in *Installing Master Agents on MVS Hosts* on page 7-1. There are 21 distribution datasets for MVS installation. The names of the files are shown in Table A-3.

Table A-3 **Installation Data Sets**

Dataset	Contains
ANSWERS	List of all the entries the user makes when installing the Master Agent using the Wizard
DBRMLIB	DB2 utilities
EXEC	REXX execs
HAPMEX	Basic message handler routines
INSTALL	Datasets required for product installation and maintenance
ISPCLIB	DFSMS ACS source editing library
ISPMLIB	ISPF message library
ISPPLIB	ISPF panel library
ISPSLIB	ISPF skeleton library
JCL	Installation and maintenance information
LOADLIB	Product executables
RMTINST.JCL	JCL that will extract the XMIT file on the MVS host to which the files are transferred by FTP during installation

Table A-3 Installation Data Sets (continued)

Dataset	Contains
RMTINST . XMIT	Installation program files to be used on an MVS system
ROBJ	REXX object modules
SHIPAINI	Primer data for the <i>datahlq.MMAINI</i> dataset
SHIPCMD	Primer data for the <i>datahlq.CMD</i> dataset
SHIPINI	Primer information for the <i>datahlq.HAPINI</i> dataset
SHIPMSG	Primer data for the <i>datahlq.MSG</i> dataset
SSTINI	Data for communicating with the ECC Server and Store
TEMPPDS	Temporary file used by RMTINST.JCL during extraction of the install datasets
ZIPS	User interface resource files

Maintaining Agents for MVS

This appendix discusses configuration and security issues after ControlCenter agents for MVS agents have been installed.

- ◆ Starting and Stopping Agents for MVS B-2
- ◆ Changing Agent Configuration B-7
- ◆ Changing Master Agent Network Parameters B-9
- ◆ Uninstalling Agents for MVS B-10
- ◆ Configuring User Security for MVS Functions..... B-13

Starting and Stopping Agents for MVS

Use the procedures in this section to start and stop agents for MVS. You can start and stop agents across multiple hosts from the ControlCenter Console. You can also start and stop agents on a host using MVS operator commands.

The startup of agents on MVS has no effect on the proxy Storage Agent for Symmetrix or Solutions Enabler for z/OS. Refer to Chapter 4, *Monitoring MVS Attached Symmetrix Arrays* for information about the proxy agent configuration.

Starting an Agent from the ControlCenter Console

Before starting an agent through the ControlCenter Console, verify that your agent does not have agent-specific start requirements. This information is included in the agent-specific administration topics found in the Console Online Help.

The Master Agent must be running on the MVS host before you can start agents through the Console. Refer to *Using MVS Console Commands* on page B-4 for syntax.

To start agents in the Console, refer to Table B-1.

Table B-1

Starting Agents in the ControlCenter Console

Task	Procedure
Start all agents on a host	In the Console tree panel, right-click the desired host, and then select Agents, Start . Then complete the wizard.
Start agents on multiple hosts	In the Console tree panel, right-click Hosts , and then select Agents, Start . In the wizard that opens, check the hosts where you want to stop the agents, and complete the wizard.

To verify the agent start status, expand the **Hosts** folder in the tree; then expand the host. Expand **System Information, ECC Agents** and then right-click and select **Properties**. The Properties-Agents information appears in the target panel, and if the status indicates Active, the agent is running.

Stopping an Agent From the ControlCenter Console

To stop agents in the Console, refer to Table B-2.

Table B-2 **Stopping Agents in the ControlCenter Console**

Task	Procedure
Stop all agents on a host	In the Console tree panel, right-click the desired host, and then select Agents, Stop . Then complete the wizard.
Stop agents on multiple hosts	In the Console tree panel, right-click Hosts , and then select Agents, Stop . In the wizard that opens, check the hosts where you want to stop the agents, and complete the wizard.

An **Immediate** shutdown cancels an agent's address space, potentially leaving current work items unfinished. Unfinished items may or may not be reselected for processing when the agents restart. For instance, if a transaction is gathering data to send to the Console when you cancel an agent's address space, that transaction will not restart when you restart the agent's address space.

To verify the agent stop status, expand the **Hosts** folder in the tree; then expand the host. Expand **System Information, ECC Agents** and then right-click and select **Properties**. The Properties-Agents information appears in the target panel, and if the status indicates Not Active, the agent is not running.

Restarting the Master Agent

You can restart the Master Agent from the ControlCenter Console. (You cannot start the Master Agent if it is not already running. That must be performed from the MVS console.)

Restarting the Master Agent in the ControlCenter Console does the following:

- ◆ Recycles MMNSERV
- ◆ Reinitializes the agents
- ◆ Initiates discovery policies

Neither the CSMAGENT address space or agent address spaces restart. This differs greatly from F CSMAGENT, SHUTDOWN, which causes all agent address spaces to restart.

To restart the Master Agent from the ControlCenter Console, right-click the desired host and select **Agents, Restart Master Agent**.

Using MVS Console Commands

Rather than using the Console, you can use MVS commands on individual hosts. Precede MVS commands with the command character appropriate for your systems.

Table B-3 Starting and Stopping Agents Using MVS Commands

Task	Command
Start Master Agent and all agents	S CSMAGENT
Stop Master Agent and all agents (normal shutdown)	F CSMAGENT, SHUTDOWN
Stop Master Agent and all agents, including CSM\$DATA address space	F CSMAGENT, SHUTDOWN EOD
Start an individual agent (Master Agent must be started)	F CSMAGENT, ENV S <i>agentname</i> where <i>agentname</i> is the name of the agent you want to start.
Stop an individual agent (Master Agent must be started)	F CSMAGENT, ENV P <i>agentname</i> where <i>agentname</i> is the name of the agent you want to stop.
Restart (stop and immediately start) an individual agent (Master Agent must be started)	F CSMAGENT, ENV R <i>agentname</i> where <i>agentname</i> is the name of the agent you want to restart.
Refresh the contents of the Master Agent initialization in memory without restarting the Master Agent	F CSMAGENT, INI R

Agent names are listed in Table B-4.

Table B-4 Agent Names

Subagent Name	ControlCenter Agents for MVS
MM2AGENT	Database Agent for DB2
MM3AGENT	Console Framework Agent (part of the Master Agent)
MMHAGENT	Host Agent for MVS HSM
MMLAGENT	Logical Agent for MVS

Table B-4 Agent Names (continued)

Subagent Name	ControlCenter Agents for MVS
MMNSERVER	NetServer ^a (part of the Master Agent)
MMPAGENT	Physical Agent for MVS
MMSAGENT	Host Agent for MVS SMS

a. The NetServer component of the Master Agent handles communications between MVS agents and the ECC Server, which in turn communicates with the graphical user interface, the Console.

Making MVS Agent Jobnames Unique

For MVS agents, all started tasks appear under the same jobname, CSMSLAVE. Though MVS can support multiple jobs with the same name, some sites have tools or procedures that require unique jobnames for all jobs (or at least, for ECC jobs). Also, many users find it confusing to view the same jobname for all agents.

Before you begin, back up all agent PROCs, including Master Agent PROCs. Also, back up *datahlq.CSMENV*.

This procedure assumes you are renaming the jobs to the PROC names as created by the MVS agent installation. Renaming the jobnames and PROCs to completely new names is not discussed, though it is possible. Seek additional development support before attempting such a procedure.

You can configure agents to have unique names either during post installation (just before you copy the PROCs to a JES PROCLIB) or after the entire installation process is complete (after you have the agents installed and working using the jobnames out of the box.)

To make MVS agent jobnames unique, follow these steps:

1. If the agents are running, stop them using:

F CSMAGENT, SHUTDOWN

(an MVS operator command).

