CA-7®

Getting Started

3.3

COMPUTER ASSOCIATES®
Software superior by design.

Contents

Chapter

1

Introduction

This guide describes how to install the Computer Associates International, Inc., proprietary software product, CA-7. This guide is written for systems software programmers and personnel responsible for the installation, implementation, and maintenance of CA-7.

Organization

Chapter	Description
1	Presents a description of the operating environment, including data set storage requirements.
2	Describes CA-7 related documentation and the CA-7 installation tape format and file contents.
3	Provides detailed instructions for accomplishing each installation task for CA-7.
4	Provides detailed instructions for accomplishing each upgrade task for CA-7.
5	Provides information on maintaining CA-7.
6	Provides information on identifying and resolving problems, contacting Computer Associates Technical Support and requesting product enhancements.
Appendix A	Describes the CA-7 Stage I SYSGEN macros.
Appendix B	Describes generated JCLLIB members.
Appendix C	Describes VTAM and NCF node table definitions.
Index	Provides a quick way to locate specific material.

Summary of Revisions

Product Changes

CA-7 Release 3.3 contains the following major enhancements:

- Parallel Sysplex Exploitation

  CA-7 can optionally maintain a memory structure in the Coupling Facility in which participating ICOMs record tracking data. One or more Host ICOM(s) read from the memory structure and write to the Communication data set. This can significantly reduce I/O contention and increase feedback throughput.

- UNIX System Services Interface

  The OS/390 UNIX System Services (USS) CA-7 interface allows communication with CA-7 from the USS environment. The interface can be called directly from the UNIX shell or from the IBM USS batch interface (BPXBATCH).

- CA-7 CCI Interface

  The CA-7 CCI interface allows two-way communication with CA-7 from other address spaces and environments. The interface can be engaged in a batch mode, in a REXX address environment or it can be called directly from a user program. It accepts single or stacked commands as input and returns the CA-7 output from the commands as if they had been executed in batch mode.

- Critical Path Monitoring

  Through integration with CA-OPS/MVS II, Unicenter TNG and Unicenter TNG MVS Event Manager Option (MEMO), CA-7 can support the definition and monitoring of critical job flows within the CA-7 workload. CA-OPS/MVS II provides management and administration of critical path displays.

- Mixed Case Support in CA-7 Editor

  Character translation controls can be set in the CA-7 Editor. New Editor subcommands 'UPPER' and 'MIXED' determine whether editor data is translated to uppercase or left "as is."

  These subcommands are enabled with a new initialization file option. If this option is not coded, then all edit data is translated to uppercase.

- Job Completion Tracking Precision

  CA-7 records job completion times in hundredths of seconds. This allows job completions to be discriminated with a high degree of precision, thus reducing the likelihood of requirement posting ambiguities where jobs complete within the same minute.

- Display Duplicate Days for RESOLVe

  CA-7 can optionally display the duplicate RESOLV day(s) in new message SRC1-137. This occurs when a job is scheduled to execute the same day under two or more different Schedule IDs. With this information one can more quickly and efficiently determine the source of the scheduling conflict.

- VRM Device Control

  Virtual Resource Management (VRM) Device Control provides an alternative to Workload Balancing control of job submission based on tape drive availability. VRM resource count resources representing the number and type of storage devices used by the job are defined dynamically during CA-7 LOAD processing.

  Workload Balancing only permits two types of tape drives. With VRM Device Control, the user determines the number and structure of device groups.

- CA-7 Command Retrieval

  Command line input for CA-7 VTAM terminals is recorded in storage and may be retrieved with the /FETCH command. When the /PFnn command is used to associate /FETCH with a PF key, the CA-7 user can conveniently retrieve the last five CA-7 commands entered at an online terminal.

- CA-7 Base Calendar Security

  CA-7 security can allow clients to define CA-7 base calendar names to an external security product and secure user access to individual base calendars.

- REXX Address Environment

  Using the new CA-7 CCI interface, CA-7 allows REXX programs to pass commands to CA-7 and take action based on the output from those commands.

- Job 'Purge' Function

  The DB.1 (Job) panel provides a new function, PURGE, which deletes all CA-7 database records related to a job. Besides the standard delete processes, the PURGE function deletes incoming trigger definitions, requirement successor definitions, and the CA-11 CMT member for the job.

- Suppress LATE Designation

  Through an Initialization File option, the PROMPTS field on the DB.1 (Job) panel can be used to indicate that certain jobs should never be marked as LATE on status displays. This means operations and production control staff will not be distracted when test or non-critical jobs do not complete on time.

- CSA Chains Above the 16M Line

  CA-7 CSA SMF and Trailer chains now reside in extended CSA (above the line), thereby reducing utilization of this critical resource.

- Automated Recovery Facility (ARF) Enhancements

  CA-7 can optionally add a LOGON parameter to the ARF TSO SEND command to cause messages to be retained until the user logs on to TSO. Also, support for ARF has been added to the Database Transportability facility.

- Prior Run Queue Expansion

  The maximum size of the Prior Run Queue is now approximately twice as large as in prior releases.

- CA-7 JCLCheck Common Component

  The CA-JCLCheck Common Component is provided in place of the CA-7 JCL syntax checker.

- Documentation Files on Tape

  The current CA-7 documentation files are provided in IBM Book Manager format on the product tape.

- Other Enhancements:
  - SMF Purge records may optionally be sent to a test copy of CA-7. This allows detection of pre-execution JCL Errors by the test copy.
  - The Scratch and Disk Queue Table queues can be formatted during a CA-7 ERST start which facilitates use of VIO to improve performance.
  - The LJOB command provides a new option, LIST=RQEXCP, that lists only those requirements with a SKIP or ONLY indication.
  - The reverse forecast commands, FRJOB and FRQJOB, have a new option, LIST=HDRS. This will limit the display to only the target job and all 'header' jobs.
  - Database Transportability now supports a new keyword, NODSNS, for SASSDT30 that prevents the generation of data set definitions.
  - The LQ group of commands (LREQ, LRDY, LACT, and so forth) now supports a Schedule ID filter, SCHID=.
  - The LRLOG command has a new sequence option, SEQ=REV, which causes entries to be displayed in reverse date/time sequence (most recent first).
  - The OPTIONS initialization file statement has a new keyword DPROCCOM= to enable comment statements in CA-Driver procedures.
  - The OPTIONS initialization file statement has a new keyword EXTSCHID= to set a default schedule ID for externally tracked jobs that are not assigned a non-zero schedule ID from the SASSEXTT table.
  - The CA-7 CAIRIM initialization module now accepts a new reinitialization parameter (REINIT=UTABS) to reload only user defined table modules.
  - The /DISPLAY command has a new STATUS option (/DISPLAY,STATUS=CA7) to describe the current copy of CA-7 (VTAM application ID, and so forth).

Documentation Changes

The documentation for CA-7 Release 3.3 differs from previous releases as follows:

- Unicenter TNG Framework for OS/390 is composed of the services formerly known as CA90s and Unicenter TNG Framework.
- The documentation set has been engineered to take advantage of the latest technology for online viewing, keyword searching, book marking, and printing. This set contains a hard copy *CA-7 Getting Started* guide and Version 3.3 of CA-7 documentation in both IBM BookManager and Adobe Acrobat Reader format on the tape.
- The *CA-7 Getting Started* guide replaces the *CA-7 Installation Guide* and the *CA-7 CA-ACTIVATOR 2.1 Supplement*.
- Reading Syntax Diagrams in the *CA-7 Commands Guide* explains how to read the command syntax used in all guides.

Technical changes are identified by a revision bar (|) in the left margin. Revision bars are not used for editorial changes and new manuals.

CA-7 Publications

The following publications are supplied with CA-7:

Name	Contents
Commands Guide	Describes general system commands, workstation network control commands, general inquiry facilities, work flow control, forecasting, and workload balancing. This guide is intended as a reference guide for production and operations users and for users with scheduling and operations responsibilities.
Database Maintenance Guide	Includes information on jobs, workstation networks, data sets, scheduling, requirement definitions, scheduling, JCL management, workload documentation, text editing, database verification, virtual resource management (VRM), automated recovery facility (ARF), and job implementation procedures.
Getting Started	Describes how to install and perform maintenance on CA-7.
Interfaces Guide	Contains information on interfaces with other products, external communicators, CA-Driver, the CA-7 NCF component, cross-platform scheduling, and scheduling OS/390 UNIX System Services jobs.
Message Guide	Lists messages generated by CA-7 components, either online or through batch programs. Conditions that generate these messages are explained and required actions described.

Name	Contents
Personal Scheduling Reference Guide	Describes an easy way to set up and monitor jobs without having to spend much time learning to use the various functions that are available to CA-7.
Primer	Describes the basic CA-7 tasks and shows how to perform those tasks online.
Reference Summary	Summarizes frequently used commands, functions and parameters, JCL and utility functions, and general usage commands. It also contains the editor, workload planning, workload balancing and queue maintenance commands.
Reports Guide	Presents the reports available to users of CA-7. This guide describes automated performance analysis, history reporting, workload planning, and the information on the interfaces with CA-Earl and CA-Easytrieve Plus.
Security Guide	Discusses CA-7 security (internal), external security, and user exits. It also includes information on how to change your security.
Systems Programmer Guide	Includes information about system structure, installation requirements and procedures, initialization, execution, maintenance, backup and recovery, user exits, user modifications and performance and tuning.

Related Publications

The following product-specific publications relate to CA-7 and are supplied by Computer Associates.

Name	Operating System
CA-ACF2 documentation	OS/390
CA-APCDDS documentation	OS/390
CA-APCDOC documentation	OS/390
CA-Dispatch documentation	OS/390
CA-Earl documentation	OS/390
CA-Easytrieve Plus documentation	OS/390
CA-JCLCheck documentation	OS/390
CA-Librarian documentation	OS/390
CA-Netman documentation	OS/390
CA-OPS/MVS II documentation	OS/390
CA-Panvalet documentation	OS/390
CA-Top Secret documentation	OS/390
CA-1 documentation	OS/390
CA-11 documentation	OS/390
CA-7 Agent documentation	NT, UNIX
CA-7 Notepad documentation	OS/390
CA-7 Report Balancing documentation	OS/390
CA-7 Reports+ documentation	OS/390
CA-7/Smart Console documentation	OS/390
CA-7 WorkStation documentation	NT
Unicenter TNG Framework for OS/390 documentation	OS/390

Name	Operating System
Unicenter TNG publications	OS/390, NT, UNIX

Chapter 2

System Requirements

This chapter lists the system requirements for installing CA-7.

Operating System Requirements

CA-7 operates under all levels of the MVS/XA, MVS/ESA, and OS/390 operating systems.

CA-7 operates under all releases of JES2 and JES3.

The only supported TP access method is VTAM.

CA-7 should execute APF authorized in the standard problem program protect key (usually protect key 8).

CA-7 installation and maintenance require SMP/E.

One type IV SVC is required.

SMF record types 14, 15, 26, and 30 (or optionally types 4, 5, and 20 instead of 30) must be generated.

Hardware Requirements

DASD Devices

CA-7 supports the following disk drives:

3330

3350

3375

3380

3390

9345

DASD Requirements

Chapter 3 of the *CA-7 Systems Programmer Guide* describes the CA-7 data sets and support files in detail. The three sets of files to consider are:

Distribution libraries for CA-7

Target libraries for CA-7

Permanent libraries for CA-7

Distribution Libraries

The following table shows the SMP distribution libraries for CA-7 and its associated common components and their approximate sizes (based on 3390 disks).

Library Name	Blksize	Trks	Dir	Description
CAI.CA7.CJE10LLD	6144	5	8	Cross-Platform Scheduling Common Component Load library
CAI.CA7.CL233LLD	6144	375	250	CA-7 Load Library
CAI.CA7.CL233MLD	3120	345	150	CA-7 Macro Library
CAI.CA7.CL233SLD	3120	375	150	CA-7 Source Library
CAI.CA7.SAMPJCL	3120	45	42	CA-7 Sample JCL library
CAI.CA7.CZ270LLD	6144	26	25	CA-JCLCheck Common Component Load library
CAI.CA7.CZ270MLD	3120	52	20	CA-JCLCheck Common Component Macro library

Target Libraries for CA-7

The following table shows the CA-7 SMP target libraries and their approximate sizes (based on 3390 disks). If common target libraries are used, you should add the space indicated to existing allocations.

Library Name	Trks	Dir	Description
CAI.CA7.CAICLIB	2	20	CA-7 CLIST library
CAI.CA7.CAIISPP	2	20	CA-7 ISPF Panel library
CAI.CA7.CAIISPT	1	10	CA-7 ISPF Table library
CAI.CA7.CAILIB	375	300	CA-7 Load library
CAI.CA7.CAIMAC	345	150	CA-7 Macro library
CAI.CA7.CAIPROC	5	30	CA-7 JCL Procedure library
CAI.CA7.CAISRC	375	150	CA-7 Source library
CAI.CA7.PPOPTION	45	24	Common Options library

Permanent Files for CA-7

The permanent files for CA-7 are described in the "Installation Requirements" chapter of the *CA-7 Systems Programmer Guide*. The default sizes are shown in U7SPACE in Appendix A and amount to approximately 2000 tracks of 3390 space. These defaults should be sufficient to define and control between 200 and 400 jobs depending on the average number of steps and DD statements per job. Obviously, the default sizes may be inadequate for sites running large workloads.

See the "Installation Requirements" chapter of the *CA-7 Systems Programmer Guide* for information related to estimating space required. If you do not have the information needed to estimate your space requirements, use the defaults and increase your allocations as needed using backup and reload procedures.

SMP Libraries

You may install CA-7 using common SMP libraries, or allocate a separate set for CA-7. If you choose to allocate a separate set, it will require approximately 210 tracks (based on 3390 disks). See Step 5: Allocate SMP/E Libraries for additional information.

Memory Requirements

On one host CPU, the CA-7 Central Control System requires a minimum of 4M of virtual storage. As the use of CA-7 increases, so do the virtual storage requirements. See the "Execution" chapter of the *CA-7 Systems Programmer Guide* for further discussion on storage requirements.

On each CPU where CA-7 controlled jobs execute, the CA-7 Independent Communications Manager (ICOM) requires approximately 64K of virtual storage.

Both CA-7 and ICOM can be executed as started tasks or batch jobs.

CA90s Services

Unicenter TNG Framework for OS/390 is composed of the services formerly known as CA90s and Unicenter TNG Framework.

Unicenter TNG Framework for OS/390

CA-7 requires the following Unicenter TNG Framework for OS/390 Common Services:

- CAIRIM
- CAISSF
- CA LMP

CA-7 optionally uses the following Unicenter TNG Framework for OS/390 Common Services:

- CAICCI
- CAIENF
- CA-C Runtime
- CA-Earl
- CA-SRAM
- Viewpoint

If there are other CA products installed at your site, some of these services may already be installed.

This section presents an overview of each of these services. See the *Unicenter TNG Framework for OS/390 Getting Started* and *Administrator Guide* for more information.

CAICCI

CAICCI, CAI Common Communications Interface, is a communications facility that offers a simple yet flexible approach enabling Computer Associates solutions to communicate with one another. This facility provides a layer that isolates application software from the specifics of the communications environment. The routines which make this possible are grouped under the service code W410. The CAICCI features include:

- single point of control
- multiple platform support
- performance optimization
- peer-to-peer (program-to-program) communication
- parallel conversations
- dynamic installation configuration
- ease of customization
- error handling

The CAICCI service is required if you plan to use the CA-7 CA-Netman interface, the CA-7 CCI interface, the CA-7 WorkStation, or any form of cross-platform scheduling. See the *CA-7 Interfaces Guide* for details.

CAIENF

CAIENF, CAI Event Notification Facility, is an operating system interface service which offers a simple yet flexible approach for Computer Associates solutions to obtain data from the operating system. By centralizing operating system interfaces within CAIENF, many features that were formerly available within a single solution can be shared across the entire product line. The routines that accomplish this are grouped under service code W110. Some of the CAIENF features are:

- dynamic installation and reconfiguration
- true recovery from system or individual power outages
- high performance asynchronous processing
- single interface between CA software solutions and operating system data
- built-in diagnostic aids
- ease of customization
- exploitation of relational database technology

The CAIENF service is required if you plan to use the CA-7 CA-Netman interface, the CA-7 CCI interface, the CA-7 WorkStation, or any form of cross-platform scheduling. See the *CA-7 Interfaces Guide* for details.

CAIRIM

CAIRIM, CAI Resource Initialization Manager, is the common driver for a collection of dynamic initialization routines that eliminate the need for user SVCs, SMF exits, subsystems, and other installation requirements commonly encountered when installing systems software. These routines are grouped under the service code S910. Some of the CAIRIM features are:

- obtaining SMF data
- verification of proper software installation
- installation of operating system interfaces
- automatic startup of CA and other vendor products
- proper timing and order of initialization

CA-7 requires the CAIRIM service.

CAISSF

CAISSF, CAI Standard Security Facility, allows CA software to offer standardized security interfaces regardless of the underlying access control software. CAISSF offers user authentication and resource access validation facilities, and can interface with CA security products (CA-ACF2 or CA-Top Secret) or compatible non-CA security products. CAISSF is a subservice contained within the service code S910 (CAIRIM). For CA security products, some of the CAISSF features include:

- a single security mechanism
- isolation of CA enterprise solutions from CA or vendor mechanisms

For non-CA security products, some of the CAISSF features include:

- resource class translation
- access level translation
- selective logging of requests
- request type control
- message support for failed access

CA-7 requires the CAISSF service.

CA LMP

The CA License Management Program provides a standardized and automated approach to the tracking of licensed software. It uses common realtime enforcement software to validate the user's configuration. CA LMP reports on activities related to the license, usage and financials of CA products. The routines that accomplish this are integrated into the service code S910 (the CAIRIM service). CA LMP features include:

- common Key Data Set can be shared among many CPUs
- "check digits" are used to detect errors in transcribing key information
- Execution Keys can be entered without affecting any CA software solution already running
- no special maintenance requirements

CA-7 requires the CA LMP service.

CA-C

CA-C Runtime is a runtime facility with reentrancy capabilities. Its modular architecture insulates CA-C Runtime programs from system and release dependencies. There is little, if any, system-dependent code linked with the user program. This allows for smaller user programs and easier maintenance. CA-C Runtime uses a memory manager to handle dynamic allocation requests for small pieces of storage. This enables fewer calls to be made on the operating system resulting in faster allocation and deallocation. The routines that accomplish this are grouped under the service code, F330. Some of the CA-C Runtime features are:

- calls functions written in other languages, such as Assembler or COBOL
- runtime kernels for each host environment
- device drivers for each environment
- single data structure for entry points

The CA-C Runtime service is required by a number of Unicenter TNG Framework for OS/390 Common Services. See the *Unicenter TNG Framework for OS/390 Getting Started* for specific information.

CA-Earl Reporting Service

The CA-Earl (Easy Access Report Language) Reporting Component is a user-friendly report definition facility with the power of a comprehensive programming system. CA-Earl allows you to modify and print the contents and layout of a predefined CA product report using English-like statements. The routines that provide this service are grouped under the CA-Earl reporting service code XE60. Some of the CA-Earl Reporting Service features are:

- page, user and field headings
- automatic subtotaling and totaling capabilities
- automatic data editing
- full arithmetic computational facilities
- high-level capabilities
- enhanced printed output control

The CA-Earl service is required if you wish to produce CA-7 reports using the CA-Earl facilities. See the *CA-7 Reports Guide* for details.

CA-SRAM Service

The CA-SRAM (Sort Reentrant Access Method) Service is a complete replacement for conventional methods of invoking a sort system from high-level languages. CA-SRAM allows the activation of several sorts concurrently, thereby simplifying the data and logic flow. The incoming data to the sort can be manipulated as desired by the user program in a high-level language without the need for special exit routines. The service routines that accomplish this are grouped under the service code SR70. Some of the CA-SRAM features are:

- has all loaded modules coded to be completely reentrant
- sorts in ascending or descending sequence
- accepts fixed-length and variable-length records
- allows key definitions to spread out over the record
- low overhead
- operating system independence

The CA-SRAM service is required if you wish to produce CA-7 reports using the CA-Earl facilities. See the *CA-7 Reports Guide* for details.

Viewpoint

Viewpoint is a windowed execution environment for mainframes. It uses SAA/CUA standards to enhance the integration of your Computer Associates products. The routines that provide this service are grouped under the service code WC20.

The Viewpoint service is required only if you have CA-7 WorkStation.

Chapter

3 Installation Steps

The installation steps described in this chapter are designed to install CA-7 on your system and get it up and running. It does not address the implementation phase of defining your workload and operating CA-7 on a day-to-day basis. See the *CA-7 Primer*, *CA-7 Database Maintenance Guide*, and the *CA-7 Commands Guide* for a full discussion of these areas. Also, you should see the *CA-7 Security Guide* for complete details on how to implement security for CA-7.

