

Program Directory for TME 10 NetView for OS/390 C Runtime

Version 1 Release 2
Program Number 5697-B82

FMID HPZ8330

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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center.

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1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of C Runtime. You should read all of this program directory before installing the program and then keep it for future reference.

The program directory contains the following sections:

- 2.0, "Program Materials" on page 2-1 identifies the basic and optional program materials and documentation for C Runtime.
- 3.0, "Program Support" on page 3-1 describes the IBM support available for C Runtime.
- 4.0, "Program and Service Level Information" on page 4-1 lists the APARs (program level) and PTFs (service level) incorporated into C Runtime.
- 5.0, "Installation Requirements and Considerations for C Runtime" on page 5-1 identifies the resources and considerations for installing and using C Runtime.
- 6.0, "Installation Instructions" on page 7-1 provides detailed installation instructions for C Runtime. It also describes the procedures for activating the functions of C Runtime, or refers to appropriate publications.

Before installing C Runtime, read 3.2, "Preventive Service Planning" on page 3-1. This section tells you how to find any updates to the information and procedures in this program directory.

Do not use this program directory if you are installing TME 10 Netview for OS/390 C Runtime with an MVS Custom-Built Installation Process Offering (CBIPO), SystemPac, or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the program directory as required.

If you are installing TME 10 Netview for OS/390 C Runtime using the MVS Custom-Built Product Delivery Offering (CBPDO) (5751-CS3), use the softcopy program directory provided on the CBPDO tape. Your CBPDO contains a softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for TME 10 Netview for OS/390 C Runtime are included on the CBPDO tape.

1.1 C Runtime Description

These are run time libraries used by functions in certain products. Installing this FMID allows functions of those products to work correctly.

1.2 C Runtime FMIDs

C Runtime consists of the following FMID: HPZ8330

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for TME 10 Netview for OS/390 C Runtime is 5697-B82.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature code, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature codes, and are not required for the product to function.

The program announcement material describes the features supported by TME 10 Netview for OS/390 C Runtime. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is 3480 cartridge. The tape or cartridge contains all the programs and data needed for installation. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 7-1 for more information about how to install the program.

Figure 2 on page 2-2 describe the file contents of the program tapes or cartridges.

Note: If you are installing TME 10 Netview for OS/390 C Runtime using the MVS Custom-Built Product Delivery Offering (CBPDO) (5751-CS3), some of the information in these figures may not be valid. Consult the CBPDO documentation for actual values.

2.1.1 Option for C Runtime

Figure 1 describes the tapes or cartridges for TME 10 Netview for OS/390 C Runtime option.

Medium	Feature Number	Physical Volume	External Label Identification	VOLSER
9/6250 Tape	XXXX	1	C Runtime libraries	PZ8330
3480 cart.	XXXX	1	C Runtime libraries	PZ8330
4MM Tape	XXXX	1	C Runtime libraries	PZ8330

Figure 2. C Runtime- TME 10 Netview for OS/390 C Runtime Graphical Enterprise Stacked English Tape Format.						
VOLSER	File	Name	RECF	LRECL	BLK SIZE	Number of Elements
PZ8330	1	SMPMCS	FB	80	8800	-
PZ8330	2	IBM.HPZ8330.F1	FB	80	8800	1
PZ8330	3	IBM.HPZ8330.F2	FB	80	8800	5
PZ8330	4	IBM.HPZ8330.F3	U	0	6144	139

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for TME 10 Netview for OS/390 C Runtime.

2.3 Program Publications

The following sections identify the basic and optional publications for TME 10 Netview for OS/390 C Runtime.

2.3.1 Basic Program Publications

No basic publications are provided for TME 10 Netview for OS/390 C Runtime.

2.3.2 Optional Program Publications

No optional publications are provided for TME 10 Netview for OS/390 C Runtime.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for TME 10 Netview for OS/390 C Runtime.

2.5 Publications Useful During Installation

The publications listed in Figure 3 may be useful during the installation of TME 10 Netview for OS/390 C Runtime. To order copies, contact your IBM or Tivoli representative.