2. Edit *datahlq.CSMENV*.

3. Search for the value \$ENV. For example, following is an entry in *datahlq.CSMENV* for the Storage Agent for IBM ESS before any modifications:

```
$ENV MMCAGENT
  MIN=1
  PROC=CSMSLAVE
  ANAME=MMCAGENT
  JCL=SUBAGENT=MMCAGENT
  GRACE=240
  ABLIMIT=1
```

4. Change the value of the PROC= variable from CSMSLAVE to an existing PROC name, specifically, the value beside \$ENV. Also, delete everything after JCL=.

```
$ENV MMCAGENT <-- Do not change this value, but use it
  MIN=1 in place of CSMSLAVE below
  PROC=MMCAGENT <-- Change CSMSLAVE jobname to a new
  jobname, MMCAGENT
  ANAME=MMCAGENT
  JCL= <-- Edit out the subagent symbol to avoid abends
  GRACE=240
  ABLIMIT=1
```

5. Repeat for other \$ENV entries in *datahlq.CSMENV*.
6. Assign the renamed PROC names to appropriate RACF security groups or user IDs.
7. Start CSMAGENT with the command:

```
S CSMAGENT
```

Changing Agent Configuration

After you install an agent with a given configuration, you can change the configuration as described in this section.

The method you need to use depends on the agent and parameter you need to change.

- ◆ You can perform many configuration changes in the Console.
- ◆ Some configuration changes cannot be performed in the Console. Typically, they require that you either (1) uninstall and reinstall the agent, or (2) edit the agent PROC in the existing installation.

For the immediate postinstallation troubleshooting phase, the easiest way to change many configurations is to stop the agent, uninstall it, and reinstall it.

For installations in place with considerable setup already performed (such as many DB2 databases defined), you will not want to uninstall and reinstall. Contact EMC Customer Support for assistance in editing the agent PROC to change the necessary configuration values.

Refer to Table B-5 for more information.

Table B-5 Agent Configuration Change Procedures

Agent	Change Needed	Make Change in	Further Information
<i>Logical Agent for MVS</i>	Change the DFSMSdss load library	Console	Right-click the agent and select Setup, Basic Setup
	Add Catalog Solution postinstallation	Console	Right-click the agent and select Setup, Basic Setup
<i>Host Agent for MVS HSM</i>	Change HSM control data sets	Console	Basic Setup
	Change TSO users notified with HSM messages	Console	Basic Setup

Table B-5 Agent Configuration Change Procedures (continued)

Agent	Change Needed	Make Change in	Further Information
<i>Host Agent for MVS SMS</i>	Change the NaviQuest CLIST specification	Console	• Uninstall the agent and reinstall it. Ensure that the new PROCs are copied to the JES PROCLIB you use, or • Contact Customer Support for information on updating the agent PROC for the current installation
	Change the ISPF CLIST specification	Console	• Uninstall the agent and reinstall it. Ensure that the new PROCs are copied to the JES PROCLIB you use, or • Contact Customer Support for information on updating the agent PROC for the current installation
<i>Database Agent for DB2</i>	Change the configuration of DB2 subsystems specified at installation or after installation	Console	Delete the subsystem object. Add it again using new specifications. This will count the same subsystem once more against the agent's 99 subsystem limit for the host.

Changing Master Agent Network Parameters

During or after installation, you may need to change the configuration of network parameters for MVS agents to correct errors or omissions or to reflect changes to your environment.

Change the Setup Parameters for Network Parameters

After ControlCenter is installed, you can change installation and network parameters using the Console:

- ◆ Master Agent port number
- ◆ ECC Server and port number

Changing the TCP Parameters Data Set Name

If you change the name of the TCP parameters data set in use by a host, ControlCenter agents on the host will no longer be able to run unless you make configuration changes.

You can change the TCP parameters data set specification by manually editing all agent PROCs, with the assistance of EMC Customer Support.

Uninstalling Agents for MVS

To uninstall an agent, use the Console and follow the guidelines described in this section. You can uninstall one or more agents at a time.

After you complete the uninstall procedure, you can reinstall agents through the Console, or you can continue uninstalling agents and remove the product entirely from the host using the follow-up procedures later in this section.

Uninstalling Agents for MVS Through the Console

To uninstall a ControlCenter agent:

1. Launch and log in to the Console.
2. Right-click **Hosts** in the tree panel of the Console and select **Agents, Uninstall**.

The Agent Administration Wizard launches.

3. The **Platform Type Selection** page presents you with a complete list of all platform types available for agent installation in the Host tree folder. Select a platform type.
4. Click **Next** to proceed to the **Host Selection** page.
5. Click the checkmark at the top of the host information table to select all hosts, or click the checkbox next to each host you want to select. You can also click the **Eraser** icon to clear all selected hosts.
6. Click **Next**.

A list of all agents available for uninstallation on the previously selected host(s) is displayed.
7. Click the checkmark at the top of the agent information table to select all agents, or click the checkbox next to each agent you want to select. You can also click the **Eraser** icon to clear all selected agents.
8. Click **Finish**.

When the process completes successfully, you can continue with either of the following actions:

- ◆ Reinstall the agent on the host. Ensure that you copy the new PROCs to the JES PROCLIB, removing or overwriting the old agent PROCs. If you do not remove or overwrite the old PROCs, the newly installed agent will use the old PROCs at startup. Go to the next section.
- ◆ Remove the product entirely from the host. First, uninstall all agents on the host. Next, refer to *Removing ControlCenter Completely from a System* on page B-11 for further instructions.

Reinstalling an Agent

After you complete the uninstall procedure, you can reinstall the agent through the Console if desired. When you reinstall the agent, you will have to redo some agent postinstallation steps, agent setup steps, and possibly data collection policy configuration. Use the same procedures for installing an agent you used initially. Refer to *Installing Agents on MVS Hosts* on page 9-1 for instructions.

Removing ControlCenter Completely from a System

Before you begin the measures in this section, uninstall all the agents on a host using the procedure in the previous section.

If you want to remove ControlCenter completely from an MVS host, you will need to manually undo any system changes you completed during the original agent postinstallation. ControlCenter is not able to remove its entries from system data sets. Required and optional steps are listed in this section.



CAUTION

Removing ControlCenter code (*codehlq*) data sets can affect multiple hosts, as can making any configuration changes required for ControlCenter. Do not remove *codehlq* data sets or make common configuration changes unless no MVS hosts are using them any longer. Also, removing ControlCenter data (*datahlq*) data sets will delete historical information gathered by ControlCenter agents and stored on the MVS host. You will not be able to recover this data without a backup.

-
- ◆ Uninstall all the agents in the Console.
 - ◆ To remove ControlCenter code, delete *codehlq* data sets.

- ◆ To remove ControlCenter data, back up and delete *datahlq* data sets.
- ◆ Delete the ControlCenter PROCs from the JES PROCLIB. This step is optional. The PROCs are listed in *Performing Final Steps before Starting Master Agent* on page 7-15, and *Copying Agent PROCs to a JES PROCLIB* on page 9-10.
- ◆ Delete entries in the TSO Command and Programs table and perform a PARMLIB update at the earliest convenience. This step is optional. The PROCs are listed in *Performing Final Steps before Starting Master Agent* on page 7-15.

Configuring User Security for MVS Functions

In this section, you grant users SAF access to Physical Agent for MVS functions and catalog functions. Also, you map ControlCenter user IDs to SAF user IDs that agents should pass to MVS when executing commands through MVS agents.

Updating the MVS Users of ControlCenter

Many installations enforce a standard of assigning random (or at least different) user IDs to the same individual across different systems. ControlCenter simplifies the authentication process for such installations by creating a user ID mapping table. After a user is authenticated, the user ID mapping table translates that individual's requests through ControlCenter to his or her local TSO user ID.

This procedure requires you to specify the following operator command:

F CSMAGENT,INI R

To add user ID mapping entries:

1. Start a TSO session and log on to the host where the Master Agent is installed.
2. Start ISPF.
3. Using option 6 in ISPF, specify **EX codehlq.INSTALL(SETUP)** and press **ENTER**.
4. In the **Primary Menu** panel, type **1** and press **ENTER**. The Map Console IDs to TSO IDs panel appears (Figure B-1).

```

Installation of ControlCenter Agents for MVS - Map Console IDs Row 1 to 1 of 1
Command ===                               Scroll ==> CSR

    Name: MVS1                               Current Process: Product Configuration

To Add or Update entries, key in data then press Enter
    RACF ID  Console User ID

Action RACF ID  Console User ID          Valid Action:  D to delete an entry
      TSO001    ECCADMIN

***** Bottom of data *****
  
```

Figure B-1 Map Console IDs to TSO IDs

5. In the respective columns, add a RACF ID and its corresponding ControlCenter Console username, and then press **ENTER**.