Installation Tape

CA-7 is distributed on a 3480 cartridge (or at your request, a standard label 9-track magnetic tape recorded at 6250 BPI) which must be installed through the use of SMP. The volume serial number is L2yymm, where L2 is the CA-7 product ID and yymm is the tape genlevel. The installation tape contains the following files:

File	File DSN	File Description
1	CAI.INSTALL	CA Install File
9	CAI.SAMPJCL	CA-7 Sample JCL Library
13	CAI.BKMGR	CA-7 BookManager File
14	CAI.PDFDOC	CA-7 Adobe Acrobat File
30	CAI.DOCREF	CA-7 Maintenance Documentation Updates
31	CAI.PTFREF	CA-7 Maintenance PTF/APAR Updates
32	SMPMCS	CA-7 SMP MCS File
33 forward		SMP Refiles

Note: The genlevel is specified on the external label of the tape and in the cover letter which accompanies it.

Once you have unloaded the CA-7 Sample JCL library (see Step 2: Load CA-7 Sample JCL Library), read documentation member $INOTES. This advises you of any special considerations or procedures for the particular genlevel you are installing.

NCF

If you plan to use the CA-7/Network Communications Facility (NCF), pay close attention to the NCF notes in the installation tasks.

- A site which executes both CA-7 and CA-7 NCF is referred to as an NCF1 site.
- A site that runs NCF without CA-7 is referred to as an NCF2 site.

See the *CA-7 Interfaces Guide* for other CA-7 NCF installation considerations.

Upgrading

If you are upgrading CA-7 from a previous version, see Chapter 4, "Upgrade Steps."

Installation Checklist

The following list summarizes the steps involved in installing CA-7. Use it as a checklist during the actual installation process.

__ Step 1: Preinstallation Considerations

__ Step 2: Load CA-7 Sample JCL Library

__ Step 3: Install/Upgrade Unicenter TNG Framework for OS/390

__ Step 4: Allocate the Distribution Libraries

__ Step 5: Allocate SMP/E Libraries

__ Step 6: Allocate Target Libraries

__ Step 7: Customize SMP/E JCL Procedure

__ Step 8: SMP RECEIVE

__ Step 9: SMP APPLY

__ Step 10: SMP ACCEPT

__ Step 11: Assemble CA-7 Stage I SYSGEN Macros

__ Step 12: Create the CA-7 JCLLIB

__ Step 13: Allocate CA-7 Files (Job N010)

__ Step 14: Copy CA-7 Procedures (Job N020)

__ Step 15: Format and Initialize CA-7 Files (Job N030)

__ Step 16: Update VTAM Definitions (Job N120)

__ Step 17: Perform CA-7 TSO/ISPF Updates

__ Step 18: Set ICMDSECT Options

__ Step 19: CA-7 USERMODs

__ Step 20: Merge the CA-7/API Table

__ Step 21: Prepare CAIRIM to Initialize CA-7

__ Step 22: IPL If Necessary

__ Step 23: Run CAIRIM to Initialize CA-7

__ Step 24: Execute CA-7 in Batch Mode (Job N220)

__ Step 25: Postinstallation Testing

__ Step 26: Load Online Documentation Files (Optional)

Step 1: Preinstallation Considerations

1. CA-7 requires one SVC number; the default is 167. If you wish to use a different number, identify an available type 3/4 number. (See Step 18: Set ICMDSECT Options.)
2. The last byte of the eight-byte User Identification field in the SMF common exit parameter area is used. **Make sure there is no conflict with the usage of this field.** If a conflict exists, another byte must be selected within this field. This information is used in Step 18: Set ICMDSECT Options.
3. The SMF definition must include the ACTIVE parameter. The SMF record types and exits are automatically established by CAIRIM. This does not affect what records are written to your SMF MANX/MANY data sets.
4. Build a high-level node in a user catalog for CA-7. The default for most data sets is CAI.CA7, but it may be changed in the CA-7 Stage I SYSGEN (U7PARMS macro). If this node is not built, the master catalog is used to catalog data sets and may require the operator to reply a password if the master catalog is protected.
5. CA-7 requires VTAM application definitions for itself and, if used the TSO/ISPF interface. Determine the application name for CA-7 (default is CA7), the VTAM ID of the terminal you plan to use as the CA-7 master terminal (default is VTAMTERM), and the maximum number of concurrent CA-7 users you wish to allow (default is 10). Also, if the TSO/ISPF interface is to be used, then determine the application name prefix (3 characters) for the TSO/ISPF interface (default is CA7), and the number of concurrent CA-7 ISPF users you wish to allow (default is 10).

   The CA-7 SYSGEN process uses this information to generate the CA-7 APPL definitions for your site. A subsequent installation step copies these definitions to your VTAM library (usually SYS1.VTAMLST). See the U7IFACE macro in Appendix A, “Stage I SYSGEN Macros,” for details on supplying this information.

   Using the CA-7 Network Communications Facility (NCF) requires additional VTAM definitions. See the *CA-7 Interfaces Guide*.

   See the *CA-7 Systems Programmer Guide* for more details on VTAM terminal definitions and the *CA-7 Interfaces Guide* for TSO/ISPF interface details.

6. Do not install the optional CA-7 CA-Panvalet interface USERMOD UL2PANV into the same SMP CSI as CA-Panvalet. Elements referenced in the interface SYSMOD cause an SMP/E error during the installation of the USERMOD. This USERMOD is required **ONLY** if you are running a version of CA-Panvalet prior to Version 14.0.

Step 2: Load CA-7 Sample JCL Library

The CA-7 distribution tape contains a sample JCL library for the CA-7 installation process. This library is in File 9 on the tape, DSN=CAI.SAMPJCL, and it is in IEBCOPY unloaded format.

Use the following JCL as a model to load the sample JCL file to disk.

```
//L233SAMP JOB (ACCTINFO),PGMR,CLASS=A,MSGCLASS=A,REGION=2M
//*
//*******************************************************************
//* PROVIDE A VALID JOB CARD AND ANY JOBPARM/ROUTE STATEMENTS
//* NEEDED FOR YOUR SYSTEM.  ALSO, MAKE CHANGES NOTED BELOW.
//*******************************************************************
//*
//IEBCOPY  EXEC PGM=IEBCOPY
//SYSIN    DD DUMMY
//SYSPRINT DD SYSOUT=A
//SYSUT1   DD DSN=CAI.SAMPJCL,
//            DISP=OLD,
//            UNIT=tape,                    <--your tape unit name
//            VOL=SER=L2yymm,               <--genlevel of CA-7 tape
//            LABEL=(9,SL,EXPDT=98000)
//SYSUT2   DD DSN=cai.ca7.SAMPJCL,          <--your data set name
//            DISP=(NEW,CATLG,DELETE),
//            UNIT=sysda,                   <--your DASD unit name
//            VOL=SER=xxxxxx,          <--your DASD volume serial #
//            SPACE=(3120,(585,65,42)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSUT3   DD UNIT=sysda,SPACE=(CYL,(1,1))  <--your DASD work unit
                                                name
//SYSUT4   DD UNIT=sysda,SPACE=(CYL,(1,1))  <--your DASD work unit
                                                name
```

Once this job has ended, your library contains the JCL needed to proceed with the installation of CA-7.

Note: When the Sample JCL file has been unloaded, see documentation member $INOTES for any special requirements or procedures for the current genlevel.

Step 3: Install/Upgrade Unicenter TNG Framework for OS/390

The installation of CA-7 requires that Computer Associates Unicenter TNG Framework for OS/390 Common Services CAIRIM, CAISSF (a subcomponent of CAIRIM), and CA LMP be installed on your system. You should also include CAIENF and CAICCI if you are planning to use any cross-platform communication facilities. You should also include CA-Earl and CA-SRAM if you wish to produce the standard CA-7 reports using CA-Earl facilities. These services may have already been installed with another CA product. Check your system to see if these services have already been installed.

These services are distributed on the Unicenter TNG Framework for OS/390 tape that should be included in your CA-7 distribution package. See the *Unicenter TNG Framework for OS/390 Getting Started* for specific requirements and steps to install or upgrade these services on your system.

If you need to install or upgrade these services, do so at this point keeping in mind the following considerations:

- Some of the Common CA data sets, libraries, and JCL procedures allocated and created during the Unicenter TNG Framework for OS/390 installation are used during the CA-7 installation process.
- Do not actually run the CAIRIM started task yet. You are directed to do this in the latter stages of the CA-7 installation process (see Step 21: Prepare CAIRIM to Initialize CA-7).
- CAIRIM requires APF authorization of some common CA libraries. The CA-7 load library also requires APF authorization. You can save yourself an IPL by waiting until the latter stages of the CA-7 installation process and authorize all of them at the same time (see Step 22: IPL If Necessary).

NCF Note

NCF2 sites require only the CAIRIM, CAISSF, and CA LMP Unicenter TNG Framework for OS/390 Common Services.

Step 4: Allocate the Distribution Libraries

Sample JCL member L233ADST allocates the distribution libraries required for CA-7 installation and maintenance.

All space allocations are in cylinders and provide free space for future maintenance. See “Hardware Requirements” in Chapter 2 for specific requirements.

Edit the JCL to conform to your installation's standards. Do not change the data set low-level qualifiers.

Submit the job and review the output to verify that the allocations ran successfully.

This step allocates the following data sets:

Distribution Data Sets	Description
high.level.CJE10LLD	Cross-Platform Scheduling Common Component Load library
high.level.CL233LLD	CA-7 Load library
high.level.CL233MLD	CA-7 Macro library
high.level.CL233SLD	CA-7 Source library
high.level.CZ270LLD	CA-JCLCheck Common Component Load library
high.level.CZ270MLD	CA-JCLCheck Common Component Macro library

Step 5: Allocate SMP/E Libraries

Sample JCL members L2SMPALC and L2SMPAL5 allocate the SMP/E libraries required for the installation and maintenance of CA-7. If you are running SMP/E prior to Version 5, use member L2SMPALC. If you are running SMP/E Version 5 or higher, use member L2SMPAL5.

The space allocations are in TRACKS with some free space allocated to allow for future maintenance.

Edit the JCL to conform to your installation's standards. Do not change any of the data set low-level qualifiers. You must customize items in the SYSIN input in the body of the job in addition to the procedure variables. Be certain to check the ENTIRE job before submitting it.

Submit the job and review the output to verify that the allocations ran successfully. A return code of 4 is expected during the SMP CSI zone initialization step (SMPEZONE). This occurs due to the replacement (REP) of zone entries that did not previously exist.

Note: If you already have a set of SMP/E libraries to use for the CA-7 installation, you may skip this step.

This step allocates the following libraries:

Data Sets
high.level.SMPSCDS
high.level.SMPMTS
high.level.SMPPTS
high.level.SMPSTS
high.level.SMPCSI.CSI
high.level.SMPHOLD

Upgrade Note

If your previous version of CA-7 was installed using SMP/E, you may choose to use your existing target libraries or allocate a new set. If you reuse your existing libraries, the previous version is automatically deleted.

Step 6: Allocate Target Libraries

Sample JCL member L233ATGT allocates the target libraries required for the installation and maintenance of CA-7. Space allocations are in cylinders or tracks and provide free space for maintenance.

If you have already allocated a set of CA libraries for CA products, you may use them for CA-7. Before doing so, CAREFULLY review the "Target Libraries for CA-7" in Chapter 2 to ensure that you have enough space and directories to accommodate CA-7. If not, use this job to allocate a separate set.

Edit the JCL to conform to your installation's standards. Do not change the data set low-level qualifiers.

Submit the job and review the output to verify that the allocations ran successfully.

This step allocates the following libraries:

Target Data Sets - CA Common Libraries	Description
high.level.CAILIB	Target Load library
high.level.CAIMAC	Target Macro library
high.level.CAISRC	Target Source library
high.level.CAICLIB	Target CLIST library
high.level.CAIISPP	Target ISPF Panel library
high.level.CAIISPT	Target ISPF Table library
high.level.CAIPROC	Target JCL Procedure library
high.level.PPOPTION	Target Options library

Upgrade Note

If your previous version of CA-7 was installed using SMP/E, you may choose to use your existing target libraries or allocate a new set. If you reuse your existing libraries, the previous version is automatically deleted.

Step 7: Customize SMP/E JCL Procedure

Sample JCL member CAIL233 is the model SMP/E JCL procedure used during the installation of CA-7.

Modify the JCL procedure to conform to your installation's standards. Review the notes for additional information concerning library requirements.

You should place the procedure in the CA common procedure library (default = CAI.CAIPROC). You can use this procedure in-stream if necessary, but it is recommended that the procedure reside in a PROCLIB.

The procedure variables should reference the following data sets:

- CA-7 distribution data sets allocated during Step 4
- SMP/E data sets allocated during Step 5 (or your common set)
- CA-7 target libraries allocated during Step 6 (or your common set)

If you are installing the CA-7 CA-11 interface, the CA-11 Macro library must be included in the SYSLIB DD statement for proper installation of the interface.

Step 8: SMP RECEIVE

Sample JCL member L233REC is used to SMP RECEIVE the CA-7 SYSMODs. Review the list of CA-7 SYSMODs and the notes for proper SMP/E processing for the CA-7 installation.

You can SMP RECEIVE the following SYSMODs:

SYSMOD	Description
CL233S0	CA-7 Base (required)
CL233C0	CA-7 Communications Component (required)
CJE1000	Cross-Platform Scheduling Common Component (required)
CZ27000	CA-JCLCheck Common Component (required unless CA-JCLCheck product is installed)
CL233SB	CA-7 CA-11 Version 2.0/2.1 interface (optional)
CL233SC	CA-7 CA-11 Version 2.2 interface (optional)

Notes

The PTF= JCL procedure variable in L233REC must be set to allow for tape allocation for the SMPMCS data set on the CA-7 installation tape (that is PTF='').

Edit the JCL to conform to your installation's standards. This job requires mounting of the CA-7 installation tape.

Submit the job and review the output to verify that the RECEIVE processing ran successfully and that the appropriate SYSMODs were received. If the SMP RECEIVE completed with a return code greater than zero (0), correct the error, and resubmit.

The interface SYSMODs are optional. If you wish to install an interface SYSMOD, uncomment the SYSMOD ID in the sample JCL member L233REC. Ensure that the appropriate interface level corresponds to your current version of that product.

NCF Note

SYSMOD CL233C0 is the CA-7 communications component. This includes ICOM and NCF. You may install this SYSMOD separately at remote sites for CA-7 remote site support. It does not require the CA-7 base SYSMOD CL233S0 or the common component SYSMODs.

Step 9: SMP APPLY

Sample JCL member L233APP is used to SMP APPLY the CA-7 SYSMODs. Review the table of CA-7 SYSMODs and the notes for proper SMP/E processing for the CA-7 installation.

The following SYSMODs can be SMP applied:

SYSMOD	Description
CL233S0	CA-7 Base (required)
CL233C0	CA-7 Communications Component (required)
CJE1000	Cross-Platform Scheduling Common Component (required)
CZ27000	CA-JCLCheck Common Component (required unless CA-JCLCheck product is installed)
CL233SB	CA-7 CA-11 Version 2.0/2.1 interface (optional)
CL233SC	CA-7 CA-11 Version 2.2 interface (optional)

Notes

If you are installing any of the optional SYSMODs, you must uncomment the appropriate SYSMODs to be applied in this step. The selected SYSMODs must have been received in the previous SMP RECEIVE step before being applied. See the *CA-7 Interfaces Guide* for additional information on using the CA-7 interfaces.

If the CA-7 CA-11 interface is being APPLYed, a condition code of 4 is acceptable for this task. Otherwise, you should expect a return code of 0. Verify that the return code 4 is a result of assembler warning messages. You should investigate all other exception conditions.

Step 10: SMP ACCEPT

Sample JCL member L233ACC is used to SMP ACCEPT the CA-7 SYSMODs. Review the list of CA-7 SYSMODs and the notes provided below for proper SMP/E processing for the CA-7 installation.

The following SYSMODs can be SMP accepted:

SYSMOD	Description
CL233S0	CA-7 Base (required)
CL233C0	CA-7 Communications Component (required)
CJE1000	Cross-Platform Scheduling Common Component (required)
CZ27000	CA-JCLCheck Common Component (required unless CA-JCLCheck product is installed)
CL233SB	CA-7 CA-11 Version 2.0/2.1 interface (optional)
CL233SC	CA-7 CA-11 Version 2.2 interface (optional)

Notes

If you are installing any of the optional SYSMODs, you must uncomment the appropriate SYSMODs to be applied in this step. The selected SYSMODs must have been received in the previous SMP RECEIVE and APPLY steps before being accepted. See the *CA-7 Interfaces Guide* for additional information on using the CA-7 interfaces.

A condition code of 4 is acceptable for this task. Verify that the return code 4 is a result of default linkage editor parameters being used for the CA-7 CA-11 interface and/or the CA-JCLCheck Common Component. You should investigate all other exception conditions.

Step 11: Assemble CA-7 Stage I SYSGEN Macros

The CA-7 target macro library (CAIMAC) generated in the previous steps contains the macros necessary to generate a CA-7 JCL Library (JCLLIB) which contains installation jobs and supporting files to install CA-7 on your system.

Member L233GEN in the CA-7 Sample JCL library contains a Sample CA-7 Stage I assembly job. This sample is also listed in Appendix A, "Stage I SYSGEN Macros."

The output from the CA-7 Stage I assembly is a card-image IEBUPDTE job which contains all of the files needed to create the CA-7 JCL LIBRARY (JCLLIB), which is used in Stage II of the CA-7 installation process. This chart shows the CA-7 Stage I SYSGEN macros (some are optional).

Macro		Description
U7GEN	(Required)	Specifies global parameters.
U7JCLDS	(Required)	Specifies the JCL data sets that the CA-7 system can use.
U7JOBCRD	(Required)	Specifies the JOB statement operand information that is placed on the generated Stage II installation jobs.
U7PARMS	(Required)	Specifies the system PARMs.
U7DAVOLS	(Optional)	Specifies the direct-access volumes that can be accessed by CA-7.
U7IFACE	(Optional)	Specifies CA-7 VTAM, TSO/ISPF, and other system interface parameters.
U7PNAMES	(Optional)	Overrides the default names for the generated CA-7 JCL procedures.
U7SPACE	(Optional)	Overrides the default space allocation parameters for the CA-7 files.

Macro		Description
U7TEST	(Optional)	Specifies values used by the generated sample test job stream and the log tape dump jobs.
U7VOL	(Optional)	Specifies the volume and unit parameters for the CA-7 files.

These macros and their parameters are described in detail in Appendix A, "Stage I SYSGEN Macros."

Coding Considerations

The following are considerations for coding the CA-7 Stage I SYSGEN macros:

1. Specify U7PARMS first, and specify U7GEN last. The other macros may be specified in any order. Required macros are:

   U7PARMS

   U7JCLDS

   U7JOBCRD

   U7GEN

2. Three keywords on the U7PARMS macro allow you to control the data set name prefixes for CA-7:

NODE — This specifies the data set name prefix for all non-VSAM/non-SMP CA-7 data sets (queues, logs, and so forth).

TARGET — This specifies the data set name prefix for all CA-7 SMP controlled target libraries (CAIMAC, CAILIB, and so forth). You should specify the prefix used in Step 6: Allocate Target Libraries.

VSAM — This specifies the data set name prefix to be used for all CA-7 VSAM files.

CAI.CA7 is the default value for NODE. If the TARGET and/or VSAM prefixes are not specified, they default to the NODE prefix value.

3. Should the first 4 characters of the job names be other than CA07? The default for the Stage II installation job names is CA07xxxx, where xxxx is a suffix (for example N010, N020). (U7JOBCRD macro, JOBNAME= keyword)
4. Are specific procedure names for the CA-7 cataloged procedures needed, or do the defaults suffice (default = CA7xxxx)? (U7PNAMES)
5. Are any of the CA-7 data sets to reside on a volume other than the one coded on the U7PARMS macro? (U7VOL)
6. Is the data set space allocation to be different than the defaults? (U7SPACE)
7. Is a specific data set name to be used for the tape file that contains the log data? (U7TEST)
8. Are you running in a nonshared spool, multi-CPU environment? If so, you must code a value for the number of submit data sets equal to the number of CPUs in your system. (U7PARMS macro, NSUBMT= keyword)
9. Names for VTAM and ISPF definitions from the preinstall task are specified on the U7IFACE macro.
10. Do you have CA-11 (ARTS) installed? (U7IFACE macro, U11LD keyword) Do you have CA-1 (TMS) installed? (U7IFACE macro, U01LD keyword)
11. Do you plan to run the CA-7 Network Communications Facility (NCF)?

    If this is an NCF1 site (running both CA-7 and NCF), specify NCF1=YES in the U7PARMS macro.

    If this is an NCF2 site (running NCF but not CA-7), specify NCF2=YES in the U7PARMS macro.
12. If you want this to be a TEST copy of CA-7, specify TESTSYS=YES on the U7GEN macro. Also see the *CA-7 Systems Programmer Guide* for more information.

Using Appendix A, “Stage I SYSGEN Macros” and the above considerations, code the CA-7 SYSGEN macros for your site. You can use the L233GEN member in the CA-7 Sample JCL library as a model.

Assemble the Stage I macros and check the output for error messages. If there are errors, correct the problem(s) and rerun the assembly until it runs cleanly. When you have a clean Stage I assembly, continue to the next installation step.

The output is set up to go to the CA-7 Sample JCL library as member STAGE1.

Step 12: Create the CA-7 JCLLIB

The output from the CA-7 Stage I SYSGEN job (ddname SYSPUNCH) is a job stream used to create the CA-7 JCLLIB which contains the Stage II installation jobs, procedures, and files needed to complete the CA-7 installation. It also contains jobs, procedures, and files used to run CA-7 for production and for ongoing maintenance. The output from L233GEN is set up to go to the CA-7 Sample JCL library as member STAGE1.