Figure 3 (Page 1 of 2). Publications Useful During Installation	
Publication Title	Form Number
SMP/E Commands	SC28-1805
SMP/E Reference	SC28-1806

Figure 3 (Page 2 of 2). Publications Useful During Installation	
Publication Title	Form Number
SMP/E: Messages and codes	SC28-1108
MVS custom-Built Offering Planning and Installation	SC23-0352
SMP/E User's Guide	SC28-1302

3.0 Program Support

This section describes the IBM support available for TME 10 Netview for OS/390 C Runtime.

3.1 Program Services

Contact your IBM or Tivoli representative for specific information about available program services.

3.2 Preventive Service Planning

Before installing TME 10 Netview for OS/390 C Runtime, you should review the current Preventive Service Planning (PSP) information. If you obtained TME 10 Netview for OS/390 C Runtime as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO tape.

If you obtained TME 10 Netview for OS/390 C Runtime on a product tape, or if the CBPDO is more than two weeks old when you install it, you should contact the IBM Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

PSP Buckets are identified by UPGRADEs, which specify product levels, and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for TME 10 Netview for OS/390 C Runtime are:

Figure 4. PSP Upgrade and Subset ID		
UPGRADE	SUBSET	Description
TME10NETV120	HPZ8330	C Runtime

3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 5 identifies the component ID (COMPID) for C Runtime.

Figure 5. Component ID for C Runtime				
FMID COMPID Component Name RETAIN Release				
HPZ8330	5697B8202	C Runtime	330	

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of TME 10 Netview for OS/390 C Runtime. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated. Information about the cumulative service tape is also provided.

4.1 Program Level Information

No APARs have been incorporated into TME 10 Netview for OS/390 C Runtime.

4.2 Service Level Information

No PTFs have been incorporated into TME 10 Netview for OS/390 C Runtime.

4.3 Cumulative Service Tape

A cumulative service tape, containing PTFs not incorporated into this release, might be included with this program. Installation instructions for cumulative service tapes can be found in the SMP/E publications.

If you received this product as part of a CBPDO or a ProductPac, PTFs not incorporated into this release are provided on the tape, and a separate cumulative service tape will not be provided.

5.0 Installation Requirements and Considerations for C Runtime

The following sections identify the system requirements for installing and activating C Runtime. The following terminology is used:

- Driving system: the system used to install the program.
- Target system: the system on which the program is installed.

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate IPL-able copy of the running system. The clone should include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.
- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to assess these impacts without disrupting your production system.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install C Runtime.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

Figure 6. Driving System Software Requirements for C Runtime				
Program Number	Product Name and Minimum VRM/Service Level			
5668-949	System Modification Program/Extended (SMP/E) V1R8 or later			

5.2 Target System Requirements for C Runtime

This section describes the environment of the target system required to install and use C Runtime.

5.2.1 Machine Requirements for C Runtime

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requisites for C Runtime

5.2.2.1 Minimum Requisites

A minimum requisite is defined as one of the following:

- 1. Installation Requisite: A product that is required at installation time. i.e. this product will not install successfully unless this requisite is met. This includes products that are specified as REQs, PREs, or CALLLIBs.
- 2. Run Time Requisite: A product that is **not** required for the successful installation of this product, but is needed at run time in order for this product to work.

No minimum requisites are needed to install TME 10 Netview for OS/390 C Runtime.

5.2.2.2 Functional Requisites

A functional requisite is defined as a product that is **not** required for the successful installation of this product or for the base function of the product, but is needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

No minimum requisites are needed to install TME 10 Netview for OS/390 C Runtime.

5.2.2.3 Toleration/Coexistence Requisites

A toleration/coexistence requisite is defined as a product which must be present on a sharing system. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD at difference time intervals. C Runtime does not have any toleration/coexisence requisites.

5.2.3 DASD Storage Requirements for C Runtime

C Runtime libraries can reside on 3380 or higher DASD.

Figure 7 lists the total space required for each type of library.