NOTE: For MVS users of ControlCenter, you must ensure that the first eight characters of each ControlCenter Console username are unique.

6. Repeat step 5 for the rest of the Console usernames.
7. Press **PF3** to return to the Primary Menu panel.
8. Issue the MVS console command **F CSMAGENT, INI R** on the host system.

This command instructs the Master Agent to read the updated RACF ID(s) into the ControlCenter username mapping table.

Authorizing Access to Physical Storage

Users of the Physical Agent for MVS require update authority to this facility class:

```
CSVDYLPA .ADD .MMPTJFRQ
```

By default in Topsecret and ACF2, this facility class does not have update permission enabled. If you attempt to use Physical Agent for MVS without this authorization, you will see U1099 abend messages.

Authorizing TSO Job Submit Authority for Users

Users of ControlCenter MVS agents require TSO job submit authority to perform tasks such as submitting daily cleanup jobs. Without this authority, the Master Agent for MVS will refuse to run the job. This issue is more common with ACF2 users than with RACF users.

Controlling Access to Catalog Functions

The ControlCenter catalog management functions are entirely nondestructive in nature in this release. You can control access to catalog information using the System Authorization Facility (SAF). When you use the SAF, you can activate catalog and data set security verification.

You can restrict personnel or groups of personnel from using specific commands or, when applicable, commands coupled with specific keywords. These catalog security measures are optional.

Users of the full Catalog Solution product should refer to the *Catalog Solution Installation Guide* and *Catalog Solution User Guide* for information about security and functionality for catalog functions not supported in ControlCenter.

The System Authorization Facility (SAF)

ControlCenter provides an interface with the System Authorization Facility (SAF). With a set of resource names, you can create profiles to regulate access to catalog commands. Each resource name also includes a node indicating an access method of READ for all available commands in the current release. Future releases may include resource names with UPDATE nodes.

Listed on the following pages are the resource names and step-by-step instructions for enabling the facility class and adding appropriate profiles in the IBM RACF environment.

ControlCenter employs the RACROUTE macro, which, in turn, invokes the SAF router. Security verification is performed using RACF facility classes (introduced as part of RACF Version 1.7). Non-RACF systems must be capable of processing the profiles of class type FACILITY. To create profiles for non-RACF systems, consult the vendor's documentation related to the maintenance of FACILITY CLASS profiles.

The following examples use RACF commands as entered in a TSO environment. You can make equivalent specifications through ISPF if you desire.

Table B-6 lists the READ names that the program employs as resources.

Table B-6 READ Resource Names and Commands and Keywords

READ Resource Names	Related Command / Keyword
SOFTWARE.CSL.READ.ALIASCHK	ALIASCHECK
SOFTWARE.CSL.READ.CATLIST	CATLIST
SOFTWARE.CSL.READ.DIAGNOSE.CSR	DIAGNOSE/TEST=CSR or DIAGNOSE/TEST=CHECK-SPANNED-RECS
SOFTWARE.CSL.READ.DIAGNOSE.CVB	DIAGNOSE/TEST=CVB or DIAGNOSE/TEST=CHECK-VVDS-BACKUP
SOFTWARE.CSL.READ.DIAGNOSE.CVC	DIAGNOSE/TEST=CVC or DIAGNOSE/TEST=CHECK-VVDS-CATALOGS
SOFTWARE.CSL.READ.DIAGNOSE.DS	DIAGNOSE/TEST=DS or DIAGNOSE/TEST=DATA-STRUCTURE
SOFTWARE.CSL.READ.DIAGNOSE.GADB	DIAGNOSE/TEST=GADB or DIAGNOSE/TEST=GENERATE-AMS-DIAG-BCS

Table B-6 READ Resource Names and Commands and Keywords (continued)

READ Resource Names	Related Command / Keyword
SOFTWARE.CSL.READ.DIAGNOSE.GADV	DIAGNOSE/TEST=GADV or DIAGNOSE/TEST=GENERATE-AMS-DIAG-VVDS
SOFTWARE.CSL.READ.DIAGNOSE.GDC	DIAGNOSE/TEST=GDC or DIAGNOSE/TEST=GENERATE-DELETE-CARD
SOFTWARE.CSL.READ.DIAGNOSE.GDIAG3C	DIAGNOSE/TEST=GDIAG3C or DIAGNOSE/TEST=GENERATE-DIAG3-CARD
SOFTWARE.CSL.READ.DIAGNOSE.GDLN	DIAGNOSE/TEST=GDLN or DIAGNOSE/TEST=GENERATE-DELETE-NONVSAM
SOFTWARE.CSL.READ.DIAGNOSE.GDN	DIAGNOSE/TEST=GDN or DIAGNOSE/TEST=GENERATE-DEFINE-NONVSAM
SOFTWARE.CSL.READ.DIAGNOSE.GRC	DIAGNOSE/TEST=GRC or DIAGNOSE/TEST=GENERATE-RECATALOG-CARD
SOFTWARE.CSL.READ.DIAGNOSE.GUL	DIAGNOSE/TEST=GUL or DIAGNOSE/TEST=GENERATE-UNCAT-LIST
SOFTWARE.CSL.READ.DIAGNOSE.GVC	DIAGNOSE/TEST=GVC or DIAGNOSE/TEST=GENERATE-VERIFY-CARD
SOFTWARE.CSL.READ.DIAGNOSE.IS	DIAGNOSE/TEST=IS or DIAGNOSE/TEST=INDEX-STRUCTURE
SOFTWARE.CSL.READ.DIAGNOSE.LA	DIAGNOSE/TEST=LA or DIAGNOSE/TEST=LIST-ASSOCIATIONS
SOFTWARE.CSL.READ.DIAGNOSE.MVC	DIAGNOSE/TEST=MVC or DIAGNOSE/TEST=MAP-VSAM-CAT
SOFTWARE.CSL.READ.DIAGNOSE.VCE	DIAGNOSE/TEST=VCE or DIAGNOSE/TEST=VERIFY-CATALOG-ENTRIES
SOFTWARE.CSL.READ.DIAGNOSE.VV	DIAGNOSE/TEST=VV or DIAGNOSE/TEST=VTOC-VVDS
SOFTWARE.CSL.READ.DIAGNOSE.VVC	DIAGNOSE/TEST=VVC or DIAGNOSE/TEST=VVCM-VVCN-CHECK
SOFTWARE.CSL.READ.DISPLAY	DISPLAY
SOFTWARE.CSL.READ.DUMP	DUMP

Table B-6 READ Resource Names and Commands and Keywords (continued)

READ Resource Names	Related Command / Keyword
SOFTWARE.CSL.READ.LIST	LIST
SOFTWARE.CSL.READ.OELIST	OELIST
SOFTWARE.CSL.READ.PRINT	PRINT
SOFTWARE.CSL.READ.QUERY	QUERY
SOFTWARE.CSL.READ.SCAN	SCAN
SOFTWARE.CSL.READ.SMFLIST	SMFLIST
SOFTWARE.CSL.READ.SYSCHECK	SYSTEMCHECK

Differentiating Security Access for Different Users

Consider adding resource names as facility class profiles. You can define resource names with less detail than the full resource name, `SOFTWARE.CSL.**`. You can create different levels of authorization for different users. For example, you might decide to permit all of your system programmers to access `SOFTWARE.CSL.**` but only a selected few individuals to access `SOFTWARE.CSL.READ.SYSCHECK`.

The following sections show RACF commands `RDEFINE`, `PERMIT`, and `SETROPTS` to illustrate the use of generic profiles.

Verifying Security at Data Set OPEN

Optionally, you can set up security verification for VSAM data sets and BCS processing, for all users or selected users.

To configure data set security, add a facility class profile with the resource name `SOFTWARE.CSL.GLOBAL.DATASET`. At data set OPEN time, ControlCenter verifies security for all users not granted READ access to a facility class resource.

To allow a user to bypass data set security verification, grant that user READ authorization for the named facility class resource.

RACF Examples

The remainder of this section lists examples.