The job created by the Stage I SYSGEN is CA07N000 (the SYSGEN install macros may have overridden the prefix CA07). The job contains two steps:

- Step GENBLD is an IEBUPDTE step which creates a temporary PDS with all of the CA-7 JCLLIB members. This step also contains a DD statement defining the CA-7 JCLLIB itself. The JCLLIB file uses the same allocation values as the CA-7 Sample JCL library and requires the same amount of space.
- Step GENCOPY is an IEBCOPY step which copies the members from the temporary PDS to the CA-7 JCLLIB library with a REPLACE option.

The CA07N000 job is set up in two steps so that if you choose to rerun the Stage I SYSGEN job generating only certain members, the IEBCOPY step replaces only those members in the original JCLLIB. If you choose to rerun the CA07N000 job, remember to REMOVE the JCLLIB DD statement from the GENBLD step to avoid a JCL error (since JCLLIB was allocated the first time you ran CA07N000).

Before submitting the CA07N000 job, check the JOB statement for proper operands. This same JOB statement (except for job name and region) has been generated for all of the Stage II installation and CA-7 test jobs. If there is a problem with the format, it may be easier to go back and correct the problem(s) in the Stage I SYSGEN macros and regenerate the CA07N000 job. (Remember that the U7JOBCRD macro is used to put JCL comments or statements immediately after each JOB statement generated. If you need JOBPARM and/or ROUTE statements, it is a convenient place to define them once and have them included in all generated jobs.)

If you need to make any global changes to the generated output, it is easier to do it to the CA07N000 job stream than after the JCLLIB has been built, where the jobs and files are separated into individual members.

Run the CA07N000 job and confirm the CA-7 JCLLIB has been properly constructed before proceeding to the next step. Most of the remaining steps involve running the Stage II installation jobs contained in the CA-7 JCLLIB.

See Appendix B, “Generated JCLLIB Members” for a list of JCLLIB members created by the CA07N000 job.

Step 13: Allocate CA-7 Files (Job N010)

The CA-7 JCLLIB created in the Stage I SYSGEN process contains member CA07N010 (the prefix CA07 may have been overridden in the SYSGEN install macros).

Job CA07N010 allocates the CA-7 VRM database, CA-7 ARF database, queue, and support files.

Edit member CA07N010 and make the following adjustments if necessary.

1. General allocation considerations:

   - Using default allocations, this step requires approximately 2000 tracks of 3390 disk space. The individual files and defaults are shown in U7SPACE in Appendix B. These defaults should be adequate for defining over 300 jobs to CA-7. The number may be higher or lower for your installation depending on several variables, such as number of steps and number of DD statements per job. See Chapter 3 in the *CA-7 Systems Programmer Guide* for more information about determining space requirements.
   - The checkpoint data set (DDCKPT) and the nine queue data sets (DDQxxxx) must reside on the same device type and are unmovable.
   - The checkpoint data set (DDCKPT) must be allocated as (CYL,1).
   - Both log data sets (DDLOGP and DDLOGS) must reside on the same volume.
   - If GDGs are indicated for log tapes on U7TEST macro, they are defined in member GDGDECK on the CA-7 JCLLIB. Check these definitions for limits and change if desired.

2. VSAM allocations considerations:

   - Specification for a user VSAM catalog and its password may be required.
   - The IDCAMS control statements for the definition of the VRM data set is contained in member VRMALLOC of the CA-7 JCLLIB. The IDCAMS control statements for the definition of the ARF data set is contained in member ARFALLOC of the CA-7 JCLLIB.
   - If a separate DATA space is not desired for these files, then the UNIQUE parameter must be deleted.

   Run job CA07N010 and confirm the data sets are allocated before proceeding to the next step.

   Note: If you experience problems with the allocations, see member CA07N005 before resubmitting CA07N010. The purpose of CA07N005 is to scratch and uncatalog the data sets allocated in CA07N010 so that it can be rerun without duplicate DSN JCL errors.

NCF Note

For NCF2 sites, only the communications data set, NCF communications data set, and undeliverable queues are allocated. No VSAM files are allocated.

Step 14: Copy CA-7 Procedures (Job N020)

The CA-7 JCLLIB created in the Stage I SYSGEN process contains member CA07N020 (the prefix CA07 may have been overridden in the SYSGEN install macros).

This is an IEBCOPY job to move the CA-7 JCL procedures from the CA-7 JCLLIB to a PROCLIB on your system. These procedures are used on some of the remaining installation jobs. The other procedures are used for maintenance and by CA-7 itself.

The CA-7 procedures should reside on a PROCLIB accessible to all systems where CA-7 submitted jobs will run. If necessary, change the PROCLIB specified on the SYSUT2 DD statement to the proper library for your system.

Run job CA07N020 and confirm that it has run successfully before proceeding to the next step.

This chart lists the CA-7 procedures moved in this step with their default names (the prefix CA7 may have been overridden in the Stage I SYSGEN macros):

Default Name	Description
CA7ARK	CA-7 ARF Database Backup
CA7ARL	CA-7 ARF Database Reload
CA7BAT	CA-7 Batch Only Execution
CA7BKUP	CA-7 Database Backup/Reload
CA7BTI	CA-7 Batch Terminal Interface
CA7ICOM	CA-7 Independent Communication
CA7LOAD	CA-7 Load Processor
CA7LOG	CA-7 Log Dump
CA7NCF	CA-7 Network Communications Facility
CA7ONL	CA-7 Online Execution
CA7SVC	Execute PGM to Issue CA-7 SVC
CA7TRLR	CA-7 Trailer Step
CA7VBK	CA-7 VRM Database Backup
CA7VRL	CA-7 VRM Database Reload

NCF Note

For NCF2 sites, only a subset of the above list is specified in your N020DECK because CA-7 itself is not running here.

CA-11 Note

If you are using the CA-7/CA-11 interface, then you may also need the CA11RMS procedure from the CA-11 SAMPJCL data set.

Step 15: Format and Initialize CA-7 Files (Job N030)

The CA-7 JCLLIB created in the Stage I SYSGEN process contains member CA07N030 (the prefix CA07 may have been overridden in the SYSGEN install macros).

This job has a number of steps that initialize or format CA-7 files. Depending on the options specified in your Stage I SYSGEN, the steps necessary for your site are included. The possible steps are:

1. Copy CA-7 help members to the CA-7 help library
2. Create first GDG of CA-7 log dump file
3. Create first GDG of the CA-7 log history file
4. Format the CA-7 browse data set
5. Allocate/initialize the CA-7 database
6. Initialize the communications data set
7. Initialize the NCF communications data set
8. Initialize the NCF undeliverable queue

Some of the above steps use JCL procedures copied in the previous step. Before submitting the job, ensure that these PROCs will be accessed. Run job CA07N030 before proceeding to the next step.

Note: If you need to reinitialize only the CA-7 communications data set (COMMDS), see JCLLIB member CA07N700 for special JCL to accomplish this.

Specifications for a user VSAM catalog and its password may be required.

The CA-7 database control statements are in member DBPARMS. See "Backup and Recovery Considerations" in the *CA-7 Systems Programmer Guide* for more information.

NCF Note

See DASD Requirements in Chapter 4 of the *CA-7 Interfaces Guide*.

Step 16: Update VTAM Definitions (Job N120)

The CA-7 JCLLIB created in the Stage I SYSGEN process contains member CA07N120 (the prefix CA07 may have been overridden in the SYSGEN install macros).

This is an IEBCOPY job to move the CA-7 VTAM definitions from the CA-7 JCLLIB to the VTAMLST library specified on the U7GEN macro. The members which are copied by job CA07N120 are listed in member VTAMDECK in the CA-7 JCLLIB. This table lists the CA-7 VTAM definition members and their descriptions:

Name	Description
CA7VTAM	CA-7 VTAM APPL definition.
CA7ISPF	CA-7 VTAM APPL definitions for the TSO/ISPF interface.

If you are an existing CA-7 user, you may have your VTAM definition included in a member with other VTAM definitions. If so, you may want to delete that definition before copying this one to your VTAM library.

These VTAM members may need to be varied active after VTAM is initialized.

Note: If you do not wish to enable the CA-7 TSO/ISPF interface at your site, then delete the IEBCOPY SELECT statement for CA7ISPF in the VTAMDECK member.

NCF Note

For NCF sites, VTAM definitions are also required for each node in the NCF network. If you know what your network configuration will be, see Appendix B, "VTAM and NCF Node Table Definitions." If you do not yet know what your NCF network configuration will be, you can wait until after you have completed the installation testing for CA-7 itself. For NCF2 sites, the CA7VTAM and CA7ISPF members are not required.

Step 17: Perform CA-7 TSO/ISPF Updates

To use the CA-7 TSO/ISPF interface, perform the following steps. If you do not plan to use the TSO/ISPF interface, you can bypass these steps. The required steps are:

1. Run CA-7 SMP USERMOD job UL23311 in your CA-7 Sample JCL library. This replaces the default CA-7 TSO/ISPF CLIST with a copy that has been customized by the CA-7 Stage I SYSGEN.
2. Add a CA-7 option to your ISR@PRIM or ISR@MSTR panel. The selection line should be:

   x,'CMD(CA7PDRVR) NEWAPPL(CA7)'
3. The CA-7 TSO/ISPF interface components were applied to the CA-7 target libraries during the CA-7 SMP APPLY step. These libraries must be added to your site's TSO logon procedure to use the CA-7 TSO/ISPF interface. See the table for specific library updates.

Library	Description
high.level.CAICLIB	CA-7 CLISTs required by the CA-7 TSO/ISPF interface. This library must be concatenated under the TSO Logon procedure SYSPROC DD statement.
high.level.CAIISPP	CA-7 panels required for the CA-7 TSO/ISPF interface. This library must be concatenated under the TSO Logon procedure ISPPLIB DD statement.
high.level.CAIISPT	CA-7 command translation table required by the CA-7 TSO/ISPF interface. This library must be concatenated under the TSO/ISPF Logon procedure ISPTLIB DD statement.
high.level.CAILIB	CA-7 TSO/ISPF panel driver module L2ADDON. This library can be added to ISPLLIB concatenation. Alternatively, the L2ADDON module can reside in the STEPLIB/JOBLIB or a link listed data set rather than on the ISPLLIB if that is better suited to your installation.

Note: See the *CA-7 Interfaces Guide* for a detailed discussion of the CA-7 TSO/ISPF interface.

NCF Note

This step is not needed at NCF2 sites.

Step 18: Set ICMDSECT Options

Use the sample JCL member UL233IZ to apply a USERMOD to module ICMDSECT. (Also check UMODJCL in SAMPJCL.) This USERMOD sets CA-7 system interface options which determine: the CA-7 SMF record indicator byte location, SMF record type support, the user SVC number, batch security options, and other internal control options. This USERMOD zaps the control options into module ICMDSECT based on user-supplied bit settings. The CA-7 communications component (SYSMOD CL233C0) is required prior to applying this USERMOD. See the table below for the bit settings required for a specific option.

The default settings for ICMDSECT are to use SMF type 30 support, to use the last byte of the USER IDENTIFICATION field, and to use SVC number 167 for CA-7. If these defaults are correct for your installation, you do NOT need to apply this USERMOD.

Review the following considerations concerning the ICMDSECT zaps.

1. If SMF type 30 support is not to be used (that is, use type 4, 5, and 20 records instead), zap the ICMDSECT module at offset X'06' to turn off the X'40' bit. For example,

   ```
   VER 06 40
   REP 06 00
   ```

2. CA-7 normally uses the last byte of the 8-byte USER IDENTIFICATION field in the SMF common exit parameter area. (This is *not* the one-word User Communication field.)

   ```
   *** CHECK TO SEE IF THERE IS A CONFLICT ***
   *** WITH THE USAGE OF THIS FIELD.       ***
   ```

   If such a conflict exists, another byte must be selected within the USER IDENTIFICATION field, or the high-order byte of the READER TIME field must be used.

a. If a different byte in the USER IDENTIFICATION field can be used, its offset (relative to zero) is specified by zapping ICMDSECT at offset X'0C' to change that byte from X'07' (which indicates the 8th byte) to the offset of the byte that can be used (X'00' through X'06'). For example,

```
VER 0C 07
REP 0C ??      <-- ?? = desired offset
```

b. If all eight bytes of the USER IDENTIFICATION are being used, CA-7 can use the high-order byte of the READER TIME field. To indicate this, zap ICMDSECT at offset X'07' to change that byte from X'80' to X'20'. Also, any user- or vendor-created SMF records (that is, non-IBM generated) that use the standard SMF job header (like the IBM type 4 and 5 records) must be identified. ICMDSECT must be zapped at offset X'0156' to change the X'00's to those record numbers. They must be in ascending order. Also, all standard IBM record numbers are already noted and should not be zapped into the list. See the following example.

```
VER 07 80                        CHANGE FROM USER ID FIELD
REP 07 20                        TO READER TIME FIELD

VER 156 0000 0000 ..... ..... ADD NON-IBM SMF
REP 156 ???? ???? ..... ..... RECORD NUMBERS
```

ICMDSECT

User modifiable bit settings in ICMDSECT.

Offset		Bit Setting Descriptions
X'05'	X'04'	Do not collect SMF type 15 (X'0F') records
	X'02'	Do not collect SMF type 14 (X'0E') records (default)
X'06'	X'40'	SMF Record Type 30 support (default)
	X'20'	For NCF present
	X'04'	Security checking for U7SVC D= processing
	X'02'	Security SUBMIT checking for batch userids
X'07'	X'80'	Use byte in SMF Userid field (default)
	X'20'	Use byte in SMF Reader time field
	X'02'	Send SMF purge records to Test copy of CA-7 in addition to Production copy
X'08'	X'0Ann'	SVC number (default 167 - X'0AA7')
X'0C'	X'nn'	If SMF Userid field used, specifies the offset into the field for the CA-7 indicator byte (default = X'07')
X'0E'	X'0Ann'	Test system SVC number

NCF Note

If you specified NCF1 or NCF2 as an option during the Stage I SYSGEN, be certain to set the NCF option bit in ICMDSECT.

Step 19: CA-7 USERMODs

Sample JCL members which begin with UL2 are provided to apply specific user modifications to CA-7. Sample JCL member $$INDEX contains a brief description of each of these USERMODs. See "User Exits and Modifications" in the *CA-7 Systems Programmer Guide* for a detailed discussion on system modifications.

The post installation testing requires the use of two sample calendars, SCALyyPE and SCALyy03 (where yy is the current year). To install the two calendars with SMP, the USERMOD UL23301 in SAMPJCL must be run. However, the calendars can be put into CA-7 without SMP. This requires doing the ASM and LKED of the CALENDAR macro. (See USERMOD UL23301 in SAMPJCL for the appropriate CALENDAR macro.)

Note: The member UMODJCL is provided in the SAMPJCL file for installation of the USERMODs. This JCL references the SAMPJCL file and can be used to install the appropriate USERMOD. Change the member name reference in the JCL to point to the specific USERMOD you to wish to install.

If you ran UL23311 as part of Step 17: Perform CA-7 TSO/ISPF Updates, do not repeat it here.

Member UL23301P in JCLLIB generated as part of the SYSGEN process defines two calendars, SCALyyPE and SCALyy03 (where yy is the current year). These calendars are referenced during postinstallation test job CA07N220.

NCF Note

For NCF sites, if you know what your network configuration will be, see Appendix B, "VTAM and NCF Node Table Definitions." If you do not yet know what your NCF network configuration will be, you can wait until after you have completed the installation testing for CA-7 itself.

CA-Panvalet Note

If you choose to receive and apply the optional USERMOD UL2PANV, the CA-Panvalet Load library must be included in the SMP/E procedure CAIL233 using the PANV DD statement. See the *CA-7 Interfaces Guide* for more information on the CA-7/CA-Panvalet interface.

CA-Librarian Note

If you choose to receive and apply the optional USERMOD UL2LIBA, the CA-Librarian Macro library must be included in the SMP/E procedure CAIL233 SYSLIB DD concatenation. See the *CA-7 Interfaces Guide* for more information on the CA-7 CA-Librarian interface.

USS Note

If you wish to use the CA-7 OS/390 Unix System Services (USS) interface, see the *CA-7 Systems Programmer Guide* for information on implementing this interface.

Step 20: Merge the CA-7/API Table

The CA-7/API (Application Programming Interface) is used for communication with CA-7 from the CA-7 WorkStation. This step is only required if this interface will be used.

The Sample JCL library distributed with Unicenter TNG Framework for OS/390 contains member WC20MRG, which is model JCL to merge individual product control tables into the Unicenter TNG Framework for OS/390 Common Services Viewpoint tables. The CA-7/API table that must be merged is CAL2APPL (Application Control Table). This must be merged with the Unicenter TNG Framework for OS/390 Common Services Viewpoint table CA4FAPPL.

Edit WC20MRG or make a copy of it in the CA-7 Sample JCL library. Customize the JOB statement and in-stream JCL procedure variables, if necessary. See the Unicenter TNG Framework for OS/390 documentation for installing Viewpoint tables. Set up an EXEC statement at the bottom of the JCL for CAL2APPL. Because this table will establish an interface with the CA-7 address space, you should use the CA-7 product code (L2) for the PROD= variable.

If you are installing CA-7 into a separate set of SMP target libraries, you need to add the CA-7 load library (CAILIB) to the STEPLIB concatenation for the MERGE PROC step. The CA-7 library should be added AFTER the Unicenter TNG Framework for OS/390 Common Services CAILIB.

The following should be the only EXEC statement at the bottom of the member. (Comment or delete any others.)

```
//L2APPL EXEC WC20MRG,TABLE=APPL,PROD=L2
```

Submit the job and CAREFULLY review the output to verify that the merge process ran successfully. If any of the steps completed with a return code greater than 0, correct the problem and resubmit.

For additional interface information on the CA-7 API, see the *CA-7 Interfaces Guide*.

Note: The table merge output should be directed to the Unicenter TNG Framework for OS/390 Common Services CAILIB so that all product installations share the same common control tables.

NCF Note

This step is not needed at NCF2 sites.

Step 21: Prepare CAIRIM to Initialize CA-7

You must update the CAIRIM parameters to request initialization of CA-7. The PARMLIB DD statement in the CAS9 JCL procedure defines the parameter library and member. The default is library CAI.PPOPTION member CARIMPRM.

Member L233RIM in the CA-7 JCLLIB library contains the CAIRIM initialization statement for CA-7. Copy this statement into your CARIMPRM file in CAI.PPOPTION. If you have additional statements for other CA products, the CA-7 statement should be the last statement in the file.

You may wish to make changes to the auto or user CAIRIM command files; however, CA-7 requires none.

The CAIRIM procedure CAS9 and the PPOPTION members were created during installation of the Unicenter TNG Framework for OS/390 or with another CA product. See the *Unicenter TNG Framework for OS/390 Getting Started* and the *Unicenter TNG Framework for OS/390 Administrator Guide* for detailed information on the CAS9 procedure and CAIRIM parameters.

Also, ensure that you have a CAIRIM initialization statement for CAISSF in the CARIMPRM file. This statement should be present regardless of whether you plan to use external security for CA-7. See Chapter 8, "The Standard Security Facility (CAISSF)" in the *Unicenter TNG Framework for OS/390 Administrator Guide* for detailed information.

CAIRIM must be run on ALL CPUs where ICOM will be executing (CPUs where CA-7 or CA-7 submitted jobs will be running). Ensure that all CPUs have access to the libraries needed for the CAS9 procedure. Also, any CPU that is in the shared spool needs to have CAIRIM run even if no ICOM executes there. This is because of possible JCL conversions that may be done there for CA-7 submitted jobs.

Notes

The CA-7 system interface modules must be accessible when CAIRIM is executed to initialize CA-7. If you installed CA-7 into a separate target load library (CAILIB) than the one used by Unicenter TNG Framework for OS/390, you need to perform one of the following steps:

1. Add the CA-7 target load library (CAILIB) to the STEPLIB concatenation of the CAS9 JCL procedure

   or,

2. Add the CA-7 target load library (CAILIB) to the system link list concatenation.

NCF Note

For NCF sites, there may be an additional parameter on the CA-7 CAIRIM initialization statement. See “Identifying the Host NCF Node” in Appendix C, “VTAM and NCF Node Definitions.”

Step 22: IPL If Necessary

You must update member IEAAPFxx or PROGxx in your SYS1.PARMLIB to grant APF authorization to the following load libraries. Check your current APF list and confirm these libraries are present or add them to the list.

Library Name
CA-7 Load Library (CA-7 target load library)
CA-1 Load Library (if using the CA-7 CA-1 interface)
CA-11 Load Library (if using the CA-7 CA-11 interface)
CAILIB Load Library (common CA APF load library used by CAIRIM)

You may also wish to set up CAIRIM as an automatic started task in COMMNDxx. See the *Unicenter TNG Framework for OS/390 Getting Started* for details.

If you have a facility available that can dynamically add APF entries, an IPL can be avoided. However, be certain to update IEAAPFxx or PROGxx so that they are automatically authorized when you do IPL.

If you do not have a dynamic APF facility, IPL at this time to authorize these libraries.