Figure 7. Total DASD Space Required by C Runtime				
Library Type Total Space Required				
Target	1620 blocks of 3390			
Distribution	1620 blocks of 3390			

Notes:

- 1. All of these data sets are partitioned data sets (DSORG=PO).
- 2. The data set sizes specified contain 15% extra space. You may wish to revise these numbers based on your plans for adding additional function or service.
- 3. IBM recommends use of system determined blocksizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a blocksize of 32760, which is the most efficient from a performance and DASD utilization perspective.

If you choose not to use system determined blocksizes, use the blocksizes and numbers of blocks specified to allocate the data sets. Data sets can be reblocked to a larger size.

- 4. Abbreviations used for the data set type are:
 - U Unique data set used by only the FMIDs listed. In order to determine the correct storage needed for this data set, this table provides all required information; no other tables (or program directories) need to be referenced for the data set size.
 - S Shared data set used by more than the FMIDs listed. In order to determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information on the names and sizes of the required data sets, please refer to 6.1.8, "Allocate SMP/E Target and Distribution Libraries" on page 7-5.

Figure 8. Storage Requirements for SMP/E Work Data Sets for C Runtime						
Library DDNAME	TYPE	RECFM	LRECL	BLKSIZE	No. of Blocks	No. of DIR Blocks
SMPWRK1	S	FB	80	8800	100	5
SMPWRK2	S	FB	80	8800	200	5
SMPWRK3	S	FB	80	3200	400	5
SMPWRK4	S	FB	80	3200	400	5
SMPWRK6	S	FB	80	3200	400	5

The following table provides an estimate of the storage needed in the SMP/E data sets for C Runtime. The estimates must be added to those of any other programs and service being installed to determine the total additional storage requirements.

Figure 9. Storage Requirements for SMP/E Data Sets for C Runtime						
Library DDNAME	TYPE	RECFM	LRECL	BLKSIZE	No. of Blocks	No. of DIR Blocks
SMPMTS	S	FB	80	8800	40	25
SMPPTS	S	FB	80	8800	400	25
SMPLTS	S	U	0	6144	5000	50
SMPSCDS	S	FB	80	8800	40	25
SMPSTS	S	FB	80	8800	40	25

The following figures list the target and distribution libraries (data sets) and their attributes required to install C Runtime. The storage requirements of C Runtime must be added to the storage required by other programs having data in the same data set (library).

Figure 10. Storage Requirements for C Runtime Target Libraries							
Library DDNAME	TYPE	RECFM	LRECL	BLKSIZE	No. of Blocks	No. of DIR Blocks	
SCNMCSMP	S	FB	80	8800	10	5	
SCNMCRUN	S	U	0	6144	1614	25	

Figure 11. Storage Requirements for C Runtime Distribution Libraries							
Library DDNAME	TYPE	RECFM	LRECL	BLKSIZE	No. of Blocks	No. of DIR Blocks	
ACNMCSMP	S	FB	80	8800	10	5	
ACNMCRUN	S	U	0	6144	1614	25	

5.3 C Runtime FMIDs Deleted

C Runtime will not be deleting any FMIDs.

5.4 Special Considerations

C Runtime has no special considerations for the target system.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate C Runtime. C Runtime should be installed if you use the User Administration Service.

Please note the following:

- If you want to install C Runtime into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI. Note also that SMPLTS is required.
- Sample jobs have been provided to help perform some or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.
- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation

6.1 Installing C Runtime

6.1.1 SMP/E Considerations for Installing C Runtime

This release of C Runtime is installed using the SMP/E RECEIVE, APPLY, and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

6.1.2 SMP/E Environment

All SMP/E installation jobs provided assume that all necessary DD statements for the execution of SMP/E are defined using DDDEFs.