To allow all users to execute the ControlCenter commands related to the READ resource names, enter the following:

```
RDEFINE FACILITY (SOFTWARE.CSL.READ.** ) UACC(READ)
```

To set up security verification for OPEN processing for VSAM data sets and catalogs (ICF and VSAM), you can enter the following:

```
RDEFINE FACILITY (SOFTWARE.CSL.GLOBAL.DATASET) UACC(NONE)
```

To grant user ID STGADM01 direct access to data sets without verification, enter the following:

```
PERMIT SOFTWARE.CSL.GLOBAL.DATASET CLASS(FACILITY)  +  
      ID(STGADM01) ACCESS(READ)
```

If RACLIST processing is active for the FACILITY class, you must REFRESH the RACLIST so that modifications can be processed. RACLIST processing is a facility provided by RACF to minimize the impact of security verification on performance.

The RACLIST facility copies generic and discrete profiles from the RACF database into storage. Performance is enhanced by eliminating DASD I/O at verification time. RACLIST processing requires that in-storage information must be refreshed if the profiles are modified.

If the facility class has RACLIST processing active at your site, enter the following command on all systems updated by RDEFINE and PERMIT commands:

```
SETROPTS RACLIST (FACILITY) REFRESH
```

Installation and Configuration Parameters

This appendix provides installation and configuration parameters required to run EMC ControlCenter MVS agents on OS/390 and z/OS systems. The appendix is divided into the following sections:

- ◆ Determining Configuration Parameters C-2
- ◆ OS/390 Master Agent Upload Wizard Parameters..... C-3
- ◆ Clone Master Agent Worksheet C-6
- ◆ Physical Agent for MVS Parameters C-8
- ◆ Host Agent for MVS HSM Parameters C-9
- ◆ Host Agent for MVS SMS Parameters C-11
- ◆ Logical Agent for MVS Parameters C-12
- ◆ Database Agent for DB2 Parameters C-13
- ◆ Mapping ControlCenter Console IDs to MVS RACF IDs C-15

Determining Configuration Parameters

Before you install EMC ControlCenter on MVS, complete the installation parameters worksheets, consisting of the tables in this appendix. The tables include general parameters necessary for the entire product, as well as parameters for individual agents for MVS. Each agent has its own table. Parameter descriptions follow each table.

OS/390 Master Agent Upload Wizard Parameters

The OS/390 Master Agent Upload wizard uses the specifications described here. Some parameters depend on the SMS configuration.

Understanding Host Specifications in the Master Agent Installation

In the wizard, you specify both the host to which you will **FTP** the installation files and the host on which you will perform the actual installation job.

For a complete description of the necessary parameters, refer to *Identifying Hostnames for Master Agent Installation* on page 2-3.

Completing Upgrade Parameters Worksheet

Complete the parameters worksheet with the information about the **FTP** host and target installation host, as well as high-level qualifiers needed during installation.

Table C-1 Configuration Parameters: OS/390 Master Agent Wizard

Parameter	Your value	Description
Hostname and port number of target MVS system		
Host Name		Enter the DNS name or IP address of the host to which you want to transfer the installation files by FTP . This value is required.
Port Number		Enter the FTP port number of the MVS host. This value is required.
JES Node		Enter the JES node for the host where you intend to run the installation JCL and start the Master Agent. This may be the same or different as the FTP host, as long as they share the same JES spool. This value is required.
User ID and password for the target MVS system		
User Id		Enter a valid user ID and password for the Host Name to which you will FTP the files. For example, you can use your TSO user ID.
Password		

Table C-1 Configuration Parameters: OS/390 Master Agent Wizard (continued)

Parameter	Your value	Description
Code high-level qualifier and optional allocation criteria for the installation datasets		
Codehlq		Enter a high-level qualifier under which you are authorized to create datasets. This is where the Master Agent and all MVS agent code libraries will be installed. The high-level qualifier is <i>codehlq</i> as described in <i>Naming Conventions for Dataset Prefixes</i> on page 1-12.
Storage Class		SMS allocation parameters are optional. If specified, they must be a valid SMS STORCLAS, DATACLAS, and MGMTCLAS as defined on your system. If you have SMS ACS rules set up, these can default to the site values.
Data Class		
Management Class		
Unit		Non-SMS allocation parameters are required if you want the datasets to reside on a non-SMS managed volume. Specify the unit name and volume serial of the device type where the datasets will reside.
Volume Serial		
Data high-level qualifier and optional allocation criteria for the installation datasets		
Datahlq		Enter a high-level qualifier under which you are authorized to create datasets. This is where the Master Agent and all MVS agent data libraries will reside. The high-level qualifier is <i>codehlq</i> as described in <i>Naming Conventions for Dataset Prefixes</i> on page 1-12.
Storage Class		SMS allocation parameters are optional. If specified, they must be a valid SMS STORCLAS, DATACLAS, and MGMTCLAS as defined on your system. If you have SMS ACS rules set up, these can default to the site values.
Data Class		
Management Class		
Unit		Non-SMS allocation parameters are required if you want the datasets to reside on a non-SMS managed volume. Specify the unit name and volume serial of the device type where the datasets will reside.
Volume Serial		
Host Specific Datasets Definitions		
APF Load Library		The default is <i>codehlq.LOADLIB</i> . If you specify another value, that value must be an APF-authorized library. If you retain the default, you must APF-authorize <i>codehlq.LOADLIB</i> during postinstallation.

Table C-1 Configuration Parameters: OS/390 Master Agent Wizard (continued)

Parameter	Your value	Description
Proclib		The default is <i>datahlq.PROCLIB</i> . If you keep the default or if you specify a staging dataset that is not a JES PROCLIB, you must copy PROCs during postinstallation. If you specify a valid JES PROCLIB, be sure that your user ID has authority to write to the JES PROCLIB you specify.
TCP/IPParms		The TCP/IP parameters dataset. This value was determined during preinstallation as part of the TCP/IP diagnostics. Obtain the value from the MVS administrator at your site who performed those diagnostics. This value is required.
Infrastructure Details		
Server Host		Enter the DNS resolvable name or the IP address of the ECC Server. Consult the person who installed ECC Server for this information.
Server Port		Enter the server port.
Agent Port		Enter the agent port number. For IBM Communications Server, you can retain the default of 11051. For Computer Associates TCPaccess, you must enter a value greater than 1023 and less than 4097.
Dataset Names and Trace Log Name for File Deployment		
JCL		Do not enter these values prior to installation. Rather, when you run the wizard, record the dataset names that appear on the screen at this stage of the wizard. You will use these values later when you run the installation JCL on the intended Master Agent host.
XMIT		
ANSWER		
Trace Log		Enter a pathname and file name for the trace log debugging file. If you want to change where the file is written (the default is My Documents), browse to your desired directory and edit the file name as needed.

Clone Master Agent Worksheet

Enter the parameters for Master Agents to be cloned from an already-installed Master Agent.

Table C-2 Clone Master Agent Worksheet

Clone Master Agent Parameters			
Host Name whose Master Agent you want to clone (can be any MVS host running the Master Agent)			
Sysplex of these hosts ^a			
Parameter	Your Value: Host #1	Your Value: Host #2	Your Value: Host #3
Host (LPAR) Name ^b			
Data High-level Qualifier ^c			
Optional Data High-Level Qualifier Attributes			
Data Class			
Management Class			
Storage Class			
Unit			
Volume Serial			
Installation Libraries			
JES PROCLIB ^d			
TCP/IP Parms ^e			
EMC ControlCenter Parameter			
Agent Port ^f			
Parameter	Your Value: Host #4	Your Value: Host #5	Your Value: Host #6
Host (LPAR) Name ^b			
Data High-level Qualifier ^c			
Optional Data High-Level Qualifier Attributes			
Data Class			

Table C-2 Clone Master Agent Worksheet (continued)

Clone Master Agent Parameters			
Management Class			
Storage Class			
Unit			
Volume Serial			
Installation Libraries			
JES PROCLIB ^d			
TCP/IP Parms ^e			
EMC ControlCenter parameter			
Agent Port ^f			

- a. All hosts in this table must be in the same Sysplex.
- b. Enter the name of the OS/390 or z/OS host on which you want to install a Master Agent.
- c. Enter a data high-level qualifier that is unique for each host. For upgrades, enter the same *datahlq* used in the previous release.
- d. If desired, enter a staging dataset or a JES PROCLIB. The default is *datahlq.PROCLIB*.
- e. Enter the TCP parameters dataset name, available from the administrator who performed the TCP/IP diagnostics in Chapter 3, *Testing the TCP/IP Configuration*. This value is required.
- f. Enter the port number for the agent. For IBM Communications Server, you can use the default of 11051. For CA TCPaccess, you must enter a value greater than 1023 and less than 4097.