Remember that CAIRIM (CAS9 procedure) must be run on ALL CPUs where ICOM will be executing; therefore, be certain to check the APF lists for all affected CPUs.

Upgrade Notes:

If you are upgrading from Version 2.7, 2.8, or 2.9, contact CA-7 Technical Support.

If you are upgrading from any version of CA-7, see "Upgrade Step 14: IPL If Necessary" in Chapter 4.

Step 23: Run CAIRIM to Initialize CA-7

At this time you should run CAIRIM to initialize all of the required CA-7 operating system services and intercepts. You must do this before CA-7 may be executed. See the *Unicenter TNG Framework for OS/390 Getting Started* or *Administrator Guide* for instructions on how to initiate CAIRIM.

Note: If you set up CAIRIM to run as a started task at IPL time and you IPLed in the previous step, this does not need to be repeated. Confirm that the messages listed below were issued when CAIRIM ran, indicating CA-7 system modules were initialized cleanly.

Check the system console (or output) for the following messages to indicate that CA-7 has been initialized:

```
CAS9115I - Input: PRODUCT(CA-7) VERSION(L233)
CAL2001I - CA-7 RIM: CA-7 PRODUCTION SYSTEM INITIALIZATION
           COMPLETE. (SSCT=UC07)
CAS9130I - Module L233INIT complete, RC=00
```

If these messages do not appear, check the error messages present and see the appropriate manual for corrective action. Messages beginning with CAS9 may be found in the *CA Message Guide*. Messages beginning with CAL2 may be found in the *CA-7 Message Guide*. If no error messages relating to CA-7 appear, check to ensure that the CA-7 CAIRIM installation parameter was moved to the correct CAIRIM parameter file and member.

Confirm that CAIRIM has run and that CA-7 has been initialized before proceeding to the next step. CAIRIM must be run on all CPUs that will execute an ICOM or that are in the shared spool.

Upgrade Note: If you are upgrading CA-7, see Upgrade Step 15: Run CAIRIM to Initialize CA-7 3.3 in Chapter 4.

Step 24: Execute CA-7 in Batch Mode (Job N220)

The CA-7 JCLLIB created in the Stage I SYSGEN process contains member CA07N220 (the prefix CA07 may have been overridden in the SYSGEN install macros).

Job CA07N220 is a batch execution of CA-7 to define the test job network and maintenance jobs by issuing batch commands that add information in the CA-7 database. The test job network consists of jobs CA07XX01 through CA07XX10. These test jobs reside in the CA-7 JCLLIB library. When CA-7 online is executed, this test job network can be DEMANDed to exercise the CA-7 facilities and ensure that they have been installed correctly.

The maintenance jobs CA07LOGP and CA07LOGS are used by CA-7 to automatically swap and dump log files similar to SMF processing. These should be considered production jobs. CA-7 automatically submits these jobs when a log file becomes full.

Run job CA07N220 and confirm that it has run successfully before proceeding to the next step.

NCF Note This step is not needed at NCF2 sites.

Step 25: Postinstallation Testing

The postinstallation testing process is described in detail in the *CA-7 Systems Programmer Guide* ("Installation Verification" in Chapter 4). Basically, this process involves executing the CA-7 online (job CA07N240 in JCLLIB) and CA-7 ICOM (job CA07N500 in JCLLIB). With both CA-7 and ICOM running, you can log on to CA-7 and DEMAND the CA-7 Installation Verification job (CA07SVCT), and also DEMAND the test job network (jobs CA07XX01 and CA07XX08). These jobs exercise the various submission, triggering, and tracking functions of CA-7 to confirm that the installation has been successful.

At this time, see the *CA-7 Systems Programmer Guide* ("Installation Verification" in Chapter 4). Perform the steps described there and confirm the installation has been successful.

Note: Postinstallation testing uses the default CA-7 internal security definitions. CA-7 can use its own internal security features, or it can interface with CA-ACF2, CA-Top Secret, and RACF. See the *CA-7 Security Guide* for instructions on how to customize CA-7 security for your site.

If the interface to the full CA-JCLCheck product is desired, complete this task and then see the *CA-7 System Programmer Guide* for details on enabling the interface. If you are using the CA-JCLCheck common component distributed on the CA-7 tape, no steps are required to enable the interface.

NCF Note

See Appendix C, “VTAM and NCF Node Table Definitions” for information on completing the installation and implementation of NCF. Also, see the *CA-7 Interfaces Guide* for additional implementation considerations.

Step 26: Load Online Documentation Files (Optional)

The CA-7 distribution tape contains copies of the product documentation in both IBM BookManager and Adobe Acrobat formats. Computer Associates also provides online documentation files on a CD roughly three times a year.

For information on unloading and using the Adobe Acrobat files, see member L233PDF in the CA-7 SAMPJCL library.

CA-7 provides a bookshelf, index, and book files that can be read by IBM's BookManager family of products. The files may be loaded from the installation tape to MVS. If desired, IBM provides procedures for moving the files to other platforms.

Tailor and run the SAMPJCL job L233BKM. Make sure that you change all occurrences of "CAI.CA7" to your BookManager high-level qualifier, including the occurrences in the instream data. Make sure that you get a zero return code from all steps.

The BookManager Read for MVS can now open the BookManager bookshelf.

You may download the books, bookshelf, and book index to a workstation and use BookManager Read for DOS, Windows, or OS/2. You may also use BookManager Library Reader for DOS, Windows, or OS/2. BookManager Library Reader is provided to Computer Associates clients on the CA MVS Systems Library Documentation CD.

All of the files must be downloaded to a single directory. The type of download differs for each file type.

Book files and the index must be downloaded WITHOUT converting EBCDIC to ASCII. For example, if you are using IND$FILE to download the files, do NOT specify the ASCII or CRLF keywords.

The bookshelf file must be converted from EBCDIC to ASCII. IND$FILE users MUST specify the ASCII and CRLF keywords.

The files must be downloaded to the appropriate names. Use the following table to determine the correct file names, where "prefix" is the BookManager prefix (BMGRPFX) you specified in Step 2: Load CA-7 Sample JCL Library.

MVS Name	Description
prefix.CAC0733O.BKINDEX	CAC0733O.BKI Index
prefix.CAC0733O.BKSHELF	CAC0733O.BKS (convert file to ASCII)
prefix.C0733OC.BOOK	C0733OC.BOO *CA-7 Commands Guide*
prefix.C0733OD.BOOK	C0733OD.BOO *CA-7 Database Maintenance Guide*
prefix.C0733OF.BOOK	C0733OF.BOO *CA-7 Interfaces Guide*
prefix.C0733OH.BOOK	C0733OH.BOO *CA-7 Personal Scheduling Reference Guide*
prefix.C0733OK.BOOK	C0733OK.BOO *CA-7 Primer*
prefix.C0733OM.BOOK	C0733OM.BOO *CA-7 Message Guide*
prefix.C0733OR.BOOK	C0733OR.BOO *CA-7 Reports Guide*
prefix.C0733OS.BOOK	C0733OS.BOO *CA-7 Systems Programmer Guide*
prefix.C0733OV.BOOK	C0733OV.BOO *CA-7 Reference Summary*
prefix.C0733OZ.BOOK	C0733OZ.BOO *CA-7 Security Guide*

Chapter

4

Upgrade Steps

The procedures described in this chapter are designed to upgrade your CA-7 system to Version 3.3 from a previous version. It does not directly address the implementation of the new features available with Version 3.3. See “Product Changes” in Chapter 1 or at the beginning of any CA-7 Version 3.3 guide for a description of the enhancements incorporated in this version.

The primary focus of this chapter is an upgrade from Version 3.2 to 3.3; however, information is also supplied for those who are upgrading from Version 2.7, 2.8, 2.9, 3.0, or 3.1. If you are upgrading from one of the pre-3.0 versions, contact CA-7 Technical Support. Also, there are some special upgrade steps directed toward pre-3.0 upgrades and notes in the other steps you should pay special attention to. You should also see the *CA-7 Security Guide* for complete details on any changes to how CA-7 security is handled. Version 3.0 introduced these changes.

The upgrade of CA-7 will require you to perform many of the same steps as the installation process (allocating SMP data sets, receiving CA-7, and so forth). You are also required to reapply any local modifications you have made to CA-7 using SMP USERMODs. The main difference between a full installation and an upgrade of CA-7 is that you can bring forward most of your existing CA-7 files and your CA-7 initialization file with just a few modifications.

The best upgrade path is to fully install Version 3.3 on a test system. This gives you a chance to perform comprehensive tests and to exercise some of the new features available with Version 3.3 in a nonproduction environment. Some of the new features may require considerable tailoring on your part. You can then upgrade your production system with a minimum of effort. If you choose to perform a full installation, look at the special "Upgrade Notes" included in the installation steps.

NCF Note

If you are upgrading an NCF complex, the NCF1 sites (where CA-7 is executed) should be upgraded to the new version before any NCF2 sites (where CA-7 is not executed) are upgraded.

Data Set Changes

Version 3.3

The conversion to Version 3.3 from any prior version affects the following files:

- CA-7 Database Files

  With Version 3.3, some of the record formats in the database were changed. One of the upgrade steps is to convert your existing database records into the Version 3.3 format.

- CA-7 Queue Files

  With Version 3.3, some of the record formats in the CA-7 Queues were changed. One of the upgrade steps is to convert your existing queue records into the Version 3.3 format.

- CA-7 Cross-Platform Scheduling Checkpoint File

  With Version 3.3, the structure and format of the CA-7 Cross-Platform Scheduling Checkpoint file has changed. One of the upgrade steps is to create new Version 3.3 CA-7 Cross-Platform Checkpoint files.

- CA-7 Initialization File

  The CA-7 initialization file has changed. There are several new keywords that have been added. You need to make changes to your initialization file to implement some of the new features available with Version 3.3.

Version 3.2

If you are upgrading from Version 3.1, you should be aware of the following changes introduced with Version 3.2:

- CA-7 Automated Recovery Facility (ARF) database

  The CA-7 Automated Recovery Facility (ARF) feature requires a new VSAM data set. This data set is required to run Version 3.3 only if you wish to use ARF features at this time.

Version 3.1

If you are upgrading from Version 3.0, you should be aware of the following changes introduced with Version 3.1:

- CA-7 Virtual Resource Management (VRM) Database

  The CA-7 Virtual Resource Management (VRM) feature requires a new VSAM data set. This data set is required to run Version 3.1 or higher regardless of whether you wish to use VRM features at this time.

Other Changes

Beginning with Version 3.1, the execution of the batch terminal interface (BTI) no longer requires the use of a second step for the SASSBEND program. This second step of SASSBEND must **NOT** be done. If this step is not removed from old copies of SASSBSTR JCL, then it is possible that concurrent executions may cause failures.

For external security use, there are three panels whose resource names changed between Version 3.1 and Version 3.2:

Panel QM.2-X was L2QM2X and is now L2QM2

Panel QM.3-X was L2QM3X and is now L2QM3

Panel QM.4-X was L2QM4X and is now L2QM4

General Upgrade Considerations

The following considerations are general in nature and can be applied to any upgrade situation.

1. Make sure you have a backup of **everything**. You never know when you will need it.
2. Make notes in the margin of this guide and keep all of your job listings. Sooner or later you will need them, too.
3. Read through ALL of the steps before running any jobs. Thinking the upgrade through before beginning gives you the best chance of everything going smoothly.

Upgrade Checklist

The following list summarizes the steps involved to upgrade CA-7 to Version 3.3. Use it as a checklist during the actual upgrade process.

__ 1. Load CA-7 Version 3.3 Sample JCL Library

__ 2. Install/Upgrade Unicenter TNG Framework for OS/390

__ 3. SMP Install CA-7 Version 3.3 Functions

__ 4. Create CA-7 Version 3.3 JCLLIB Library

__ 5. Allocate and Initialize CA-7 ARF/VRM Database

__ 6. Copy Help to CA-7 Help Data Set

__ 7. Pre-Version 3.0 Upgrade Steps

__ 8. Convert CA-7 Database to 3.0/3.3 Format (if needed)

__ 9. Copy CA-7 Version 3.3 JCL Procedures

__ 10. Apply CA-7 USERMODs

__ 11. Merge the CA-7/API Table

__ 12. Update CA-7 Initialization File

__ 13. Update CAIRIM Parameters for CA-7

__ 14. IPL (If Necessary)

__ 15. Run CAIRIM to Initialize CA-7 3.3

__ 16. Start Version 3.3 Versions of CA-7 and ICOM

__ 17. Load Online Documentation Files (Optional)

Step 1: Load CA-7 Version 3.3 Sample JCL Library

The CA-7 Version 3.3 distribution tape contains a Sample JCL library for the CA-7 installation/upgrade process. This library is file 9 on the tape, DSN=CAI.SAMPJCL, and it is in IEBCOPY unloaded format.

You can use member L232SAMP in your Version 3.2 CA-7 Sample JCL library to unload the new file. Change the VOL=SER= to L2yymm (where yymm is the current genlevel), and change the SYSUT2 DSN so that it does not conflict with your Version 3.2 Sample JCL library.

If your Version 3.2 CA-7 Sample JCL library is not available, use the following JCL as a model to load the Version 3.3 Sample JCL file to disk.

```
//L233SAMP JOB (ACCTINFO),PGMR,CLASS=A,MSGCLASS=A,REGION=2M
//*
//*********************************************************************
//* PROVIDE A VALID JOB CARD AND ANY JOBPARM/ROUTE STATEMENTS
//* NEEDED FOR YOUR SYSTEM.  ALSO, MAKE CHANGES NOTED BELOW.
//*********************************************************************
//*
//IEBCOPY  EXEC PGM=IEBCOPY
//SYSIN    DD DUMMY
//SYSPRINT DD SYSOUT=A
//SYSUT1   DD DSN=CAI.SAMPJCL,
//            DISP=OLD,
//            UNIT=tape,                      <--your tape unit name
//            VOL=SER=L2yymm,                 <--CA-7 tape volser
//            LABEL=(9,SL,EXPDT=98000)
//SYSUT2   DD DSN=cai.ca7.SAMPJCL,            <--your data set name
//            DISP=(NEW,CATLG,DELETE),
//            UNIT=sysda,                     <--your DASD unit name
//            VOL=SER=xxxxxx,          <--your DASD volume serial #
//            SPACE=(3120,(585,65,42)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSUT3   DD UNIT=sysda,SPACE=(CYL,(1,1))  <--your DASD work unit
                                                        name
//SYSUT4   DD UNIT=sysda,SPACE=(CYL,(1,1))  <--your DASD work unit
                                                        name
```

Once this job has ended, your library contains the JCL needed to proceed with the upgrade of CA-7. See member $$INDEX for the index of the CA-7 members in the Sample JCL library.

The CA-7 Sample JCL library contains two members specifically for upgrade. Member $UNOTES contains any upgrade considerations not included in this guide. Member $BACKOUT contains instructions and considerations for falling back from Version 3.3 to your previous version.

Step 2: Install/Upgrade Unicenter TNG Framework for OS/390

The installation of CA-7 requires that Computer Associates Unicenter TNG Framework for OS/390 Common Services CAIRIM, CAISSF (a subcomponent of CAIRIM), and CA LMP be installed on your system. You should also include CAIENF and CAICCI if you are planning to use any cross-platform communication facilities. You should also include CA-Earl and CA-SRAM if you wish to produce the standard CA-7 reports using CA-Earl facilities. These services may have already been installed with another CA product. Check your system to see if these services have already been installed.

These services are distributed on the Unicenter TNG Framework for OS/390 tape that should be included in your CA-7 distribution package. See the *Unicenter TNG Framework for OS/390 Getting Started* for specific requirements and steps to install or upgrade these services on your system.

If you need to install or upgrade these services, do so at this point keeping in mind the following considerations:

- Some of the Common CA data sets, libraries, and JCL procedures allocated and created during the Unicenter TNG Framework for OS/390 installation/upgrade are used during the CA-7 upgrade process.
- You need to add a CAIRIM initialization control statement for CAISSF. See the Standard Security Facility (CAISSF) in the *Unicenter TNG Framework for OS/390 Administrator Guide*.
- If you determine that an IPL is required to activate the upgraded versions of CAIRIM and CAISSF, do not do so yet. Wait until the CA-7 Upgrade Step 14: IPL if Necessary.

- Do not run the CAIRIM started task yet. You are directed to do this in the latter stages of the CA-7 upgrade process (see Upgrade Step 15: Run CAIRIM to Initialize CA-7 3.3).

Step 3: SMP Install CA-7 Version 3.3 Functions

To upgrade your CA-7 to Version 3.3, you need to perform the same SMP tasks required for a new installation.

Perform Installation Tasks 4 through 10. The CA-7 Version 3.3 Sample JCL Library loaded in Upgrade Step 1: Load CA-7 Version 3.3 Sample JCL Library is required. These tasks are listed below so that you can check them off as they are completed:

Installation Step 4: Allocate the Distribution Libraries

Installation Step 5: Allocate SMP/E Libraries

Installation Step 6: Allocate Target Libraries

Installation Step 7: Customize SMP/E JCL Procedure

Installation Step 8: SMP RECEIVE

Installation Step 9: SMP APPLY

Installation Step 10: SMP ACCEPT

Step 4: Create CA-7 Version 3.3 JCLLIB Library

You need to generate a new CA-7 JCLLIB library for Version 3.3. Some of the members from your old JCLLIB are carried forward in subsequent steps. However, there are too many additions, deletions, and changes to the 3.3 JCLLIB to try to upgrade your current JCLLIB as is.

The best way to perform a Version 3.3 SYSGEN is to modify your existing 3.0, 3.1, or 3.2 SYSGEN macros. You should be able to find these in member L230GEN in your Version 3.0 CA-7 SAMPJCL, L231GEN in your Version 3.1 CA-7 SAMPJCL library, or L232GEN in your Version 3.2 CA-7 SAMPJCL library. Create a copy of the previous SYSGEN job in the CA-7 3.3 SAMPJCL file renaming it CA7GEN. Delete ALL of the JCL surrounding the CA-7 macros (they begin immediately after the **//SYSIN DD *** statement. Use the guidelines below to update the SYSGEN macros. If a previous SYSGEN job cannot be located, use member L233GEN in the CA-7 3.3 SAMPJCL file to create one.

Once you have coded the 3.3 SYSGEN macros, edit member L233UGEN in the 3.3 Sample JCL library and follow the directions in the comment box. Run L233UGEN job to create the Stage I output (member STAGE1 in the 3.3 Sample JCL library).

The output from the CA-7 Stage I SYSGEN job is member STAGE1 in the 3.3 Sample JCL Library. It is a job stream used to create the CA-7 3.3 JCLLIB. The default job name is CA07N000. If you need to change specific data set names, you can do so with global change commands. BE VERY CAREFUL WHEN MAKING GLOBAL CHANGES!! Confirm the data set name of the CA-7 JCLLIB to be created is different from your existing 3.0, 3.1, or 3.2 JCLLIB (JCLLIB DD in the first job step). Run the CA07N000 job to create the 3.3 JCLLIB.

Notes

Use the following guidelines to update your SYSGEN macros. See Appendix A, "Stage I SYSGEN Macros," for a full explanation of them.

1. U7PARMS macro -

   You should pay special attention to these three keywords. Use the TARGET= keyword to specify the data set name prefix of the SMP target libraries you installed the CA-7 distribution elements into (CAIMAC, CAISRC, and so forth). If you are using the CA-7 Network Communications Facility (NCF), you can use one of the NCFx= keywords. The format is NCF1=YES or NCF2=YES depending on whether you are upgrading at an NCF1 or NCF2 site. If you are not using NCF, do not specify either of these keywords.

2. U7PNAMES macro -

   You can use the U7PNAMES macro to specify a different prefix for each procedure name (though we suggest you keep the default names unless they conflict with your local standards). The keywords to override the names for the new procedures are:

ARK= JCL procedure to back up the new CA-7 ARF database

ARL= JCL procedure to reload the new CA-7 ARF database from backup. If you wish all of the CA-7 JCL procedures to have different names from the previous procedures, override the names with the PREFIX= keyword.

3. U7SPACE and U7VOL macros -

   A keyword is available for each of these macros to control the size and placement of the new Automated Recovery Facility (ARF) database file. The keyword is ARF= for both macros.

4. U7IFACE macro -

   Because SMP now controls the installation of CA-7, a number of keywords previously used with this macro have become obsolete. If specified, the following keywords generate an assembly message (MNOTE) indicating that the keyword is outdated and is being ignored. The condition code set for these messages is 0 (zero), so they have no effect on the outcome of the SYSGEN. The outdated keywords are: ISPFCMDS=, ISPPLIB=, ISPTLIB=, ISPLLIB=, U01VER=, U01MAC=, U11VER=, and U11MAC=.

5. U7GEN macro -

   There is a keyword to specify a PDS data set to be used with the CA-Driver enhancement. CA-Driver is used to perform parameter substitution in JCL submitted by CA-7. The keyword is DRIVER='data.set.name'. If specified, a DD statement is generated in the CA-7 Online JCL procedure for it with the DDNAME CARPROC. See the *CA-7 Systems Programmer Guide* "Installation Requirements" for information about CA-Driver requirements.

   If this is a CA-7 TEST system, specify TESTSYS=YES.

Step 5: Allocate and Initialize CA-7 ARF/VRM Database

If you are upgrading from a version prior to Version 3.2, you need to allocate the ARF file if you wish to use the CA-7 Automated Recovery Facility.

Member CA07N712 in the Version 3.3 JCLLIB library contains the JCL needed to allocate and initialize the CA-7 Automated Recovery Facility (ARF) VSAM file. This file is only needed if you wish to use ARF facilities.

If you are upgrading from a version prior to Version 3.1, you MUST also perform the following task.

Member CA07N710 in the 3.3 JCLLIB library contains the JCL needed to allocate and initialize the CA-7 Virtual Resource Management (VRM) VSAM file. This file is required to run CA-7 3.3.

Run CA07N710 and confirm that it has run successfully before proceeding to the next step.

NCF Note

NCF2 sites do not need this step.

Step 6: Copy Help to CA-7 Help Data Set

Member CA07N720 in the Version 3.3 JCLLIB library contains the JCL needed to copy the Version 3.3 help members from the CA-7 macro library (CAIMAC) to your CA-7 help data set.

Run CA07N720 and confirm that it has run successfully before proceeding to the next step.

NCF Note

NCF2 sites do not need this step.

Step 7: Pre-Version 3.0 Upgrade Steps

If you are upgrading from Version 2.7, 2.8, or 2.9, see the CA-7 SAMPJCL member $UNOTES. Perform the pre-Version 3.0 upgrade steps described there before continuing to the next upgrade step.

Step 8: Convert CA-7 Data to 3.3 Format

With Version 3.3, CA-7 now tracks event times (such as job completion) down to the hundredth of second. Since previous versions only kept times down to the minute, it is necessary to reformat time fields in portions of the CA-7 database and queue records to be compatible with Version 3.3. Also, the format of the checkpoint data for the CA-7 Cross-Platform Tracking function has been updated with Version 3.3.

1. Database Reformatting

   The SASS33DB utility copies sequential backups of CA-7 database files and converts data formats creating sequential files that can be used to reload the CA-7 database.

   Member L2UDB331 in the CA-7 3.3 Sample JCL library contains model JCL to convert an IDCAMS database backup. Member L2UDB332 contains model JCL to convert a SASSBK00 database backup.

   Note: You should run ONLY ONE of the above procedures (L2UDB331 or L2UDB332).

In the unlikely event you need to fall back to your previous version of CA-7, members L2UDB321 and L2UDB322 in the CA-7 3.3 Sample JCL library contain model JCL to convert a 3.3 database backup to the pre-3.3 record format.

2. Queue Reformatting

   The SASS33QC utility copies a sequential backup of the CA-7 queues and creates a sequential file that can be used to reload CA-7 queues using a TYPE=MOVQ CA-7 restart.

   Member L2UTQ33 in the CA-7 3.3 Sample JCL library contains model JCL to convert the CA-7 queues.

   After all other upgrade changes have been made, restart CA-7 using TYPE=MOVQ. The UCC7QDMP DD statement should see the Version 3.3 Queue Dump Dataset created by the SASS33QC utility.

   Note: In the unlikely event you need to fall back to your previous version of CA-7, member L2UTQ32 in the CA-7 3.3 Sample JCL library contains model JCL to convert a 3.3 Queue backup to the pre-3.3 record format.

3. CA-7 Cross-Platform Tracking Checkpoint

   In Version 3.2 the Cross-Platform PROFILE PDS was used to both specify cross-platform scheduling options, and to hold cross-platform tracking checkpoint data. With Version 3.3 the cross-platform tracking checkpoint data is now kept in a separate checkpoint file used by the CA-7 Cross-Platform Tracker (XTRK).

   The CAL2XT33 utility creates a Version 3.3 Cross-Platform Checkpoint file from information in an existing Cross-Platform PROFILE PDS. Member L2UXPS32 in the CA-7 3.3 Sample JCL library contains model JCL to convert cross-platform tracking checkpoint data.

   Note: The CAL2XT33 utility must be run for each system where the CA-7 Cross-Platform Tracker (XTRK) will be executed. See Cross-Platform Tracking in the *CA-7 Interfaces Guide* for more information.

Step 9: Copy CA-7 Version 3.3 JCL Procedures

The CA-7 3.3 JCLLIB library created in the previous step contains member CA07N020. This job copies the new CA-7 JCL procedures from JCLLIB to a user or system JCL PROCLIB. If you are still using the previous version of CA-7, be careful not to overlay those PROCs yet. If a conflict exists, copy them to a separate PROCLIB that you can use for 3.3 testing. If this is not possible, create a new N020DECK member that changes the PROC names as they are being copied and reference the alternate names until you are ready to switch 3.3 to production status.

Note: If you are using the CA-7/CA-11 interface, then you may also need the CA11RMS PROC in the CA-11 SAMPJCL data set.

Step 10: Apply CA-7 USERMODs

Since CA-7 is controlled by SMP, your local modifications to CA-7 need to be applied using USERMODs. Perform installation tasks 18 and 19. The CA-7 Version 3.3 sample JCL library loaded in Upgrade Step 1: Load CA-7 Version 3.3 Sample JCL Library is required. These tasks are listed below so that you can check them off as they are completed:

Installation Task 18: Set ICMDSECT Options

Installation Task 19: CA-7 USERMODs

If the External Job Model Queue Record Table (SASSEXTT) is used, it must be reassembled and link edited to conform to Version 3.3 queue format.

With Version 3.1 and higher, a number of new CA-7 exit points have been established and changes to existing exit capabilities. If you are upgrading from a CA-7 Version prior to 3.0, you should be aware that the parameter lists for most CA-7 exits (SASSXX..) were changed with Version 3.0. In many cases these exits may no longer be required if you choose to use the external security features now incorporated in CA-7. See Chapter 9, "User Exits and Modifications," in the *CA-7 Systems Programmer Guide* for information regarding CA-7 exits.

NCF Note

If you are upgrading an NCF1 or NCF2 site, be certain to apply the USERMOD for your NCF node table. The format of the NCF node table was enhanced with Version 3.1. However, no changes are required to allow your old node tables to function with the new version. See Appendix C, "VTAM and NCF Node Table Definitions," for a discussion of the Version 3.3 node table.

CA-Panvalet Note

If you choose to receive and apply the optional USERMOD UL2PANV, the CA-Panvalet Load library must be included in the SMP/E procedure CAIL233 using the PANV DD statement. See the *CA-7 Interfaces Guide* for more information on the CA-7/CA-Panvalet interface.

CA-Librarian Note

If you choose to receive and apply the optional USERMOD UL2LIBA, the CA-Librarian Macro library must be included in the SMP/E procedure CAIL233 SYSLIB DD concatenation. See the *CA-7 Interfaces Guide* for more information on the CA-7/CA-Librarian interface.

USS Note

If you wish to use the CA-7 OS/390 Unix System Services (USS) interface, see the *CA-7 Systems Programmer Guide* for information on implementing this interface.

Step 11: Merge the CA-7/API Table

The CA-7/API (Application Programming Interface) is used for communication with CA-7 from Unicenter TNG. This step is only required if you plan to use one of these interfaces. Also, if you have already installed the API interface for CA-7 at the Version 3.0 or 3.1 level, the CA-7/API Table has already been merged and does not need to be repeated.

Perform Installation Step 20, Merge the CA-7/API Table.

NCF Note

NCF2 sites do not need this step.

Step 12: Update CA-7 Initialization File

Several changes need to be made to your CA-7 initialization file. Copy your existing CA-7 initialization file into the 3.3 JCLLIB library created above and make modifications to it there. See the *CA-7 Systems Programmer Guide* "Initialization" chapter for a full discussion of these initialization file statements and keywords.

The initialization file changes from 3.2 to 3.3 are:

1. CCI terminal definitions - support for new terminal type (CCI) used for the CA-7 CCI interface (GROUP, LINE and TERM statements).
2. SECURITY statement - support EXTERNAL=CALENDAR and new BYPSEC options (see *CA-7 Security Guide*).
3. SVCNO statement - support Cross-Platform Router initial trace code setting (XPSTRC=).
4. FORMAT statement - support ERST formatting for Scratch and DQTQ queues on VIO devices.
5. OPTIONS statement additions:
   a. CPM= to activate Critical Path Management support
   b. DPROCCOM= to set CA-Driver Procedure comment option
   c. INITCASE= to activate CA-7 Mixed Case Editor support
   d. JOBDEL= to set DB.1 DELETE function interpretation
   e. LATEPROMPT= to override Job Prompt=NO interpretation
   f. MAXRINGSZ= to set /FETCH command save limit
   g. VRMDD= to activate VRM device definition facility

The initialization file changes from 3.1 to 3.2 are:

1. RESIDENT statement - new keyword for symbolic JCL libraries (JCLDEFS=).
2. RESTART statement - new ARF = keyword for the Automated Recovery Facility, and new keywords for jobs/step completion WTOS (WTO=, WTOSTEP=, and ROUTCDE= keywords).
3. JCL statements - support for new symbolic JCL libraries.

4. TRX terminal definitions - support for new terminal type (TRX) used by ARF.
5. VRMOPT statement - new statement for VRM related options.
6. OPTIONS statement - new keywords for various options (AUTOREQ=, EXPDTCHK=, PROPDSNU=, RLOGBDEF= keywords).
7. SECURITY statement - new keyword for LRLOG command UID security (RLOGUID=).

The initialization file changes from 3.0 to 3.1 are:

1. DBASE statement - new RSRC= keyword for Virtual Resource Management.
2. SECURITY statement - new keywords for External UID Resource control.
3. New OPTIONS statement - sets various new processing options for CA-7.
4. New NETMAN statement - sets options for the CA-7 interface to Problem Management Systems.
5. JCL statement - change/add CA-7 JCLLIB.

The CA-7 installation process now automatically defines the CA-7 JCLLIB as JCL data set index 200. Change the data set name to reflect the 3.3 JCLLIB. If you do not already have a JCL statement for JCLLIB, add one at this time.

If you have added special jobs to your old CA-7 JCLLIB, you can copy them to the new 3.3 JCLLIB at this time. Be certain to check each one to ensure it references the 3.3 JCL procedure names and CA-7 target data sets (CAILIB, CAIMAC, and so forth).

Also, if you are using the CA-7 TSO/ISPF interface, you should review Installation Step 17, Perform CA-7 TSO/ISPF Updates.

NCF Note

NCF2 sites do not need this step.

Step 13: Update CAIRIM Parameters for CA-7

The CA-7 initialization statement in the CAIRIM parameter file must be updated to request initialization of the new version of the CA-7 system interfaces. The PARMLIB DD statement in the CAS9 JCL procedure defines the CAIRIM parameter library and member. The default is library CAI.PPOPTION member CARIMPRM.

Member L233RIM in the 3.3 CA-7 Sample JCL library contains the current CAIRIM initialization statement for CA-7. Copy this statement into your CARIMPRM file REPLACING the existing CA-7 initialization statement. There should only be **one** parameter statement for CA-7 in the CAIRIM parameter file, and it should be the **last** statement in the file.

If you are using the CAIRIM automatic commands feature to start CA-7, ICOM, and NCF, be certain the Version 3.3 versions will be executed.

Also, ensure that you have a CAIRIM initialization statement for CAISSF in the CARIMPRM file. This statement should be present *regardless* of whether you plan to use external security for CA-7. See "The Standard Security Facility (CAISSF)" in the *Unicenter TNG Framework for OS/390 Administrator Guide* for detailed information.

Notes

The CA-7 system interface modules must be accessible when CAIRIM is executed to initialize CA-7. If you installed CA-7 into a separate target load library (CAILIB) than the one used by Unicenter TNG Framework for OS/390, you need to perform one of the following steps:

1. Add the CA-7 target load library (CAILIB) to the STEPLIB concatenation of the CAS9 JCL procedure;

   or,

2. Add the CA-7 target load library (CAILIB) to the system link list concatenation.

NCF Note

For NCF2 sites, there may be an additional parameter on the CA-7 CAIRIM initialization statement. See Identifying the Host NCF Node in Appendix C, “VTAM and NCF Node Table Definitions.”

Step 14: IPL If Necessary

If you upgraded CAIRIM and CAISSF in Upgrade Step 2: Install/Upgrade Unicenter TNG Framework for OS/390, an IPL may be required to activate the upgrade. See the *Unicenter TNG Framework for OS/390 Getting Started*.

Also, CA-7 Version 3.3 **requires** that the CA-7 load library (CAILIB) and any other load libraries in the CA-7 STEPLIB DD concatenation be APF-authorized.

Edit your SYS1.PARMLIB and confirm/add the following entries to member IEAAPFxx or PROGxx:

- CA-7 3.3 Load Library (Target CAILIB from SMP installation)
- CAILIB Load Library (Common CA APF Load library used by CAIRIM)
- CA-1 Load Library (if using the CA-7 CA-1 interface)
- CA-11 Load Library (if using the CA-7 CA-11 interface)

If you have a facility available that can dynamically add APF entries, an IPL can be avoided. However, be certain to update your SYS1.PARMLIB so that these additions are engaged when you do IPL. Also, read through the next step and consider the implications of avoiding an IPL. It may be easier to IPL than to avoid it, depending on your circumstances.

Step 15: Run CAIRIM to Initialize CA-7 3.3

Run CAIRIM to initialize the CA-7 3.3 system interfaces. If you IPLed in the previous step and CAIRIM ran automatically, you should get the same initialization messages described in Installation Step 23, Run CAIRIM to Initialize CA-7. If you IPLed but CAIRIM has not yet run, execute it at this time. If the CA-7 Version 3.3 system interfaces initialized without errors, continue to the next upgrade step.

If you did not IPL in the previous step, you need to shut down CA-7, ICOM, and NCF (if present) as if you were going to IPL, and then perform a CAIRIM reinitialization of CA-7.

Perform the following steps:

1. Create a new member L233RINT in your CAI.PPOPTION library. Copy the CA-7 and CAISSF parameter from L233RIM in the 3.3 Sample JCL library. Add PARM(REINIT) at the end of the statement. The resulting statements should be:

   ```
   PRODUCT(CAISSF) VERSION(S910) INIT(S910INIT)
   PRODUCT(CA-7) VERSION(L233) PARM(REINIT)
   ```

2. Prior to shutting down CA-7 or ICOM, perform the following steps:

   a. Schedule scan should be turned off so that no jobs are brought into the system.

   b. The CA-7 LOG should be dumped. Either do a /SWAP just before shutting down or run the log dump job immediately after shutting down (CA07LOGP/S).

   c. **All** jobs submitted by CA-7 should run to completion and be allowed to go through CA-7 job completion processing before ICOM is stopped. Also, if possible quiesce the CA-7 queues.

   Note: The tracking for any CA-7 submitted jobs which have not gone through CA-7 job completion processing are **lost** when CAIRIM runs to upgrade the CA-7 system interfaces.

3. Shut down CA-7, ICOM and NCF (if present).

4. Run CAIRIM using L233RINT as the CAIRIM parameter file:

   ```
   START CAS9,RIMPARM=L233RINT
   ```

   You should receive the following messages:

   ```
   MODULE S910INIT COMPLETE, RC=00
   CAS9115I - INPUT: PRODUCT(CA-7) VERSION(L233) PARM(REINIT)
   CAL2025I CA-7 RIM: PREVIOUS CA-7 RELEASE x.x IS CURRENTLY
                      INSTALLED.
   CAL2026I CA-7 RIM: PREV RELEASE (x.x) SUPERSEDED BY NEW
                       RELEASE (3.3).
   CAL2004I CA-7 RIM: REINIT PARM ACCEPTED. CA-7 WILL BE
                      INITIALIZED.
   CAL2005I CA-7 RIM: ***** ATTN: CA-7 COLD REINIT IN PROGRESS.
   CAL2004I CA-7 RIM: CA-7 PRODUCTION SYSTEM INITIALIZATION
                       COMPLETE.(SSCT=UC07)
   CAS9130I - MODULE L233INIT COMPLETE, RC=00
   ```

   Note: The x.x should be the old version of CA-7 that you are upgrading.

If these messages do not appear, check the error messages present and see the appropriate manual for corrective action. Messages beginning with CAS9 may be found in the *CA Message Guide*. Messages beginning with CAL2 may be found in the *CA-7 Message Guide*. If no error messages relating to CA-7 appear, check to ensure that the CA-7 CAIRIM installation parameter was moved to the correct CAIRIM parameter file and member.

Confirm that CAIRIM has run and that CA-7 has been initialized before proceeding to the next step. CAIRIM must be run on all CPUs that will execute an ICOM.

Step 16: Start Version 3.3 Versions CA-7 and ICOM

The Version 3.3 copies of CA-7 and ICOM can now be started. These tasks may have been started automatically when CAIRIM ran. If you are using CA-7 NCF, you can also start NCF (be certain you are using the CA-7 Version 3.3 Load library).

You should perform the postinstallation tests described in Chapter 4 of the *CA-7 Systems Programmer Guide* before running any of your production workload.

Step 17: Load Online Documentation Files (Optional)

See Installation Step 26, Load Online Documentation Files. If desired, follow the directions to unload and set up the CA-7 online documentation

Chapter

5

Applying Maintenance

The following steps provided detailed instructions for applying maintenance to CA-7 from a standard maintenance tape.

Maintenance Steps

Step 1

Read the CA-7 Maintenance Cover Letter which accompanies the tape.

This letter is distributed as a PIB (Product Information Bulletin) and is published as such CA-TCC. This letter may include information about the maintenance on the tape as well as information of general interest about CA-7.

You should create a backup of your CA-7 SAMPJCL library before refreshing it from the maintenance tape.

Step 2

Ensure all prior maintenance is completed.

If you have not completed applying maintenance for a previous level of CA-7, you must complete that before continuing this procedure. Attempting to install a new maintenance level before completing prior levels can produce very unpredictable results.

Step 3

Customize the SMP procedure.

Action: Customize the SMP procedure CAIL233 from your procedure library.

During the installation of CA-7 Release 3.3, an SMP procedure was selected and customized. If you have that SMP procedure available, then this step is not required.

To re-create the CAIL233 procedure, follow the instructions presented in Installation Step 7: Customize SMP/E JCL Procedure. Keep in mind that the same SMP procedure used during installation must be used during maintenance.

This procedure is used in the subsequent steps.

Step 4

Edit the JCL to exclude previously applied SYSMODs.

Since the PTF tapes are cumulative (that is, these tapes contain all the latest replacement SMP elements since the base release), you may have already applied some of them to your libraries.

This is an optional step which allows you to exclude those PTFs (SMP element replacements) already processed from previous CA-7 maintenance cycles. If this is your first CA-7 maintenance tape to process, skip to the next step.

At this point you have two choices for installing the maintenance:

- Process all the PTFs present regardless of whether some of them have already been RECEIVEd, APPLYed, and ACCEPTed, thus re-installing all maintenance since base level. Here users have to specify REDO on the APPLY and ACCEPT statements.
- Process only the subset of PTFs necessary to bring you to the current level.

However, if you are not sure whether previous cycles are complete, process all the PTF SYSMODs present. Only with all the PTFs up to and including the current level will components perform properly.

If you have chosen to process only the PTFs necessary to bring you to the current level, you may edit the JCL members within the SAMPJCL library to either comment, or delete the PTF-IDS belonging to previously completed maintenance cycles.

An example of the PTF SYSMOD-IDs and the PTF level they were first introduced at follows:

```
/*                                              START FMID=CL233S0 */
          CA03229                                      /* LVL8609 */
          CA01753,CA01755,CA02338                      /* LVL8606 */
```

SMP requires all comments to begin with "/*" and complete with "*/".

The following SAMPJCL members contain the PTF SYSMOD-IDs for CA-7:

CJE1000	Common Cross-Platform Scheduling component
CL233S0	CA-7 Scheduling
CL233C0	CA-7 Communication
CL233SB	CA-7 CA-11 2.0/2.1 interface
CL233SC	CA-7 CA-11 2.2 interface
CZ27000	CA-JCLCheck Common component

Step 5

RECEIVE CA-7 maintenance.

Action: Customize and submit L233MREC from the CA-7 SAMPJCL.

Maintenance JCL member L233MREC RECEIVEs all the PTFs corresponding to all the components (functional SYSMODs) that CA-7 could possibly contain.

Edit member L233MREC to conform to your installation standards. Delete any DD statements within the SMPCNTL DD statement that correspond to any optional components not present on your system. SMP will not RECEIVE PTFs for components not already present on your system.

After you complete all editing, submit the job and review the output to verify that the RECEIVE processing ran successfully. If RECEIVE completed with an SMP return code greater than 0, review the output, correct the problem, and resubmit.

Note: This step requires a tape mount for the CA-7 maintenance tape.

Step 6

APPLY CHECK CA-7 maintenance.

Action: Customize and submit L233MAPC from CA-7's SAMPJCL.

Maintenance sample JCL member L233MAPC will APPLY CHECK all the PTFs corresponding to the components specified within the SMPCNTL DD statement. The purpose of this step is to identify USERMODs and APARs that prevent PTF application, and identify any PTFs already APPLYed.

Computer Associates requires the removal of any SYSMOD preventing PTF application. To allow PTF application, perform SMP RESTORE processing on the SYSMODs identified during SMP APPLY CHECK processing.

If other Computer Associates products have been installed, some of these PTFs may have already been APPLY CHECKed. Even if this is the case, it is always a good practice to run SMP APPLY CHECK processing immediately prior to an SMP APPLY.