Physical Agent for MVS Parameters

Enter the Physical Agent for MVS parameters in Table C-3.

Table C-3 Configuration Parameters Worksheet: Physical Agent for MVS

Physical Agent for MVS Parameters	Your Value
DASD Space Checking Interval in Minutes	
When initializing DASD volumes, check the offline status on	

DASD Space Checking Interval in Minutes

The number of minutes the Physical Agent for MVS waits between collecting the space occupancy of attached DASD volumes.

Physical Agent for MVS stores the volume information on the MVS host. When the data collection policy for the Physical Agent for MVS runs, the agent transfers the volume information to the EMC ControlCenter Repository. Specify a value between the minimum of 15 minutes and the maximum of 120 minutes.

Specify this parameter in conjunction with the data collection policy (DCP) for Physical Agent for MVS. The DCP determines how often the volume information is updated in the EMC ControlCenter Repository. For example, if you set this interval to once per hour and the data collection policy runs once every 15 minutes, the volume information is only updated in the Repository once per hour.

When initializing DASD volumes, check the offline status on.

In the Physical Agent, you can initialize volumes. This value determines which systems the agent will check to see if a DASD device is offline before it is initialized.

Possible values:

- ◆ All systems - Check all systems in the Sysplex. If a system does not respond (not running ECC) the device will be considered online to that system and will not be initialized for any system.
- ◆ Those running EMC ControlCenter only - Send the transaction to systems running the Master Agent. Select this option only if you are sure that EMC ControlCenter is installed on all the systems that share DASD.

Host Agent for MVS HSM Parameters

Enter the Host Agent for MVS HSM parameters in Table C-4.

Table C-4 Configuration Parameters Worksheet: Host Agent for MVS HSM

Host Agent for MVS HSM Parameters	Your Value
Backup Control Dataset(s) (BCDS DSNAME)	
Migration Control Dataset(s) (MCDS DSNAME)	
Offline Control Dataset(s) (OCDS DSNAME)	
TSO Notify User IDs	
Run Cleanup Job At	
Report Week Starts On	

BCDS DSNAME

Enter the fully qualified dataset name (without quotes) of the HSM BCDS dataset. Since it is possible to define up to four BCDS datasets to HSM, you can type up to four names here. You must type each dataset on its own line. Leave blank any BCDS name field that is not needed. If you do not use HSM, this field is optional.

MCDS DSNAME

Enter the fully qualified dataset name (without quotes) of the HSM MCDS dataset. Since it is possible to define up to four MCDS datasets to HSM, you can type up to four names here. You must type each dataset on its own line. Leave blank any MCDS name field that is not needed. If you do not use HSM, this field is optional.

OCDS DSNAME

Enter the fully qualified dataset name (without quotes) of the HSM OCDS dataset. Since it is possible to define up to four OCDS datasets to HSM, you can type up to four names here. You must type each dataset on its own line. Leave blank any OCDS name field that is not needed. If you do not use HSM, this field is optional.

TSO Notify User IDs

Enter TSO user IDs that will be used to send messages to for critical HSM errors. If you are not going to use the HSM Agent, this field is optional.

Run Cleanup Job At (hhmm)

Specify the time at which you want the agent to consolidate log datasets. Use format *hhmm* with no punctuation. This value is 24-hour time. For example, 0005 stands for 12:05 a.m.

Report Week Starts On

Select a day of the week from the list. This controls how weekly consolidation takes place for HSM reports.

Host Agent for MVS SMS Parameters

Enter the Host Agent for MVS SMS parameters in Table C-5.

Table C-5 Configuration Parameters Worksheet: Host Agent for MVS SMS

Host Agent for MVS SMS	Your Value
ISPF target CLIST library	
NaviQuest target CLIST library	
Enable Hourly Space Checks	
Userid(s) to notify of space shortages	

ISPF target CLIST library

Enter the CLIST library name where ISPF is installed.

NaviQuest target CLIST library

Enter the CLIST library name where NaviQuest is installed.

Enable Hourly Space Checks

The Host Agent for MVS SMS periodically scans direct access storage device (DASD) volumes to check the amount of free disk space on the specified volume. Select the checkbox if you want this scanning to occur. By default, the Host Agent for MVS SMS will scan the current system. It will issue notice to user IDs above a threshold level of 80 percent. To set your own threshold level or to specify a different host to be checked, perform the postinstallation setup in the Console later.

Userid(s) to notify of space shortages

Enter the IDs for users you want the system to notify when disk space thresholds have been reached.

Logical Agent for MVS Parameters

Enter the Logical Agent for MVS parameters in Table C-6.

Table C-6 Configuration Parameters Worksheet: Logical Agent for MVS

Logical Agent for MVS Parameters	Your Value
Load Library where DFSMSdss resides	
Load Library where Catalog Solution resides (You can leave this field blank.)	

DFSMSdss Load Library

Enter the dataset that contains load module ADRDSSU (for example, SYS1.LINKLIB).

Load Library Where Catalog Solution Resides

If you have Catalog Solution, specify the load library name to allow EMC ControlCenter to use its catalog management features through the Console.

If you do not have Catalog Solution, leave this field blank. Catalog Solution is not required to use the agent.

Refer to *Specifying a Catalog Solution Load Library* on page 2-6 for details about agent functions available with and without Catalog Solution installed.

Database Agent for DB2 Parameters

Specify the parameters for each DB2 subsystem. Copy this table for as many subsystems as you need to describe. The table contains default program and plan names. If your program and plan names are different from these common values, then write your values in the blanks instead. For *x*, replace with the DB2 version (5 or 6).

Table C-7 Configuration Parameters Worksheet: Database Agent for DB2

Host: _____	Your Value	
Subsystem Name		
DB2 Load module library		
Utility load library		
	Program	Plan
SQL Command Processing	DSNTIAD or _____	DSNTIAvr or _____
Table Unload Utility	DSNTIAUL or _____	DSNTIBvr or _____
DB2 Batch Utility	DSNUTILB or _____	Not applicable

Host: _____	Your values	
Subsystem Name		
DB2 Load module library		
Utility load library		
	Program	Plan
SQL Command Processing	DSNTIAD or _____	DSNTIAvr or _____
Table Unload Utility	DSNTIAUL or _____	DSNTIBvr or _____
DB2 Batch Utility	DSNUTILB or _____	Not applicable

Subsystem Name

Enter the name of the DB2 subsystem to be monitored by the Database Agent for DB2. It is the four-character MVS subsystem name for DB2, for example DB2P.

DB2 Load Module Library

Enter the name of the DB2 executable library.

Utility Load Library

Enter the name of the DB2 utilities load library. The usual format is *subsystemname.RUNLIB.LOAD*

SQL Command Processing

Enter the program and DB2 plan name used to execute non-SELECT SQL statements in batch. See defaults in the table. Replace *vr* with the DB2 version (5 or 6) and release.

Table Unload Utility

Enter the name of the program used to unload tables. See defaults in the table. Replace *vr* with the DB2 version (5 or 6) and release.

DB2 Batch Utility

Enter the name of the DB2 batch utility program. See the table for the default.

Mapping ControlCenter Console IDs to MVS RACF IDs

You can use either of two methods to ensure that EMC ControlCenter users have the RACF authorizations they need to perform functions through MVS transactions.

- ◆ Use existing RACF IDs as the EMC ControlCenter Console IDs. No additional configuration is needed.
- ◆ Create EMC ControlCenter IDs, and then map these IDs to existing RACF IDs in the ISPF installation setup program.

This section presumes you are using the second method.

When you create user IDs for users of the EMC ControlCenter Console, record those user IDs in Table C-8, *Mapping between ControlCenter and RACF User IDs*. In the ISPF installation setup program, specify the Console IDs along with corresponding RACF IDs. When a Console user attempts an MVS function requiring RACF security, EMC ControlCenter will pass the associated RACF ID for that user to the system. All existing RACF security measures apply to the user.