Edit member L233MAPC to conform to your installation standards. Delete any DD statements within the SMPCNTL DD statement that correspond to optional components not present on your system.

After you complete all editing, submit the job and review the output. SMP APPLY CHECK processing may normally complete with a return code greater than 4. Remember that SMP APPLY CHECK processing only performs preliminary validation on SYSMODs individually. Carefully read the reports generated by this job, paying particular attention to the regression report.

Step 7

RESTORE applicable SYSMODs.

Action: Customize and submit L233MRES from your CA-7 SAMPJCL library.

Maintenance sample JCL member L233MRES contains the control statements for SMP RESTORE processing. This step will RESTORE USERMODs and APARs (SYSMODs) identified by APPLY CHECK processing, to allow for PTF application. If you do not have any SYSMODs to RESTORE, you may continue with the next step.

Note: Some USERMODs and APARs on your system may be at a higher level than a PTF. If this is the case, SMP APPLY CHECK processing will identify these SYSMODs, and they need to be RESTOREd to allow for PTF application. After PTF APPLY processing all APARs RESTOREd should be RECEIVEd and APPLYed once more. However, only USERMODs at a higher level than a PTF should be RECEIVEd and APPLYed again.

Edit member L233MRES to conform to your installation standards. Only the SYSMODs identified by APPLY CHECK processing need to be RESTOREd. Type these SYSMODs within the SMPCNTL DD statement.

After you complete all editing, submit the job and review the output to verify that the RESTORE processing ran successfully. If RESTORE completed with an SMP return code greater than 4, review the output, correct the problem, and resubmit.

At this point, you may want to rerun the APPLY CHECK processing to verify that there are no additional SYSMODs residing on your system that will inhibit the application of PTF maintenance.

Step 8

APPLY maintenance.

Action: Customize and submit L233MAPP from your CA-7 SAMPJCL library.

Maintenance sample JCL member L233MAPP will APPLY all the PTFs corresponding to the components specified within the SMPCNTL DD statement.

Edit member L233MAPP to conform to your installation standards. Delete any DD statements within the SMPCNTL DD statement that correspond to components that have already been APPLYed, and for any optional components not present on your system.

After you complete all editing, submit the job and review the output to verify that the APPLY processing ran successfully. If APPLY completed with an SMP return code greater than 4, review the output, correct the problem, and resubmit.

Step 9

Re-RECEIVE/APPLY applicable SYSMODs.

Review all the USERMODs and APARs RESTOREd by Step 7, (RESTORE Applicable SYSMODs). It is likely that some of these APARs and all of these USERMODs should be re-APPLIED to your system. If you did not have any USERMODs or APARs RESTOREd, then you may continue with the next step.

Edit the JCL member(s) for the desired USERMOD and/or APARs. After you complete all editing, submit the job(s) and review the output to verify that the RECEIVE/APPLY processing ran successfully. If APPLY completed with an SMP return code greater than 4, review the output, correct the problem, and resubmit. SMP will only allow you to update an SMP element once per APPLY sentence -- therefore to re-APPLY these SYSMODs may take several sentences.

Step 10

Reinitialize system modules with CAIRIM.

Action: Perform manual tasks described below.

Because of the different components affected by maintenance on this tape, it is required that you reinitialize the CA-7 RIM components.

Generate a new PPOPTION member (L233RINT) that contains the following statements:

```
PRODUCT(CA-7)  VERSION(L233)  PARM(REINIT)
```

After you complete all editing, proceed with the following steps to reinitialize:

1. Stop ICOM
2. Run CAIRIM using the PPOPTION member created above:

   'S CAS9,RIMPARM=L233RINT'
3. Start ICOM
4. Repeat steps 1 - 3 on each CPU where ICOM is running
5. Shut down and then restart CA-7.

   Ensure that you have supplied a valid LMP key for CA-7 prior to restarting CA-7. If a SCA0 abend occurs, see the Unicenter TNG Framework for OS/390 documentation for information about CA LMP.

   CA-7 can be restarted with TYPE=ERST after maintenance is applied.

Step 11

Copy Help to the CA-7 Help data set. See Upgrade Step 6: Copy Help to CA-7 Help Data Set.

Step 12

Accept the CA-7 maintenance.

Action: Customize and submit L233MACC from the CA-7 SAMPJCL library.

Maintenance sample JCL member L233MACC will ACCEPT all the PTFs corresponding to the components specified within the SMPCNTL DD statement.

Edit member L233MACC to conform to your installation standards. Delete any DD statements within the SMPCNTL DD statement that correspond to any optional components not present on your system.

After you complete all editing, submit the job and review the output to verify that the ACCEPT processing ran successfully. If the ACCEPT processing completed with an SMP return code greater than 4, review the output, correct the problem, and resubmit.

Step 13

Save all materials and output.

Be sure to save all of your maintenance materials and all output from the maintenance process. This material will be essential for future Computer Associates maintenance and timely, accurate support of the product.

Chapter

6

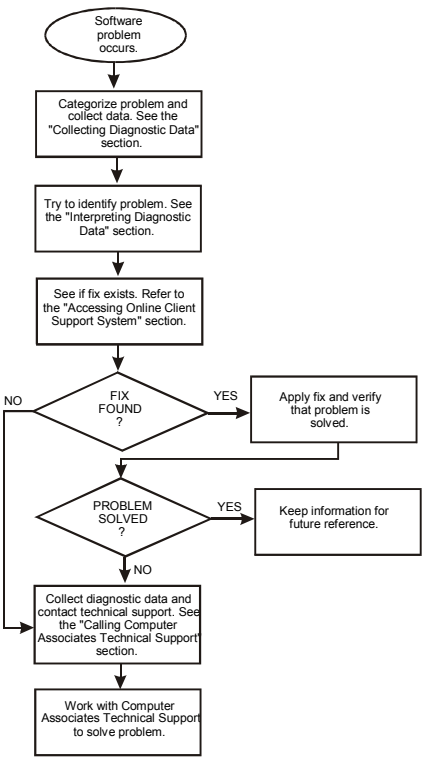
Troubleshooting

This chapter contains information about:

- Identifying and resolving problems
- Contacting Computer Associates Technical Support
- Receiving ongoing product releases and maintenance
- Requesting product enhancements

Diagnostic Procedures

Refer to the flowchart below for a summary of the procedures you should follow if you have a problem with a Computer Associates software product. Each of these procedures is detailed on the following pages.



Collecting Diagnostic Data

The following information is helpful in diagnosing problems that might occur:

- Control statements used to activate your product
- JCL used to install or activate your product
- Relevant system log or console listings
- Relevant system dumps or product dumps
- List of other IBM or third-party products that might be involved
- Manufacturer, model number, and capacity of your hardware
- Numbers and text of IBM or CA error messages associated with the problem
- Names of panels where the problem occurs
- Listings of all fixes applied to all relevant software, including:
  - The dates fixes were applied
  - Fix numbers
  - Names of components to which fixes were applied
- Short description of problems

Interpreting Diagnostic Data

When you have collected the specified diagnostic data, write down your answers to the following questions:

1. What was the sequence of events prior to the error condition?
2. What circumstances existed when the problem occurred and what action did you take?
3. Has this situation occurred before? What was different then?
4. Did the problem occur after a particular PTF was applied or after a new release of the software was installed?
5. Have you recently installed a new release of the operating system?
6. Has the hardware configuration (tape drives, disk drives, and so forth) changed?

From your response to these questions and the diagnostic data, try to identify the cause and resolve the problem.

Accessing the Online Client Support System

Computer Associates is making extensive use of the Internet for your benefit. CA encourages you to "surf the net" to the CA home page at ***http://www.ca.com***. The CA Internet site provides a great variety of information about CA products and services, including:

- Service and support
- Product information and sales
- CA-World conference information
- Press releases
- CA user groups

CA-TCC (CA-Total Client Care) gives you real time, interactive access to CA product support information through the Internet. Using CA-TCC, you can:

- Open new issues
- Browse or update your existing issues
- Perform keyword searches
- Download solutions, PTFs, and important notices regarding CA products, maintenance, and documentation

Requirements for Using CA-TCC

The following are the requirements to use CA-TCC:

- You must be a CA client with a current maintenance agreement.
- You must register through the CA Internet site.
- You must access the Internet with a browser that supports the HTML specification 2.0 or higher, such as Netscape Navigator 2.0 or higher or Microsoft Internet Explorer 3.0 or higher.

  Browsers that meet the HTML requirement support the following functions, which are required for CA-TCC:

  - Secure sockets layer (SSL) to encrypt your transaction traffic
  - Encrypted data records (known as COOKIES)
  - HTML tables

CA-TCC Security

CA-TCC runs as a secured server (SSL). You may need to configure your browser to enable SSL. Guidelines for doing this are provided on the CA Technical Support page.

Accessing CA-TCC

To access CA-TCC, click the Technical Support button on the CA home page and follow the links for CA-TCC. The CA-TCC options are:

- CA-TCC Information
- CA-TCC Registration
- Access CA-TCC

These options are described below.

CA-TCC Information

Select the information option to view background information for CA-TCC, details about the prerequisites, and instructions for configuring your browser. Be sure to review this section for updates or information not included here.

CA-TCC Registration	Select the registration option to identify yourself to CA-TCC. You must register before you can access CA-TCC online. There are prompts for all required information, including your name, site ID, CA-StarTrak PIN, company name, E-Mail address, postal address, and desired password for accessing CA-TCC. **Note:** If you do not have a CA-StarTrak PIN, CA-TCC provides one for you when you register.
Access CA-TCC	Select the access option to begin using CA-TCC. When prompted, enter your user ID and password. Once your sign-on is validated, you can select one of the following options:
Open a New Issue	Open an issue for, or request an enhancement to, one of your CA products.
Browse Your Issues	Display all issues for your site. The issues are grouped into three categories: Open, Closed, and Enhancement Requests (DARs).
Browse/Download Solutions	Specify criteria for selecting solutions, which you can then view or download.
Search CA Knowledge Base	Specify criteria for searching the CA Database for solutions, problems, and keywords that can provide you with immediate answers to your product support questions and concerns.
Update Your CA-TCC Profile	Make changes to your default E-mail address, phone number, and password whenever necessary.
Display Your Site's Licenses	View a list of all the CA products for which your company is currently licensed.
Display News Items	View and download recently published solutions for CA products, instructions for downloading from CA-TCC, and helpful information for using CA-StarTrak, CA-TCC, or other CA products.

Accessing the Technical Support Phone Services Directory

The Computer Associates Technical Support Phone Services Directory lists each CA product and the telephone number to call for primary support for that product. To access the Support Phone Services Directory online, click the Technical Support button on the CA home page. Follow the links, first to CA Telephone Support and then to the Technical Support Phone Numbers directory.

CA-TCC Hotline

If you experience any problems using CA-TCC, please call the CA-TCC Technical Support hotline at 609-273-3412.

CA-TLC: Total License Care

Many CA software solutions use license keys or authorization codes to validate your hardware configuration. If you need assistance obtaining a license key or authorization code, contact the CA-TLC: Total License Care group at 1-800-338-6720.

Calling Technical Support

Computer Associates provides telephone support for all its products.

If you are in North America, refer to the Technical Support Phone Services Directory for the appropriate phone number. Outside North America, call your local Computer Associates Support Center during normal business hours.

Note: Only your local Computer Associates Support Center can provide native language assistance. Please use English when contacting any North American center.

If you are unable to locate the Technical Support phone number you need, call 1-800-645-3042 for assistance if you are in North America or 631-342-4683 outside North America. The operator will record your call and a Technical Support representative will call you back. After hours calls should be limited to severity 1 problems.

If you are unable to resolve the problem, please have the following information ready before contacting Computer Associates Technical Support:

- All the diagnostic information described in Collecting Diagnostic Data.
- Product name, release number, operating system and genlevel.
- Product name and release number of any other software you suspect is involved.
- Release level and PUTLEVEL of the operating system.
- Your name, telephone number and extension (if any).
- Your company name.
- Your site ID.

- A severity code. This is a number (from 1 to 4) that you assign to the problem. Use the following to determine the severity of the problem:

  1. a "system down" or inoperative condition

  2. a suspected high-impact condition associated with the product

  3. a question concerning product performance or an intermittent low-impact condition associated with the product

  4. a question concerning general product utilization or implementation

Product Releases and Maintenance

Clients are requested to operate only under currently supported releases of the product.

Clients with current maintenance agreements also receive ongoing product maintenance. When a new release of the system is available, a notice is sent to all current clients.

Requesting Enhancements

Computer Associates welcomes your suggestions for product enhancements. All suggestions are considered and acknowledged. You can use either of two methods to request enhancements:

- Contact your Account Manager who will initiate a Demand Analysis Request (DAR) for you.
- Enter your request through StarTCC Extended Support on the Web.

The DAR system serves as a central receiving point for all enhancement requests.

Appendix

A

Stage I SYSGEN Macros

This appendix describes the CA-7 Stage I SYSGEN macros used to generate Stage II installation jobs and supporting files for your site. This section should be used with Install Step 11: Assemble CA-7 Stage I SYSGEN macros in Chapter 3.

The U7PARMS macro must be specified first, and the U7GEN macro must be specified last. The other macros may be specified in any order. Required macros are U7GEN, U7JCLDS, U7JOBCRD, and U7PARMS.

Note: For additional information on the SYSGEN macros, see member $IGEN in the CA-7 Sample JCL library.

U7PARMS

The U7PARMS macro specifies the global CA-7 parameters used by the Stage I SYSGEN. It is a required macro and must be the first macro coded.

Macro Format

All parameters are keyword parameters and may be specified in any order.

```
[name]    U7PARMS    VOL=vol-ser,
                    [DBDYNA={YES|NO},]
                    [NCF1={YES|NO},]
                    [NCF2={YES|NO},]
                    [NODE='dsn prefix',]
                    [NSUBMT=number,]
                    [OPSYS={MVS|XA|ESA},]
                    [SPOOLER={JES2|JES3},]
                    [TARGET='dsn.prefix',]
                    [UNIT=unitname,]
                    [VSAM='dsn prefix']
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7PARMS — Must be specified as shown.

VOL=vol-ser — Specifies the default volume serial number for the CA-7 data sets. This vol-ser is used with the UNIT= parameter. The VOL= parameter is required and has no default.

DBDYNA={YES|NO} — If YES is specified or defaulted, the DBPARMS file is generated with an ALLOCDYN parameter. This causes the JOB, DATASET and IDS data sets to be dynamically allocated when CA-7 is executed. The DD statements for these data sets are **not** generated in the CA-7 procedures or JCL. If DBDYNA=NO is coded, DBPARMS is generated with ALLOCJCL and the JOB, DATASET and IDS data set DD statements are generated in the procedures and JCL. See the "Backup and Recovery Considerations" chapter of the *CA-7 Systems Programmer Guide* for more information on the DBPARMS parameters.

NCF1={YES|NO} — If you specify YES, JCL is generated to support an NCF1 site, and the basic CA-7 structure. The default is NO.

NCF2={YES|NO}

If you specify YES, JCL is generated to support an NCF2 site. The JCL to support CA-7 itself is not generated. The default is NO.

Note: The keywords NCF1 and NCF2 are mutually exclusive.

NODE='dsn prefix'

Specifies the high-level qualifier for the CA-7 non-VSAM data set names. The specified node must be less than 32 characters long including decimal points. If decimal points are used, the parameter must be enclosed in single quotes. The default is 'CAI.CA7'.

NSUBMT=number

Number of submit data sets. This parameter specifies the number of submit data sets to be generated (default=0, maximum=6). For shared spool environments, the use of the submit data set is **not** required. Instead an internal reader is used by CA-7. In a nonshared spool environment, each ICOM must have its own submit data set.

OPSYS={MVS|XA|ESA}

Specifies the type of operating system. The default is MVS. Note that OS/390 systems can specify MVS or ESA.

SPOOLER={JES2|JES3}

Specifies the job entry subsystem at your site. The default is JES2.

TARGET='dsn.prefix'

Specifies the high-level qualifier for the CA-7 SMP target libraries. The specified node must be less than 32 characters in length including decimal points. If decimal points are used, the parameter must be enclosed in single quotes. If not specified, the default is the NODE= prefix.

Note: You should specify the same DSN prefix as was used in Step 6: Allocate Target Libraries in Chapter 3.

UNIT=unitname

Specifies the default unitname for the CA-7 data sets. This unitname is used with the VOL= parameter. The default is 3380. Valid values are 3330, 3350, 3375, 3380, 3390, 9345, or an esoteric name (for example, SYSDA). If an esoteric name is used here, you must specify the actual device type of the CA-7 queues on the U7GEN macro, QUNIT keyword.

VSAM='dsn prefix'

Specifies the high-level qualifier for the CA-7 VSAM data set names. The specified node must be less than 32 characters long including decimal points. If decimal points are used, the parameter must be enclosed in single quotes. This prefix may be different from the NODE= parameter depending on how you catalog VSAM data sets on your system. If not specified, the default is the NODE= prefix.

U7DAVOLS

The U7DAVOLS macro specifies all the direct-access volumes that can be accessed by the CA-7 system using the OS/VS interface of CA-7. It is an optional macro. The only volumes that are required to be specified are those that contain the JCL data sets defined in the U7JCLDS macro(s) which are not cataloged. CA-7 uses dynamic allocation to access the JCL data sets unless they are CA-Librarian or CA-Panvalet files.

Macro Format

There can be up to 50 volume/unit combinations, but only one UNIT= keyword.

```
[name]    U7DAVOLS    (v1,u1),(v2,u2),(v3,u3),...,
                      [UNIT=unitname]
```

Where:

name	Is an optional 1- to 8-character user-defined label.
U7DAVOLS	Must be specified as shown.
(v1,u1),(v2,u2),(v3,u3),...	Each (vx,ux) combination specifies the volume serial number (v) and unitname (u) for a specific pack.
UNIT=unitname	Specifies the default unitname for the volumes specified for the current U7DAVOLS macro. The default is 3380.

Notes:

- If the UNIT= parameter is not specified, the default is 3380.
- If a u parameter is not coded, the UNIT=value is used. Also, the parentheses are not needed.
- A maximum of 50 different volumes may be specified for the CA-7 SYSGEN.

U7IFACE

The U7IFACE macro specifies the CA-7 interface options. It is an optional macro.

Macro Format

All parameters are keyword parameters and may be specified in any order.

```
[name]    U7IFACE   [ISPF=(prefix,number),]
                    [U01LD='dsname',]
                    [U11LD='dsname',]
                    [VTAM=(applid,terminal,number),]
                    [VTAMLST='dsname']
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7IFACE — Must be specified as shown.

ISPF=(prefix,number) — Specifies the VTAM parameters for the CA-7 TSO/ISPF interface. The first parameter (prefix) is the application prefix that must be three characters in length. If not specified, this parameter defaults to the first three characters of the application name for CA-7 itself. The second parameter (number) is the application suffix that must be numeric. Entries are generated for the number of VTAM APPL definitions, which denote the maximum number of interface sessions available between CA-7 and TSO/ISPF. If not specified, this parameter defaults to match the third parameter of the VTAM keyword.

VTAM application minor node definitions are generated based on these parameters. If, for example, ISPF=(ABC,3) is coded, then six application minor node definitions are generated: ABC0001, ABC0002, ABC0003, ABC10001, ABC10002, and ABC10003.

U01LD='dsname' — This parameter is specified only if CA-1 is already installed or is being installed with CA-7. The data set name of the load library is needed to execute the interface between the products. This parameter is not needed if CA-1 is in a LINKLISTed library or if both CA-1 and CA-7 are installed in a common CAILIB.

U11LD='dsname'
: This parameter is specified only if CA-11 is already installed or is being installed with CA-7. The data set name of the load library is needed to execute the interface between the products. This parameter is not needed if CA-11 is in a LINKLISTed library or if both CA-11 and CA-7 are installed in a common CAILIB.

VTAM=(applid,terminal,numbers)
: Specifies the CA-7 VTAM parameters. The first parameter (applid) is the application name identified for CA-7 in the preinstallation task (default is CA7). The second parameter (terminal) is the VTAM terminal ID for the terminal to be used as the CA-7 master terminal (default is VTAMTERM). The third parameter (number) is the maximum number of virtual terminal sessions to be defined in the CA-7 initialization file (default is 10).

VTAMLST='dsname'
: This specifies the name of the VTAM library where application definitions are to be placed. The default for this parameter is VTAMLST='SYS1.VTAMLST'. This keyword is optional.

U7JCLDS

The U7JCLDS macro specifies the JCL data set(s) that the CA-7 system can use. At least one JCL data set is required. See the *CA-7 Systems Programmer Guide* for a detailed description of the JCL statement in the CA-7 initialization file.

The CA-7 SYSGEN process does **not** cause the JCL data set(s) to be allocated. If you do not already have an existing JCL data set, you must allocate one. A JCL data set must contain card-image data. You must specify at least the primary JCL data set (INDEX 0).

Since the CA-7 SYSGEN process automatically generates a HELP JCL data set with an index of 255 and a JCLLIB data set with an index code of 200, you should not code these index levels.

Macro Format

A maximum of 6 JCL data sets can be specified per U7JCLDS macro. More than one U7JCLDS macro may be coded in the Stage I assembly. If any subparameters are omitted, a comma must be included to indicate omission.

```
[name]    U7JCLDS    JCL1=('dsname',index,lterm,type),
                    [JCL2=('dsname',index,lterm,type),]
                    [JCL3=('dsname',index,lterm,type),]
                    [JCL4=('dsname',index,lterm,type),]
                    [JCL5=('dsname',index,lterm,type),]
                    [JCL6=('dsname',index,lterm,type)]
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7JCLDS — Must be specified as shown.

JCLn= — Keyword where n is a number from 1 to 6. The JCL1= keyword must be coded. JCL2= through JCL6= are optional.

'dsname' — Specifies the full data set name of the JCL data set in single quotes. This subparameter is required.

index

Specifies the CA-7 JCL data set index number (0-255). The primary JCL data set should have an INDEX value of zero (0) since this is the default used when a job is loaded (or added) to the CA-7 job data set. INDEX number 254 is assumed to refer to a special override library. INDEX numbers 200 and 255 are reserved. This subparameter is required.

lterm

Specifies the logical terminal where prompt messages about jobs scheduled from this JCL data set are queued. The default is MASTER, where the majority of the CA-7 messages are written. This subparameter is optional.

type

Specifies the type of data set being defined. The only supported types are:

PDS Partitioned data set (This is the default.)

LIB CA-Librarian data set

PAN CA-Panvalet data set

This subparameter is optional.

Note: If CA-Librarian or CA-Panvalet data sets are identified here, then JCL DD statements must be manually inserted in the procedure CA7ONL. These DD statements have required ddnames in the format JCLnnn, where nnn is the index value defined above and leading zeros **are** required.

U7JOBCRD

The U7JOBCRD macro specifies the job card operand information that appears on all of the generated Stage II installation jobs. It is a required macro and can be specified only once. The information specified on this macro is used to generate the job cards for **all** of the STAGE II installation jobs.

Macro Format

```
[name]    U7JOBCRD   CARD1='card 1 operands',
                    [CARD2='card 2 operands',]
                    [CHECK={YES|NO},]
                    [REG={YES|NO},]
                    [JOBNAME=xxxx,]
                    [JPARM1='jobparm or JCL comment card 1',]
                    [JPARM2='jobparm or JCL comment card 2',]
                    [JPARM3='jobparm or JCL comment card 3',]
                    [JPARM4='jobparm or JCL comment card 4']
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7JOBCRD — Must be specified as shown.

CARD1='card1 operands' — This specifies the operands to be placed on the first job card. The operands must be enclosed in single quotes. Job card operands generally consist of accounting information, programmer name, class, msglevel, and so forth. If the operands are to be continued on CARD2=, the CARD1= operands should end with a comma. This parameter has a maximum of 56 characters.

Note: If any individual operands need quotes surrounding them, use two single quotes. For example:

CARD1='(ACCTG),''JOE PGMR'',CLASS=A'

CARD2='card 2 operands' — This specifies the operands to be placed on the second job card. The operands must be enclosed in single quotes. If CARD2= is not specified, only one job card is used. This parameter has a maximum of 44 characters.

CHECK={YES|NO}

This specifies whether checking is to be done for CARD1= and CARD2= information. The checks consist of:

1. Making sure that the operand does not begin with //.
2. If CARD2 is specified, check that CARD1 ends with a comma.

The default for this keyword is YES.

REG={YES|NO}

This specifies whether REGION= parameters are to be placed on the generated job cards. The default is NO.

JOBNAME=xxxx

This specifies the first 4 characters of the generated CA-7 Stage II installation job names. The default for this parameter is CA07. An example of a generated job name is CA07N100. If specified, the value entered must be 4 characters, and must be valid for a job name. This keyword is optional.

JPARMx='jobparm card'

Up to four JCL statements may be defined which are placed after each JOB statement. These may be used to specify JOBPARM or JCL comment cards. Each JPARMx parameter must be enclosed in single quotes and begin with /* or //*. Parameters may be up to 72 characters.

U7PNAMES

The U7PNAMES macro allows you to override the JCL procedure names that CA-7 uses. The procedures generated by CA-7 are used for Stage II installation jobs and for CA-7 execution. The CA-7 procedures are moved to a PROCLIB on your system in a Stage II job (see the PROCLIB parameter on the U7GEN macro).

The U7PNAMES macro may be specified more than once. If specified more than once, and a parameter is repeated, only the last specification is used.

The U7PNAMES macro is optional.

Macro Format

```
[name]    U7PNAMES [PREFIX=xxxx,]
                   [keyword=procname,]
                   [keyword=procname,...]
```

Where:

name	Is an optional 1- to 8-character user-defined label.
U7PNAMES	Must be specified as shown.
PREFIX=xxxx	Specifies a prefix to be used for all procedures generated. The default is CA7. Value may be up to 4 characters with the first character alphabetic. Individual procnames may be specified to override this prefix.
keyword=procname	The keywords, their default procnames and a description of each are provided in the following table. If the U7PNAMES macro is coded, at least one keyword must be provided. The procnames specified should conform to standard procname conventions. The procnames specified are NOT checked for valid naming conventions.

Notes

- CA-7 no longer generates a procedure for RMS processing by CA-11. Instead, the RMS procedure name is extracted from the CA-11 Options Table if it is present in the system.
- The default procedure name for LOAD processing has changed. To use any name other than CA7LOAD, you must use the PROCLOAD keyword on the DBASE statement in the initialization file.
- The CA-7 NCF procedure is only generated if NCF1=YES or NCF2=YES is specified on the U7PARMS macro.

Keyword	Default	Description
ARK	CA7ARK	CA-7 ARF Database Backup
ARL	CA7ARL	CA-7 ARF Database Reload
BAT	CA7BAT	CA-7 Batch Execution
BKUP	CA7BKUP	CA-7 Database Backup/Reload
BTI	CA7BTI	CA-7 Batch Terminal Interface
ICOM	CA7ICOM	CA-7 Independent Communication
LOAD	CA7LOAD	CA-7 Load Processor

Keyword	Default	Description
LOG	CA7LOG	CA-7 Log Dump
NCF	CA7NCF	CA-7 Network Communications Facility
ONL	CA7ONL	CA-7 Online Execution
SVC	CA7SVC	CA-7 Execute PGM to Issue CA-7 SVC
TRLR	CA7TRLR	CA-7 Trailer Step
VAX	CA7VRMT	CA-7 for VAX Started Task
VBK	CA7VBK	CA-7 VRM Database Backup
VRL	CA7VRL	CA-7 VRM Database Reload

U7SPACE

The U7SPACE macro allows you to override the default space allocation parameters to be used for the CA-7 data sets. The defaults indicated below may not be right for your installation. See the *CA-7 Systems Programmer Guide* for a detailed description of the sizes of the various CA-7 data sets.

The U7SPACE macro may be specified more than once. If specified more than once, and a parameter is repeated, only the last specification is used.

The U7SPACE macro is optional.

Macro Format

```
[name]    U7SPACE  [keyword=(p,u),]
                   [keyword=(p,u),...]
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7SPACE — Must be specified as shown.

keyword=(p,u) — The keywords, their default values and a description of the associated CA-7 data sets are provided below. The format of the subparameters is (p,u), where:

p — The primary quantity of space units. (No secondary quantity is used.)

u — The space units (for example, TRK, CYL, Annnn). If allocating space by absolute track, use the Annnn format where nnnn indicates the absolute track location.

If the U7SPACE macro is coded, at least one keyword must be provided. The following chart shows the keywords available.

Keyword	Default	Description
ARF	5,CYL	CA-7 ARF data set
BATCHI	5,TRK	Batch input data set
BATCHO	3,CYL	Batch output data set
BROWSE	5,CYL	Browse data set
CKPT	1,CYL	Checkpoint data set
COMM	3,CYL	Communications data set
DMPQ	60,TRK	Queue dump data set
DMPV	30,TRK	Active VRM dump data set
IDS	3,CYL	CA-7 index data set (see note 1)
LOGP	10,CYL	Primary log
LOGS	10,CYL	Secondary log
QACT	5,TRK	Active queue
QDQT	50,TRK	Disk queue table
QPRE	15,TRK	Preprocess queue
QPRN	50,TRK	Prior-run queue (see note 2)

Keyword	Default	Description
QPST	15,TRK	Post queue
QRDY	10,TRK	Ready queue
QREQ	15,TRK	Request queue
QSCR	300,TRK	Scratch queue (see note 3)
QTRL	300,TRK	Trailer queue (see note 4)
SASDS	15,CYL	Dataset data set (see note 1)
SASJOB	10,CYL	Job data set (see note 1)
STAT	750,1024	Statistics file
SUBMT1	1,CYL	Submit data set number 1 (see note 5)
SUBMT2	1,CYL	Submit data set number 2 (see note 5)
SUBMT3	1,CYL	Submit data set number 3 (see note 5)
SUBMT4	1,CYL	Submit data set number 4 (see note 5)
SUBMT5	1,CYL	Submit data set number 5 (see note 5)
SUBMT6	1,CYL	Submit data set number 6 (see note 5)
VRM	5,CYL	CA-7 VRM data set

Notes

1. Space depends on the amount of workload documentation definitions and the number of jobs, data sets, networks, and schedules defined by the user.
2. Space depends on the number of individual job names ever submitted by CA-7.
3. Space depends on track capacity and the number of messages queued at one time. Also, scratch work for forecasting and commands that require sequencing may require more space.
4. Space can be estimated as a total of:

   2 tracks per job, per scan period plus

   1 track for each job that retains its JCL

5. Submit data sets are only required for shared DASD, nonshared JES spool environments. Most installations use the internal reader. See the U7PARMS macro, NSUBMT keyword.

U7VOL

The U7VOL macro allows you to specify the volume and unit parameters to be used for the CA-7 data sets. The default volume and unit parameters are taken from the VOL and UNIT parameters specified in the U7PARMS macro.

The U7VOL macro may be specified more than once. If specified more than once, and a parameter is repeated, only the last specification is used.

The U7VOL macro is optional.

Macro Format

```
[name]    U7VOL    [keyword=(v,u),]
                   [keyword=(v,u),...]
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7VOL — Must be specified as shown.

keyword=(v,u) — The keywords and a description of the associated CA-7 data sets are the same as those defined for the U7SPACE. The format of the subparameters is (v,u), where:

v — The volume serial number.

u — The unit name (for example, 3380).

If only the volume serial number is coded, it need not be enclosed in parentheses.

If the U7VOL macro is coded, at least one keyword must be provided.

U7TEST

The U7TEST macro specifies values used by the sample test job stream and the log tape dump jobs.

The U7TEST macro may be specified more than once. If specified more than once, and a parameter is repeated, only the last specification is used.

The U7TEST macro is optional.

Macro Format

```
[name]    U7TEST   [LOGTAPE='dsname',]
                   [VOL=vol-ser,]
                   [YEAR=year]
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7TEST — Must be specified as shown.

LOGTAPE='dsname' — This specifies the data set name for the CA-7 log file dumps. The data set can be a GDG. If a GDG format is desired, place a plus sign (+) at the end of the name. The data set name cannot exceed 32 characters. This parameter is optional and defaults to GDGs using the NODE= parameter in the U7PARMS macro.

VOL=vol-ser — This specifies the volume to be used by the CA-7 test jobs. If not specified, the VOL parameter is not generated in the DD statements. This parameter is required if there are no volumes available with an attribute of storage.

YEAR=year — This specifies the year to be used to generate the sample CA-7 base calendars. The default is the current year (for example, 2000).

Note: Indicating a GDG for LOGTAPE causes the GDG to be defined and the first generation to be created by the installation jobs.

U7GEN

The U7GEN macro specifies various values that do not fall under the specific domain of another SYSGEN macro.

The U7GEN macro may be specified only once, and it must be the last macro in the Stage I SYSGEN assembly.

The U7GEN macro is required even if it has no keywords.

Macro Format

```
[name]    U7GEN    [CAILIB='dsname',]
                   [CUST='company name',]
                   [DRIVER='dsname',]
                   [DUNIT=unitname,]
                   [GENTYPE={ALL|ALLOC|PROCS|TEST|INISH},]
                   [PRINTCL=class,]
                   [PROCLIB='dsname',]
                   [QUNIT=unitname,]
                   [SMFID=(smf1,smf2,smf3,smf4),]
                   [SUBMCL=class,]
                   [TESTSYS={NO|YES},]
                   [TUNIT=unitname]
```

Where:

name — Is an optional 1- to 8-character user-defined label.

U7GEN — Must be specified as shown.

CAILIB='dsname' — This specifies the CA90s load library data set name on your system. The CA-7 operating system oriented modules are moved to this library (SVC modules, SMF modules, and so forth). The library should be link listed or have a steplib in the CAIRIM JCL procedure (CAS9); it must be authorized. The default is CAILIB='CAI.CAILIB'. This keyword is optional.

CUST='company name' — This specifies your company name. The specification may not exceed 44 characters. This character string appears on the CA-7 Logon panel. The default is YOUR COMPANY NAME. This keyword is optional.

DRIVER='dsname'
: This specifies the CA-Driver procedure library that will be used during job submission for JCL expansion. It is assumed that this data set is already allocated. If a value is specified, a //CARPROC DD for this data set is generated in the CA-7 execution JCL. See the *CA-7 Interfaces Guide* for more information. This keyword is optional.

DUNIT=unitname
: This specifies the unit name for temporary disk data sets. The default is DUNIT=3380. This keyword is optional.

GENTYPE={ALL|ALLOC|PROCS|TEST|INISH}
: This specifies the type of output to be generated. The default is ALL. For a new installation, ALL should be specified. The options and their meanings are listed below:

  ALL — Generate all jobs, steps, and files.

  ALLOC — Generate jobs N005 and N010 (scratch/allocate CA-7 data sets).

  PROCS — Generate CA-7 JCL procedures.

  TEST — Generate job N220 (test job set definition).

  INISH — Generate batch and online initialization files.

  If more than one type is coded, they must be enclosed in parentheses and separated by commas. If ALL is coded, no other types may be coded. This keyword is optional.

PRINTCL=class
: This specifies the SYSOUT class to be used in generated jobs (for SYSPRINT, and so forth). The default for this parameter is PRINTCL='*'. This keyword is optional.

PROCLIB='dsname'
: This specifies the name of the JCL procedure library on your system where the CA-7 JCL PROCs are to be moved. It should be a PROCLIB accessible to all systems where CA-7 is installed and run. The default for this parameter is PROCLIB='SYS1.PROCLIB'. This keyword is optional.

QUNIT=unitname
: This specifies the unit name used for the CA-7 queue data sets. This PARM is only needed if the unitname specified in the UNIT parameter of the U7PARMS macro was generic (for example, SYSDA). The unit names used for the queues must be a specific device type. The currently supported device types for the queues are 3330, 3350, 3375, 3380, 3390, and 9345.

SMFID=(smf1,sfm2,smf3,smf4)
: This keyword is only needed if you are using submit data sets (see U7PARMS macro, NSUBMT keyword). This specifies the 4-character SID names for each local CPU to receive CA-7 submitted jobs. Names must be separated by commas and enclosed in parentheses. If only one CPU is specified, the parentheses are not required. If you have more than four CPUs, specify the first four here.

SUBMCL=class
: This specifies the submit class to be used in the CA7ICOM and CA7ONL procedures to communicate with the HOST system for job submission. The default for this parameter is SUBMCL=A. This keyword is optional.

TESTSYS=(NO|YES)
: This keyword is only required if the output is to be generated for a test copy of CA-7. See Chapter 4 of the *CA-7 Systems Programmer Guide* for details about the test copy of CA-7.

TUNIT=unitname
: This specifies the unit name for tape or cartridge devices on your system. It is used for the CA-7 log history and archive data sets. The default for this parameter is TUNIT=TAPE. This keyword is optional.

SYSGEN Sample

The following is a sample CA-7 SYSGEN.

```
//*L233GEN  JOB (ACCTINFO),PGMR,CLASS=A,MSGCLASS=A
//*-------------------------------------------------------------------***
//*  L233GEN: SAMPLE CA-7 STAGE I SYSGEN ASSEMBLY                     ***
//*                                                                   ***
//*  **** THIS IS ONLY AN EXAMPLE, YOU MUST CUSTOMIZE  *****          ***
//*  **** A SYSGEN FOR YOUR INDIVIDUAL SITE.           *****          ***
//*                                                                   ***
//* NOTE: UPDATE THE JOB CARD AND CHECK LINES MARKED WITH <==.        ***
//*       GO THROUGH THE SYSGEN MACROS APPENDIX OF                    ***
//*       THE CA-7 INSTALLATION GUIDE AND USE THIS                    ***
//*       MODEL TO BUILD YOUR OWN STAGE I SYSGEN DECK                 ***
//*-------------------------------------------------------------------***
//CA7GEN   EXEC  PGM=IEV90,           <== CAN BE CHANGED TO ASMA90
//             PARM='DECK,TERM,XREF(SHORT),NOOBJECT'
//SYSLIB   DD  DISP=SHR,
//             DSN=CAI.CA7.CAIMAC      <== SMP TARGET MACLIB
//         DD  DISP=SHR,DSN=SYS1.MACLIB
//*-------------------------------------------------------------------***
//*        SYSPUNCH - STAGE-1 SYSGEN OUTPUT                           ***
//*                                                                   ***
//* OUTPUT IS AN IEBUPDTE/IEBCOPY JOBSTREAM WITH ALL OF THE           ***
//* CA-7 STAGE-2 JOBS AND DECKS INLINE.  THE JOB CREATES THE          ***
//* THE CA-7 JCLLIB WITH ALL OF THE JOBS AND DECKS AS MEMBERS.        ***
//*                                                                   ***
//* THE STAGE-1 OUTPUT CAN BE A PARTITIONED DATA SET MEMBER (AS       ***
//* BELOW), OR, IT CAN BE A SEPARATE SEQUENTIAL DATA SET (AS          ***
//* LONG AS IT CONTAINS 80 BYTE RECORDS).                             ***
//*-------------------------------------------------------------------***
//SYSPUNCH DD  DSN=CAI.CA7.SAMPJCL(STAGE1), <== OUTPUT DSN
//            DISP=OLD
//SYSTERM  DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//SYSUT1   DD  UNIT=VIO,SPACE=(CYL,(1,1))   <== SPECIFY
//SYSUT2   DD  UNIT=VIO,SPACE=(CYL,(1,1))   <==  WORK
//SYSUT3   DD  UNIT=VIO,SPACE=(CYL,(1,1))   <==   UNIT
//SYSIN    DD  *
         PRINT NOGEN
*-------------------------------------------------------------------*
*  U7PARMS MACRO - REQUIRED & MUST BE FIRST MACRO CODED             *
*-------------------------------------------------------------------*
         U7PARMS                                                    X
               OPSYS=XA,              OPERATING SYSTEM OPTION       X
               SPOOLER=JES2,          SPOOLER TYPE                  X
               NODE='USER.CA7',       NON-VSAM DSN PREFIX           X
               TARGET='CAI.CA7',      CA-7 SMP TARGET LIBS          X
               VSAM='VSAM.CA7',       VSAM DSN PREFIX               X
               UNIT=SYSDA,            DEFAULT ALLOCATION UNITNAME   X
               VOL=DISK77             DEFAULT ALLOCATION VOLUME
*
*-------------------------------------------------------------------*
*  U7JCLDS MACRO - REQUIRED, MUST HAVE AT LEAST THE PRIMARY         *
*                  JCL DATASET CODED (DSET 0).                      *
```

```
*-------------------------------------------------------------------*
        U7JCLDS                                                     X
              JCL1=('USER.JOBLIB',0),         PRIMARY JCL LIBRARY   X
              JCL2=('USER.LIBR',5,,LIB),      LIBRARIAN LIBRARY     X
              JCL3=('USER.CA7.OVERRIDE',254)  OVERRIDE LIBRARY
*
*-------------------------------------------------------------------*
*  U7JOBCRD MACRO - REQUIRED. USE TO SPECIFY PARAMETERS TO BE      *
*                   PLACED ON STAGE 2 JOB CARDS.                   *
*-------------------------------------------------------------------*
        U7JOBCRD                                                    X
              CARD1='(ACNT-DATA),''CA-7.INSTALL'',',                X
              CARD2='CLASS=A,MSGCLASS=Z,NOTIFY=TECHIE',             X
              JPARM1='/*JOBPARM R=9999,F=DPLX',                     X
              JPARM2='//*  CA-7 STAGE II JOB FROM L233GEN DECK'
*
*-------------------------------------------------------------------*
*  U7IFACE MACRO - OPTIONAL. SPECIFIES INTERFACE OPTIONS           *
*-------------------------------------------------------------------*
        U7IFACE                                                     X
              VTAM=(CA7,,20),         VTAM INTERFACE OPTIONS        X
              VTAMLST='SYS2.VTAMLST', VTAM APPL DEFINITION LIBRARY  X
              ISPF=(CA7,10),          CA-7 TSO-ISPF INTERFACE OPTIONS X
              U11LD='CA11.LOADLIB'    CA-11 LOAD  LIBRARY
*
*-------------------------------------------------------------------*
*  U7SPACE MACRO - OPTIONAL. USE TO OVERRIDE DEFAULT ALLOCATION    *
*                  FACTORS FOR CA-7 DATA SETS.  MAY BE CODED MORE  *
*                  THAN ONCE, BUT, DON'T DUPLICATE PARMS.          *
*-------------------------------------------------------------------*
        U7SPACE                                                     X
              IDS=5,                  IDS DATA SET SIZE             X
              SASDS=20,               DATASET DATA SET SIZE         X
              SASJOB=20               JOB DATA SET SIZE
        U7SPACE                                                     X
              QSCR=500,                SCRATCH QUEUE SIZE           X
              QTRL=(20,CYL)            TRAILER QUEUE SIZE & ALLOC UNIT
*
*-------------------------------------------------------------------*
*  U7VOL MACRO   - OPTIONAL. USE TO SPECIFY DASD VOLUMES FOR       *
*                  SPECIFIC CA-7 DATA SETS.   MAY BE CODED MORE    *
*                  THAN ONCE, BUT, DON'T DUPLICATE PARMS.          *
*-------------------------------------------------------------------*
        U7VOL                                                       X
              IDS=DISK78,             VOLUME                        X
              SASDS=DISK78,            FOR THE                      X
              SASJOB=DISK78             DATA BASE
        U7VOL                                                       X
              COMM=SHARED             SHARED LOW ACTIVITY VOLUME
        U7VOL                                                       X
              QACT=DISK79,            SPECIAL                       X
              QDQT=DISK79,             VOLUME                       X
              QPRE=DISK79,              FOR QUEUES                  X
              QPRN=DISK79,                                          X
              QPST=DISK79,                                          X
              QRDY=DISK79,                                          X
              QREQ=DISK79,                                          X
```