Use Table C-8 to record the values you will specify in the installation setup panel. See the procedure for specifying these values in the MVS installation chapter earlier in this guide.

Table C-8 Mapping between ControlCenter and RACF User IDs

EMC ControlCenter Console User ID <i>Example: sajones</i>	RACF User ID <i>Example: TSOSAJ</i>
The first eight characters of each Console User ID must be unique.	

Table C-8 Mapping between ControlCenter and RACF User IDs (continued)

[illegible]

Upgrade Parameters for MVS Agents

This appendix provides installation and configuration parameters required to run ControlCenter MVS agents on OS/390 and z/OS systems. Before you upgrade EMC ControlCenter on MVS, complete the upgrade parameters worksheets, consisting of the tables in this appendix, which include general parameters necessary for the Master Agent. Parameter descriptions follow each table.

This appendix has the following sections:

- ◆ OS/390 Master Agent Upload Wizard Parameters.....D-2
- ◆ Clone Master Agent WorksheetD-5

OS/390 Master Agent Upload Wizard Parameters

The OS/390 Master Agent Upload wizard uses the specifications described here.

Understanding Host Specifications During Master Agent Upgrade

In the wizard, you specify both the host to which you will FTP the installation files and the host on which you will perform the actual installation job.

For a complete description of the necessary parameters, refer to *Identifying Hostnames for Master Agent Installation* on page 2-3.

Completing Upgrade Parameters Worksheet

Complete the parameters worksheet with the information about the FTP host and target installation host, as well as high-level qualifiers needed during installation.

Table D-1 Configuration Parameters: OS/390 Master Agent Wizard

Parameter	Your value	Description
Host name and port number of target MVS system		
Host Name		Enter the DNS name or IP address of the host to which you want to transfer the installation files by FTP. This value is required.
Port Number		Enter the FTP port number of the MVS host. This value is required.
JES Node		Enter the JES node for the host where you intend to run the installation JCL and start the Master Agent. This may be the same or different as the FTP host, as long as they share the same JES spool. This value is required.
Install type	UPGRADE	Select Upgrade to ensure your data and configurations from prior releases is retained and used.
User ID and password for the target MVS system		
User Id		Enter a valid user ID and password for the Hostname to which you will FTP the files. For example, you can use your TSO user ID.
Password		

Table D-1 Configuration Parameters: OS/390 Master Agent Wizard (continued)

Parameter	Your value	Description
Code high-level qualifier and optional allocation criteria for the installation datasets		
Codehlq		Enter a high-level qualifier under which you are authorized to create datasets. This is where the Master Agent and all MVS agent code libraries will be installed. The high-level qualifier is <i>codehlq</i> as described in <i>Naming Conventions for Dataset Prefixes</i> on page 1-12. It must be unique to this release. You will use this codehlq for other Master Agent installations in the same Sysplex, assuming you want them to share code libraries.
Storage Class		SMS allocation parameters are optional. If specified, they must be a valid SMS STORCLAS, DATACLAS, and MGMTCLAS as defined on your system. If you have SMS ACS rules set up, these can default to the site values.
Data Class		
Management Class		
Unit		Non-SMS allocation parameters are required if you want the datasets to reside on a non-SMS managed volume. Specify the unit name and volume serial of the device type where the datasets will reside.
Volume Serial		
Data high-level qualifier and optional allocation criteria for the installation datasets		
Datahlq		Enter the same high-level qualifier used for Master Agent and MVS agent data libraries on this host in the previous release. The high-level qualifier is <i>datahlq</i> as described in <i>Naming Conventions for Dataset Prefixes</i> on page 1-12.
Storage Class		SMS allocation parameters are optional. If specified, they must be a valid SMS STORCLAS, DATACLAS, and MGMTCLAS as defined on your system. If you have SMS ACS rules set up, these can default to the site values.
Data Class		
Management Class		
Unit		Non-SMS allocation parameters are required if you want the datasets to reside on a non-SMS managed volume. Specify the unit name and volume serial of the device type where the datasets will reside.
Volume Serial		
Host Specific Datasets Definitions		
APF Load Library		The default is <i>codehlq.LOADLIB</i> . If you specify another value, that value must be an APF-authorized library. If you retain the default, you must APF-authorize <i>codehlq.LOADLIB</i> during postinstallation.

Table D-1 Configuration Parameters: OS/390 Master Agent Wizard (continued)

Parameter	Your value	Description
Proclib		The default is <i>datahlq.PROCLIB</i> . If you keep the default or if you specify a staging dataset that is not a JES PROCLIB, you must copy PROCs during postinstallation. If you specify a valid JES PROCLIB, be sure that your userid has authority to write to the JES PROCLIB you specify.
TCP/IP Parms		The TCP/IP parameters dataset. Normally you specify the same value used for the previous release on this host.
Infrastructure Details		
Server Host		Enter the DNS resolvable name or the IP address of the ECC Server. Consult the person who installed ECC Server for this information.
Server Port		Enter the server port.
Agent Port		Enter the agent port number. For IBM Communications Server, you can retain the default of 11051. For Computer Associates TCPAccess, you must enter a value greater than 1023 and less than 4097. Normally, this is the same value used for the previous release.
Dataset names and trace log name for file deployment		
JCL		Do not enter these values prior to installation. Rather, when you run the wizard, record the dataset names that appear on the screen at this stage of the wizard. You will use these values later when you run the installation JCL on the intended Master Agent host.
XMIT		
ANSWER		
Trace Log		Enter a pathname and file name for the trace log debugging file. If you want to change where the file is written (the default is My Documents), browse to your desired directory and edit the file name as needed.
After you execute the upgrade wizard, run the installation JCL on the host. Then APF-authorize <i>coehlq.LOADLIB</i> if necessary, copy the Master Agent PROCs, and start the Master Agent. After that, go to the Console to upgrade the agents on this host. Be sure to do this before you attempt to clone this Master Agent (see next worksheet).		

Clone Master Agent Worksheet

Enter the parameters for Master Agents to be cloned from an already-installed Master Agent.

Table D-2 Clone Master Agent Worksheet

Clone Master Agent Parameters			
Hostname whose Master Agent you want to clone. This is normally the host you upgraded using the OS/390 Master Agent Upload Wizard.		Ensure the following: The hostname has been upgraded, both Master Agent and MVS agents.	
Sysplex of these hosts ^a			
Parameter	Your Value: Host #1	Your Value: Host #2	Your Value: Host #3
Host (LPAR) Name ^b			
Data High-level Qualifier ^c			
Optional Data High-Level Qualifier Attributes			
Data Class			
Management Class			
Storage Class			
Unit			
Volume Serial			
Installation Libraries			
JES PROCLIB ^d			
TCP/IP Parms ^e			
ControlCenter Parameter			
Agent Port ^f			
Parameter	Your Value: Host #4	Your Value: Host #5	Your Value: Host #6
Host (LPAR) Name ^b			
Data High-level Qualifier ^c			
Optional Data High-Level Qualifier Attributes			

Table D-2 Clone Master Agent Worksheet (continued)

Clone Master Agent Parameters			
Data Class			
Management Class			
Storage Class			
Unit			
Volume Serial			
Installation Libraries			
JES PROCLIB ^d			
TCP/IP Parms ^e			
ControlCenter Parameter			
Agent Port ^f			

- All hosts in this table must be in the same Sysplex.
- Enter the name of the OS/390 or z/OS host on which you want to install a Master Agent.
- Enter a data high-level qualifier that is unique for each host. For upgrades, enter the same *datahlq* used in the previous release.
- If desired, enter a staging dataset or a JES PROCLIB. The default is *datahlq.PROCLIB*.
- Enter the TCP parameters dataset name, available from the administrator who performed the TCP/IP diagnostics in Chapter 3, *Testing the TCP/IP Configuration*. This value is required.
- Enter the port number for the agent. For IBM Communications Server, you can use the default of 11051. For CA TCPaccess, you must enter a value greater than 1023 and less than 4097.

This appendix lists messages issued by MMNSERVER, the NetServer component of the Master Agent on MVS. It also provides general guidance on addressing various types of messages.

Agent-specific messages are not located in this guide. They are documented in the Console online help.

The appendix has the following sections:

- ◆ Addressing MMN Messages E-2
- ◆ List of MMNSERVER Messages E-4

Addressing MMN Messages

This section lists groups of messages with general information on how to locate information to help you resolve them. These messages are issued by MMNSERVER, the NetServer component of the Master Agent on MVS.

In general, use the troubleshooting information in Chapter 12, *Troubleshooting the Installation of Agents for MVS*. That chapter discusses how to troubleshoot hostname resolution problems and other TCP/IP problems, in addition to non-TCP/IP issues. It also describes how to obtain log information for the MMNSERVER component.

NetServer Startup Messages

The NetServer startup messages are shown in Figure 7-13 on page 7-21.

Hostname Resolution Messages

You can troubleshoot hostname resolution errors using Chapter 12, *Troubleshooting the Installation of Agents for MVS*. That chapter discusses how to troubleshoot hostname resolution problems and other TCP/IP problems.

Note that some hostname resolution errors may not be due to a hostname configuration problem. Other underlying configuration or operational errors in TCP/IP could result in problems resolving the hostname. For example, if TCP/IP address spaces VMCF and TNF are not running, hostname resolution errors will occur.

The following messages could indicate problems with hostname resolution:

```
MMN0001E Verify that DD SYSTCPD is defined in the JCL.  
MMN0001E Verify that file (TCPIP_PREFIX).ETC.HOSTS is defined.  
MMN0001E Verify the TCPIP_DATA setting.  
MMN0805E NetServer can not resolve the local hostname localhostname.
```

Other TCP/IP messages

The following messages indicate problems or issues with TCP/IP. Ensure that TCP/IP is configured and running. Also, ensure that the TCPDATA dataset that you specified in Master Agent installation is for a TCP/IP stack that is running. For example, if you have multiple TCP/IP stacks, the TCPDATA specification in the Master Agent may be pointing to a stack that is not running.

```
MMN0801E NetServer to TCP/IP availability has been interrupted,  
retrying.  
MMN0802I NetServer to TCP/IP availability has been restored.  
MMN0803E NetServer can not obtain the local hostname localhostname.  
MMN0804E TCP/IP is available but another error occurred, errno=errno
```

Server and Store Messages

The following messages indicate a problem with the ECC Server or store. See the EMC ControlCenter administrator for information about the status of those components.

As long as agents are running on MVS, they will continue to collect and save data. They will not be able to send data to the Console or Repository until the store and the ECC Server become available.

```
MMN0050E The NetServer Agent detected a server failure for INITX.  
MMN0051E The NetServer Agent detected a store failure for INITX.
```

List of MMNSERVER Messages

The following list includes MMNSERVER messages in order of message number. MMNSERVER is the NetServer component of the Master Agent on MVS.

```
MMN0000I NetServer Communications subtask SSTAGENT agent started.
MMN0001E NetServer initialization of listener socket failed.
MMN0001E Verify that DD SYSTCPD is defined in the JCL.
MMN0001E Verify that file (TCPIP_PREFIX).ETC.HOSTS is defined.
MMN0001E Verify the TCPIP_DATA setting.
MMN0001I NetServer Driver subtask MMNSERVER started.
MMN0002I NetServer Driver subtask MMNSERVER terminated.
MMN0003E Startup error getStorage failed.
MMN0004I NetServer Communications subtask SSTAGENT agent shutdown
    completed.
MMN0007E Agent type not known, can not initialize.
MMN0007W Exit quit().
MMN0007W No complex name specified.
MMN0007W Signal ABEND Handler exiting.
MMN0009E Agent framework initialization failed.
MMN0011E Internal error, ecbCount < 0.
MMN0013E Allocate schedule failed.
MMN0015E Argument size exceeds maximum.
MMN0050E The NetServer Agent detected a server failure for INITX.
MMN0050I INITX OK, hostid=hostid, compid=compid.
MMN0051E The NetServer Agent detected a store failure for INITX.
MMN0052E The NetServer Agent INI file definition requires verification
    of accuracy.
MMN0101E Some required files were not allocated, NetServer
    terminating.
MMN0500I Received command request: mnncsstip (command)
MMN0501E Too many parameters for command
MMN0502E Unknown command.
MMN0801E NetServer to TCP/IP availability has been interrupted,
    retrying.
MMN0802I NetServer to TCP/IP availability has been restored.
MMN0803E NetServer can not obtain the local host name localhostname.
MMN0804E TCP/IP is available but another error occurred, errno=errno
MMN0805E NetServer can not resolve the local host name localhostname.
MMN0910I Set logging level to log_type
MMN0901E Invalid SET LOGLVL request. Usage SET LOGLVL=0-5
MMN0902E Invalid SET LOGLVL request. Usage SET LOGLVL=0-5
MMN0920I NetServer General Information Display
MMN0921I NetServer status=xxxxxx NumTranTask=yyy RestartCount=zzz
MMN0922I NetServer Listener Port=listenPort Loglvl=log_type
MMN0923I SendTask=Active/Inactive RcvTask=Active/Inactive
    Inbound=active/inactive LogTask=Active/Inactive
MMN0924I Remote Server=serverHostname IP=serverIP Port=serverPort
MMN0925I Remote Store=ConnectTo IP=ConnectToIp Port=ConnectToPort
```

```
MMN0926I SndCTGcnt=sndctgnt SndSSTcnt=sndcount RcvSSTcnt=rcvcount
        TranRecy=trancount
MMN0927I Agent Status  Cmpld
MMN0928I dsplyAgentName Active/Inactive cmpld
MMN0929I End of display
MMN0930I ? (h,help):  Display the help panel.
MMN0930I Help format: COMMAND (abbreviations): descriptions.
MMN0930I MMNINFO (d,display,q,query): Display the NetServer status.
MMN0930I SET LOGLVL=0-5 (s): Change the logging level.
MMN0930I VERSION (v): Display the NetServer version number.
MMN0935I NetServer version V5R1M1, built on DATE at TIME.
MMN0935I Maintenance level Base.
MMN0999I The MVS operator interface has terminated by request.
MMN9999E Input file MMNINI errors detected agent terminated.
```


Enabling Edit ACS Source Feature for OS/390

The procedures in this appendix enable you to access the Edit ACS Source feature in the EMC ControlCenter Console. This feature allows you to edit ACS Source code from within the Console by running the IBM Workstation Agent (WSA) terminal software.

These instructions assume that you are:

- ◆ Installing IBM Workstation Agent (WSA) software on a Windows 95/98/NT/2000 computer.
- ◆ Enabling `FTP` (or have previously enabled it) on your OS/390 or z/OS host.
- ◆ Starting WSA on the PC prior to using the Edit ACS Source feature in the EMC ControlCenter Host Agent for MVS SMS.

There are four procedures. The first three are required, and the last is optional, but we recommend that you do the last procedure, too. The procedures are:

- ◆ Downloading the IBM Workstation AgentF-2
- ◆ Installing IBM Workstation Agent on a Windows Host.....F-4
- ◆ Updating the Windows PATH Statement.....F-5
- ◆ Customizing the IBM Workstation Agent.....F-7
- ◆ When you complete all of these proceduresF-9

Downloading the IBM Workstation Agent

On a Windows PC with the EMC ControlCenter Console installed:

1. Select **Start, Run**.
2. In the **Run** dialog box, type:

`cmd`
3. Press **ENTER**.

For Windows 95 or 98, type `command` and press **ENTER**.

A Windows command dialog box is displayed.

4. Type:

`C:\`
Press **ENTER**.

5. Type:

`cd \temp`
Press **ENTER**.

Your download directory will be `C:\temp`. If you prefer, specify another directory.

If the `temp` directory does not exist on your PC, type `mkdir temp` and press **ENTER** to create this directory. Then type `cd \temp`.

6. Type:

`FTP MVS.your.server.here`

or

`FTP MVS IP address`

Press **ENTER**. If the mainframe has FTP enabled, you will see text similar to the example:

```
Connected to MVShost.your.host.net.
220-FTPD1 IBM FTP CS VvRrr at MVShost.your.host.net, 17:58:10 on 2002-08-16.
220 Connection will close if idle for more than 5 minutes.
User (MVShost.your.host.net:(none)):
```

7. Type your TSO ID and press **ENTER**. The following text appears:

```
331 Send password please.  
Password:
```

8. Type your TSO ID password and press **ENTER**. Text similar to the following appears:

```
230 tsoid is logged on. Working directory is "tsoid."  
ftp>
```

9. At the ftp> prompt, type:

BINARY

Press **ENTER**. This sets the transfer mode to binary, which is necessary for downloading executable files.