```
               QSCR=DISK79,                                          X
               QTRL=DISK79,                                          X
               CKPT=DISK79
*
*--------------------------------------------------------------------*
*  U7TEST MACRO   - OPTIONAL. USE TO SPECIFY PARMS FOR CA-7 LOGS   *
*                   AND CA-7 TEST JOB NETWORK.                      *
*--------------------------------------------------------------------*
         U7TEST                                                      X
               LOGTAPE='CA7.LOG.HISTORY+',   DSN FOR CA-7 LOG TAPES  X
               VOL=WORK01                    PACK FOR TEST JOBS
*
*--------------------------------------------------------------------*
*  U7GEN MACRO    - REQUIRED & MUST BE THE LAST MACRO CODED.       *
*--------------------------------------------------------------------*
         U7GEN                                                       X
               CUST='*** YOUR COMPANY NAME GOES HERE ***',           X
               DRIVER='CA7.CARLIB'      DRIVER PROCLIB               X
               GENTYPE=ALL,             GENERATE ALL JOBS/DECKS      X
               PROCLIB='USER.PROCLIB',  LIB FOR CA-7 PROCS           X
               DUNIT=WRKDA,             TEMP DISK DSET UNITNAME      X
               QUNIT=3380,              SPECIFIC UNIT TYPE FOR QUEUES X
               TUNIT=TAPE9              TAPE DEVICE UNITNAME
         END
//
```

Appendix

B

Generated JCLLIB Members

The following is a list of the members created by the Stage I generation task. The members are placed in the CA-7 installation JCL library (JCLLIB) to be used by the remaining installation tasks and for execution and maintenance of CA-7.

Generated JCL Procedures

This table lists the catalog procedures generated by the Stage I task. CA-7 uses the procedures for execution and maintenance. The default procedure prefix is CA7. If you changed the prefix in the Stage I task, the members are generated using the specified prefix.

PROC	Description
CA7ARK	Backup procedure for the ARF database.
CA7ARL	Reload procedure for the ARF database.
CA7BAT	Procedure used for batch execution of CA-7.
CA7BKUP	Backup and reload procedure. It is used to back up or reload the CA-7 database based on parameters you supply for the job.
CA7BTK	Batch terminal interface procedure. Used to issue commands to CA-7 in batch.
CA7ICOM	Procedure used to execute ICOM. ICOM collects SMF data for job tracking in CA-7.

PROC	Description
CA7LOAD	CA-7 load procedure. It is used to load jobs to the CA-7 database. Issuing the load command under CA-7 generates a load step for the job, and the job is added to the database or updated if the job already exists.
CA7LOG	Log dump procedure. It is used to dump the CA-7 logs (primary and secondary) to tape.
CA7NCF	Procedure is used for CA-7 NCF. It is generated if you specify NCF1 or NCF2 on the SYSGEN macros.
CA7ONL	Procedure used for online execution of CA-7.
CA7SVC	CA-7 SVC procedure. Used to notify CA-7 of an external event such as a data set creation needed by a CA-7 controlled job.
CA7TRLR	CA-7 trailer step procedure. Trailer steps are used to process CA-7 commands from within jobs. The trailer steps can perform any commands belonging to the queue posting application.
CA7VRMT	Procedure for the started task used to receive CA-7 commands from CA-7 for VAX.
CA7VBK	Backup procedure from the VRM database.
CA7VRL	Reload procedure for the VRM database.

Generated Installation Jobs

The following is a list of the installation jobs generated by the Stage I task. The jobs are used to perform many of the installation tasks for CA-7. The default job name prefix is CA07. If you changed the prefix in the Stage I task, the members are generated using the specified prefix.

Job	Description
CA07N005	Scratch/uncatalog CA-7 data sets job stream. If problems are encountered running the allocate job (CA07N010), use this to "clean up" any allocated data sets so that N010 can be rerun without duplicate DSN JCL errors.
CA07N010	Allocate CA-7 data sets job stream. It allocates the CA-7 VRM database and support files, and defines generated data group definitions for log and archive files.
CA07N020	Moves the procedures, generated by the Stage I task, to a user-specified PROCLIB. Uses member N020DECK as SYSIN input for IEBCOPY.
CA07N030	Allocate and format the CA-7 database, the communications data set, and other files. This job should only be run if you are creating a new database.
CA07N120	Copies the application definitions used for CA-7 to the system library for VTAM. This job stream uses the member VTAMDECK as SYSIN input for IEBCOPY.
CA07N220	JCL for execution of CA-7 in batch. The job stream uses the member BATCH as the initialization file for this execution. The member N220DECK is used as command input to define test and maintenance jobs, their schedules, and requirements to the CA-7 database in preparation for online testing. Additionally, several inquiry commands are issued to demonstrate the capabilities of CA-7 and the format of its batch commands.

Job	Description
CA07N240	JCL for execution of CA-7 online. The job stream uses the member ONLINE, in the JCLLIB library, as the initialization file for this execution. Remember to use the TIME=1440 parameter on the job statement so that CA-7 does not time out.
CA07N500	JCL for execution of ICOM. ICOM processes SMF data used by CA-7 for job tracking. Remember to use the TIME=1440 parameter on the JOB statement so that ICOM does not time out.
CA07N505	JCL for execution of NCF (Network Communications Facility). It is only generated if you specified NCF in the Stage I macros.

Generated Special Purpose Jobs

The following is a list of the special purpose jobs generated by the Stage I task. The jobs are samples or special jobs that may be required after CA-7 has been installed. The default job name prefix is CA07. If you changed the prefix in the Stage I task, the members were generated using that prefix.

Job	Description
CA07N510	Job stream to back up and/or reload the CA-7 database depending on the parameters you supply. The backup process backs up the database to tape. The reload process reads in the backup tape and reloads the data to the database.
CA07N515	Job stream to back up the CA-7 VRM database.
CA07N516	Job stream to delete, reallocate, and reload the CA-7 VRM database.
CA07N517	Job stream to back up the CA-7 ARF database.
CA07N518	Job stream to delete, reallocate, and reload the CA-7 ARF database.
CA07N520	JCL to link several modules for CA-7. The modules to be linked are: UCC7 — The CA-7 nucleus module. UCC7DBVR — This is the database verification module. This module verifies the information on the database and generates a report to be used for database maintenance. **Note:** If you specified NCF on the Stage I macros, there will also be link statements for NCF and SASSNCDG.`

Job	Description
CA07N525	JCL to execute the batch terminal interface. Most commands that can be entered in the online mode may be used with the batch terminal. Refer to member N220DECK for examples.
CA07N530	Sample history reporting job stream. Uses the log history tapes, dumped from the CA-7 logs for reporting of certain events. The sample reports are the 02 Transaction Detail report and the 08 Master Station Messages report. For more information on the types of reporting available, refer to the *CA-7 Reports Guide*.
CA07N535	Sample history purge job. Use to purge history data from the log history tape files to an archive tape file.
CA07N540	Sample archive purge job. Use to purge old records that you may no longer require from the archive tape files.
CA07N550	Sample CA-7 CCI interface batch execution. It accepts any CA-7 batch terminal commands. Refer to the *CA-7 Interfaces Guide*, External Communicators, for more information on the CCI interface.
CA07N600	Sample workload planning job. Use workload planning to simulate and report on certain workload processing activities for your data center. For more information on workload planning, refer to the *CA-7 Reports Guide*.
CA07N610	Sample database verification job stream. Use database verification to identify problem records on the CA-7 database.
CA07N700	Sample job to reinitialize the CA-7 communications data set (COMMDS).
CA07N710	Special job to allocate and initialize the CA-7 VRM database.
CA07N712	Special job to allocate and initialize the CA-7 ARF database.

Job	Description
CA07N720	Special job to copy the CA-7 help members from the CA-7 macro library to the CA-7 help data set.
CA07N730	Sample job to reset batch terminal flags in the communications data set.
CA07N810	Sample job SASSDT10 for database transportability (DBT).
CA07N820	Sample job SASSDT20 for database transportability (DBT).
CA07N830	Sample job SASSDT30 for database transportability (DBT).
CA07N840	Sample job to extract from the CA-7 VRM database for database transportability (DBT).
CA07N845	Sample job to populate from the CA-7 VRM database for database transportability (DBT).
CA07N850	Sample database transportability job (DBT) to extract data from the CA-7 ARF database.
CA07N855	Sample BTI job to populate from the CA-7 ARF database for database transportability (DBT).

Generated Installation Decks

The following is a list of the installation files generated by the Stage I task. The files are used by the installation jobs as input to the tasks for CA-7.

File	Description
ARFALLOC	IDCAMS SYSIN input to define the CA-7 ARF database.
ARFDEL	IDCAMS SYSIN input to delete the CA-7 ARF database.

File	Description
BATCH	Initialization file for the sample batch execution of CA-7.
CA7ISPF	Contains the VTAM definitions for the CA-7 TSO/ISPF interface.
CA7VTAM	Contains the VTAM application definitions for CA-7.
CDSIDECK	SYSIN input member for the N030 job stream. Use to initialize the communications data set.
DBPARMS	SYSIN input member for the ALLVSAM database definition. Used by all jobs that reference the CA-7 database.
GDGDECK	Contains the generation data group indexes definitions for the log and history GDGs. Used by the N010 allocate job stream.
GDGDEL	Contains the delete statements for the log and history generation data group indexes. Used by the N005 scratch job stream.
HELPDECK	SYSIN input for copying the CA-7 help members from the CA-7 CAIMAC to the help data set in the N030 job stream.
L233RIM	Member used to define CA-7 to CAIRIM. Used by CAIRIM to initialize the system components for CA-7.
N020DECK	SYSIN input member for copying the JCL procedures required by CA-7. Used by the Move CA-7 Procedures task in the N020 job stream.
N220DECK	Input member for the sample batch execution of CA-7 (N220 job).
N520DECK	Input member for the N520 job to link edit the CA-7 nucleus and other composite modules.
ONLINE	Initialization file for the sample online execution of CA-7 (N240 job).
REPRO	SYSIN input member for IDCAMS copy functions.

File	Description
UL23301P	Input for SMP USERMOD to receive and apply sample CA-7 calendars. Used by job UL23301 in CA-7 Sample JCL library.
UL23311P	Input for SMP USERMOD to replace the default CA-7 TSO/ISPF CLIST with a copy customized by the Stage I SYSGEN. Used by job UL23311 in CA-7 Sample JCL library.
VRMALLOC	IDCAMS SYSIN input to define the CA-7 VRM database.
VRMDEL	IDCAMS SYSIN input to delete the CA-7 VRM database.
VRMSORT	SORTCNTL input for the VRM Backup procedure (CA7VBK).
VSAMDECK	IDCAMS SYSIN input to define the CA-7 ALLVSAM database.
VSAMDEL	Contains the IDCAMS SYSIN input to delete the CA-7 ALLVSAM database files.
VTAMDECK	SYSIN input member for copying the VTAM definitions required by CA-7. It is used by the Update VTAM task in the N120 job stream. The following members are copied from JCLLIB:
	CA7VTAM — This is the application definition for CA-7.
	CA7ISPF — This is the definition for the CA-7 TSO/ISPF interface.

Generated Test and Maintenance Jobs

The Stage I task generates test and maintenance jobs that are used during the installation of CA-7. The default prefix for these jobs is CA07. If you changed the 1- to 4-character prefix in the Stage I task for these jobs, they reside in the JCL library with the specified prefix. These jobs are defined to the CA-7 database in job N220. After testing the installation, the test jobs may be deleted from the database but the maintenance jobs are used for production processing by CA-7. The generated test and maintenance jobs are:

Job	Description
CA07CLEN	Test job uncatalogs and scratches the data sets created by the other test jobs used during testing of the installation of CA-7.
CA07LOGP	Maintenance job used to dump the CA-7 primary log file (LOGP) to tape.
CA07LOGS	Maintenance job used to dump the CA-7 secondary log file (LOGS) to tape.
CA07SVCT	Maintenance job used to test the installation of the CA-7 SVC, ICMDSECT zaps, and the SMF exits. Though seldom used, it should be retained and DEMANDed when problems occur with tracking of CA-7 submitted jobs.
CA07XXnn	Test jobs used to exercise various CA-7 functions related to scheduling, job submission, and tracking. Refer to "Installation Verification" in the *CA-7 Systems Programmer Guide* for a diagram of these jobs and how they interact.

Appendix

C

VTAM and NCF Node Table Definitions

This appendix includes information for the installation and implementation of a CA-7 NCF network. The discussions include:

- coding the VTAM definitions for the NCF network,
- coding the NCF node table(s), and
- identifying host nodes in the node table.

VTAM Definitions for the NCF Network

The VTAM definitions for each CA-7 NCF site must be set up at each site. The definitions are dependent on the environment. The user's system programming area responsible for VTAM should be contacted to establish the necessary definitions.

As a guide, see the example definition in member UL23302 in the CA-7 Sample JCL library (SAMPJCL). This example table is listed in the next topic. For the Dallas site, the SYS1.VTAMLST data set could be changed as follows:

1. Member ATCCONxx would need to include three new members NCFCDRSC, NCFCDRM and NCFDEF.
2. Member NCFCDRSC would be:

```
          VBUILD  TYPE=CDRSC
NCFDEN    CDRSC CDRM=DENVER
NCFSF     CDRSC CDRM=SANFRAN
NCFTOKYO CDRSC CDRM=TOKYO
```

3. Member NCFCDRM would be:

```
          VBUILD   TYPE=CDRM
DALLAS    CDRM   SUBAREA=x1,CDRDYN=YES,CDRSC=OPT
DENVER    CDRM   SUBAREA=x2,CDRDYN=YES,CDRSC=OPT
SANFRAN   CDRM   SUBAREA=x3,CDRDYN=YES,CDRSC=OPT
TOKYO     CDRM   SUBAREA=x4,CDRDYN=YES,CDRSC=OPT
```

   where x1, x2, x3 and x4 are installation dependent.

4. Member NCFDEF would be:

```
          VBUILD   TYPE=APPL
NCFDAL    APPL   ACBNAME=NCFDAL,AUTH=ACQ
```

NCF Node Table Definitions

The CA-7 NCF node table for each site must be built using the UNCNOD macro. The required load library name of the table is UCC7NODE. Each node in the network may be specified. However, it is only necessary to include all nodes with which this node will be communicating. Other nodes may be included as desired. *The local node should be the first entry in the table*. (See the discussion in Identifying the Host NCF Node.)

The node table (UCC7NODE) can be changed only by an IPL or running CAIRIM with a REINIT=COLD option.

See Node Table Definition Sample for a sample node table definition. Also, see member UCC7NODE in the CA-7 Sample JCL library which can be modified for your site. Member UL23302 in the CA-7 Sample JCL library contains model JCL to receive and apply the modified node table.

UNCNOD Macro Format

```
nnnnnnnn UNCNOD NODNAME=aaaaaaaa,
                UCC7ID=ii,
                JESNODE=jjjjjjjj,
                SMFID=ssss,
                     {ENTRY}
                TYPE={LAST }
```

Values:

Nnnnnnnn	Is an optional parameter used to further identify the entry in the assembly. It has no meaning in the resulting object code.
NODNAME=aaaaaaaa	Is the unique application identifier (ACBNAME) for the node as specified in the VTAM APPL definition. This parameter is required.
UCC7ID=ii	Is the unique CA-7 identifier for the node. This parameter is required. It is converted to a one-byte unique hex code to be used within CA-7 NCF. This parameter must not contain the values 00, 40, or E0 through FF. Each ID must represent only one node.
JESNODE=jjjjjjjj	Is the JES assigned identifier for the node and is required.
SMFID=ssss	Is the SMF system ID of the CPU where NCF will be running. It is only used during CAIRIM initialization to determine the host entry in the table. This keyword is optional and should only be used when all SMF IDs across the system are unique. See the discussion on identifying the host node in the next section.
TYPE=ENTRY|LAST	Specifies an entry to the node table. LAST must be specified on the last entry of the table.

Note: The unique relationship between each NODNAME, UCC7ID and JESNODE must be maintained across all node tables in the NCF VTAM network.

Node Table Definition Example

```
UCC7NODE CSECT

DALLAS   UNCNOD  NODNAME=ADL0101,UCC7ID=01,JESNODE=DAL
(local node)

CHICAGO  UNCNOD  NODNAME=ACH0201,UCC7ID=02,JESNODE=CHI

NEWYORK  UNCNOD  NODNAME=ANY0301,UCC7ID=03,JESNODE=NY

SANFRAN  UNCNOD  NODNAME=ASF0401,UCC7ID=04,JESNODE=SF,TYPE=LAST

END
```

When a communications link is established between two nodes in a network, this "bind" process automatically includes a verification of the compatibility of the node tables at each of the two sites. Transmission of the node table to the other node with which communications are to be established is handled by the NCF VTAM task automatically.

Once the remote node table has been received, the following verification is performed against the two tables.

- The first entry in the node table must point to the local node. Thus, this implies that the node tables at two different sites are different, since each table has as its first entry its own local node name.
- The first node in each table must be in the other table (in any position other than the first position).
- The node name and identifier byte, as defined with the UNCNOD macro parameters NODNAME and UCC7ID respectively, must be consistent between the two node tables for any node that appears in both tables.

See messages CA-7.NC502 and CA-7.NC503 for possible errors. If one node can communicate with some nodes with which the other **cannot** communicate, extra entries may reside in that node table.

Identifying the Host NCF Node

It is critical for the implementation of NCF that each CPU where CA-7 submitted jobs execute be able to identify its own entry in the NCF node table (host node). Three methods are available. The different methods are explained below followed by a discussion of their relative merits.

1. First Entry in the Table is the Host Node

   Each site has its own unique node table with the host node as the first entry. This means that each site has different source for its node tables. This is the default method for assigning the host node.

2. Host Node Set by CAIRIM Based on User Parameter

   Specifying a parameter on the CAIRIM initialization of CA-7 system interfaces indicating which entry should be considered the host node. Using this method allows you to keep one copy of the node table that can be distributed to all sites. The format of the CA-7 CAIRIM initialization statement would be:

   ```
   PROD(CA-7 GEN) VERSION(L233) PARM(NCF=xx)
   ```

   where **xx** matches the UCC7ID= parameter of the host node entry in the NCF node table definition. When the CAIRIM initialization process loads the node table into CSA, it adjusts the table so that the designated entry is first. See the *CA-7 Systems Programmer Guide*, CAIRIM Initialization Considerations topic for a full discussion of the CAIRIM parameters available.

3. Host Node Set by CAIRIM Based on System SMF ID

   Specifying an SMF system ID on the node table definitions themselves also allows you to keep one copy of the node table which can be distributed to all sites. However, all SMF IDs across the network must be unique, and if you have sites where there are multiple CPUs, you will have to use options 1 or 2 above to handle the CPUs which do not match the SMF ID listed in the node table. When the CAIRIM initialization process loads the node table into CSA, it adjusts the table so that the entry matching that system's SMF ID is first.

Usage Notes

The determination of which method to use should be based on your own situation. If you are unsure of which method is best for you, start with the first option (first entry in the node table is the Host Node). This option has the advantage of simplicity. Once you have it set up you do not have to worry about parameters to CAIRIM or changing SMF IDs when you add or move CPUs within your NCF sites.

If your network is very dynamic and you find yourself having trouble keeping all of the node tables synchronized, consider using the second option (Host Node Set by CAIRIM Based on User Parameter). This allows you to maintain one copy of the node table. However, you must ensure that the CAIRIM parameters for CA-7 at each site (and every CPU or LPAR that executes CA-7 submitted jobs) specify the correct host node.

Also, if you have sites where there is only one CPU that executes CA-7 submitted jobs, you can consider the third option (Host Node Set by CAIRIM Based on System SMF ID). If these SMF IDs are specified in the node table, the selection of the host is done automatically by CAIRIM without any parameters. It is valid to specify SMFID= keywords on some of the NCF Table entries without specifying them on all entries.

Index

$

A

B

C

D

E

F

G

H

I

J

L

M

N

O

P

R

S

T

U

V