10. Type:

get 'ISP.SISPGUI(ISPGUINX)'

Press **ENTER** to download the software to the Windows host. Text similar to the following appears:

```
200 Port request OK.  
125 Sending data set ISP.SISPGUI(ISPGUINX)  
250 Transfer completed successfully.  
ftp: 1480477 bytes received in 7.99Seconds  
185.24Kbytes/sec.  
ftp>
```

"Transfer completed successfully" indicates that the download was a success.

11. Type:

quit

Press **ENTER** to exit from the FTP session.

12. Type:

exit

Press **ENTER** to close the Windows command dialog box.

Installing IBM Workstation Agent on a Windows Host

1. Access `C:\temp` (or the directory where you downloaded the file).
2. Rename the file '`ISP.SISPGUI(ISPGUINX)`' to `ISPGUINX.exe`.
3. Click `ISPGUINX.exe`. The **Workstation Agent Install Program** dialog box is displayed.
4. Specify an installation directory for the application. In this example, the directory is `C:\Progra~1\WSA`.

If you want to install the program in the Program Files directory (or any directory with a space in the name or that exceeds eight characters), specify the short, eight-character format of the directory name. Typically, this is with a tilde and 1 as the seventh and eight characters, as shown in the example.

5. Click **Install**. When the program finishes installing, the **Install Complete** message box is displayed. (See Figure F-1.)

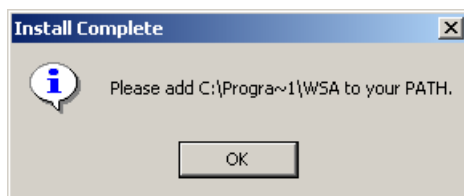


Figure F-1 **Install Complete Message Box**

6. Click **OK**.
7. Click **Quit** in the Workstation Agent Install Program to close the dialog box.

Updating the Windows PATH Statement

To add this directory to the Windows PATH statement, C:\Progra~1\WSA, do one of the following:

On Windows 2000

1. Right-click **My Computer** and select **Properties**.
The **System Properties** dialog box is displayed.
2. On the **Advanced** tab, click **Environment Variables**.
3. In **System Variables**, select **Path** and click **Edit**.
The **Edit System Variable** dialog box is displayed.
4. In the **Variable Value** field, type this text at the end:

;C:\Progra~1\WSA

The semicolon (;) is required.

5. Click **OK**. The dialog box closes.
6. Click **OK** to close the **Environment Variables** dialog box.
7. Click **OK** to close the **System Properties** dialog box. The change is now in effect. No reboot is required.

On Windows NT

1. Right-click **My Computer** and select **Properties**. The **System Properties** dialog box is displayed.
2. On the **Environment** tab, scroll to **path** and select it.
3. In the **Value** field, insert this text at the end of the existing path:

;C:\Progra~1\WSA

The semicolon (;) is required.

4. Click **Apply** to make the change take effect.
5. Click **OK** to close the **System Properties** dialog box. The change is now in effect. No reboot is required.

Starting a WSA Session

On a Windows host that has the ControlCenter Console installed, enter the following in a command window:

WSA

A **WSA session** pop-up panel is displayed.

WSA is now available for you to use, but continue with *Customizing the IBM Workstation Agent* on page F-7 for greater ease of use and convenience. Each time you connect to the Workstation Agent, you will be prompted to accept or deny each connection attempt if you do not perform the last procedure.

Customizing the IBM Workstation Agent

Customize WSA to automatically accept connections from predefined sources using the following steps:

1. With WSA open, select **Options, System Register**. The **System Register** dialog box is displayed.

Figure F-2 shows an example of the **System Register** dialog box.

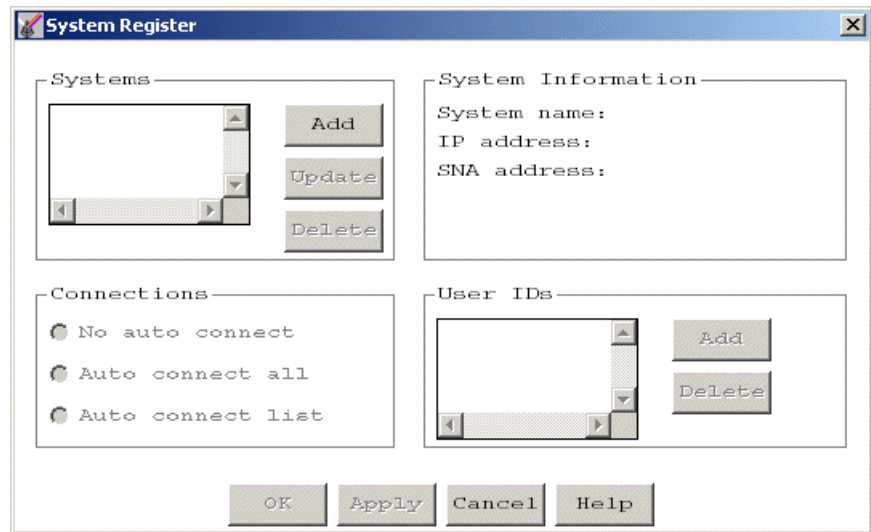


Figure F-2 System Register Dialog Box

2. Click **Add**. The **Add System** dialog box is displayed.

Figure F-3 shows an example of the **Add System** dialog box.

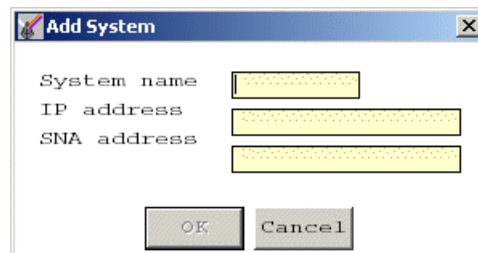


Figure F-3 Add System Dialog Box

3. Specify the MVS host's SMF ID in **System name**, and specify the MVS host's IP address in **IP address**. Leave **SNA address** blank.
4. Click **OK** in the **Add System** dialog box.
5. Select **Auto connect all** in the **System Register** dialog box.
6. Click **Apply**.
7. Click **X** to close the **System Register** dialog box.
8. On the Workstation Agent's **Option** menu, ensure a checkmark appears next to **Enable TCP/IP** and that no checkmark appears next to **Enable APPC** (Figure 5).

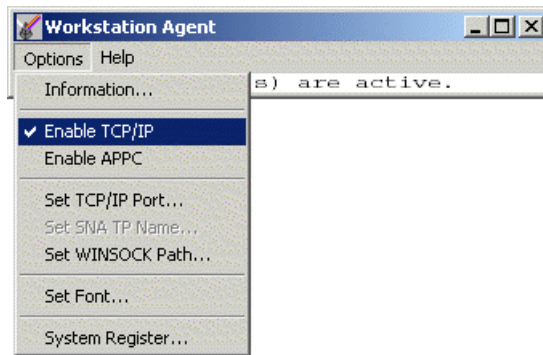


Figure F-4 Enable TCP/IP Option Selected

The EMC ControlCenter Host Agent for SMS Agent Edit ACS Routines functionality is now fully enabled. Be sure to start WSA before using the Edit ACS Source feature.

You may also want to customize the following WSA settings, which are also available on the **Options** menu:

Set TCP/IP Port — Use the default port number 15993.

Set WINSOCK Path — Not specified. It might be necessary for Windows 95 or 98. If WSA does not seem to be working, specify the path to `Winsock.dll`, which is usually `C:\Windows`.

Set Font — Set the font for the WSA windows. We recommend: Courier New, Regular, 8 Point.

When you complete all of these procedures ...

Now that you completed all of the procedures in Appendix F:

1. Start the EMC ControlCenter Console.
2. Start WSA
3. In the EMC ControlCenter Console, right-click an MVS host running the Host Agent for MVS SMS.

Then, select **Host Agent for MVS SMS, System Control, Edit ACS Source**.

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