Sample jobs are provided to assist you in installing C Runtime. After the RECEIVE step has been completed, the sample jobs can be found in SMPTLIB: IBM.HPZ8330.F2. Make a copy of these jobs in your own library and modify them to use during the installation of C Runtime. The sample jobs are:

CNMCREC1 C Runtime sample RECEIVE job

CNMCALOC C Runtime sample job to allocate target and distribution libraries

CNMCDDDF C Runtime sample job to define SMP/E DDDEFs

CNMCAPLY C Runtime sample APPLY job **CNMCACPT** C Runtime sample ACCEPT job

In the sample SMP/E jobs provided, the global zone name in the SMP/E CSI is GLOBAL. The distribution zone name is #DLIBZONE. The target zone name is #TLIBZONE. The sample jobs should be updated to reflect the CSI and zone names used at your installation.

6.1.3 SMP/E Options Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 12 on page 7-2. Use of values lower than these may result in failures in the installation process. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. Refer to the SMP/E manuals for instructions on updating the global zone.

Figure 12. SMP/E Options Subentry Values					
SUB-ENTRY Value Comment					
DSSPACE	300,500,900	use 900 directory blocks			
PEMAX	9999	The SMP/E default is larger than what can be specified here			

6.1.4 SMP/E CALLLIBS Processing

C Runtime is run time code only. There is no CALLLIB processing when installing C Runtime.

6.1.5 Unload the Sample JCL from the Product Tape

Sample installation jobs are provided on the distribution tape to help you install C Runtime. The following sample JCL will copy the C Runtime jobs from the tape. Add a job card and modify the parameters in lower case to uppercase values to meet your site's requirements before submitting.

```
//CNMCUNLD JOB (ACCOUNTING, INFORMATION), 'PROGRAMMER NAME',
            MSGLEVEL=(1,1), MSGCLASS=A, CLASS=A
//* JCL TO UNLOAD INSTALLATION JCL FROM THE C Runtime TAPE
//UNLOAD EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//INTAPE
         DD DSN=IBM.HPZ8330.F2,DISP=(OLD,KEEP),
//
            UNIT=tunit,
            VOL=SER=PZ8330, LABEL=(3,SL)
//
//OUTDISK DD DSNAME=jcl-library-name,
//
            DISP=(NEW, CATLG, DELETE),
//
            VOL=SER=dasdvol, UNIT=dunit,
            DCB=(DSORG=PO, RECFM=FB, LRECL=80, BLKSIZE=8800),
//
//
            SPACE=(8800,(10,10,5))
//SYSIN
         DD *
 COPY INDD=INTAPE,OUTDD=OUTDISK
/*
//
```

where tunit is the unit value matching the product tape or cartridge, icl-library-name is the name of the data set where the sample jobs will reside, dasdvol is the volume serial of the DASD device where the data set will reside, and dunit is the DASD unit type of the volume.

6.1.6 Perform SMP/E RECEIVE

Edit and submit sample job CNMCREC1 to perform the SMP/E RECEIVE for C Runtime. Consult the instructions in the sample job for more information.

NOTE: if you obtained C Runtime as part of a CBPDO, you can use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the C Runtime FMIDs as well as any service, HOLDDATA, or preventive service planning (PSP) information included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

Expected Return Codes and Messages: The job is considered successful if return code zero is received.

6.1.7 RECEIVE the Cumulative Service Tape

Figure 13 on page 7-4 shows the RECEIVE sample for C Runtime.

```
//CNMCREC1 JOB 'ACCOUNTING INFORMATION', 'SMP/E R8 RECEIVE',
// CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//********************
//**
//** LICENSED MATERIALS - PROPERTY OF IBM
                                                             **
//** 5697-B82 (C) COPYRIGHT TIVOLI SYSTEMS 1998
//** ALL RIGHTS RESERVED.
//**
//** US GOVERNMENT USERS RESTRICTED RIGHTS
//** - USE, DUPLICATION OR DISCLOSURE RESTRICTED BY
       GSA ADP SCHEDULE CONTRACT WITH IBM CORPORATION.
//**
//**
//**
         PROCEDURE: CNMCREC1
//**
//**
         FUNCTION:
//**
           THE FMID ADDED TO THE SMP/E DATABASE AND THE
//**
           REL FILES ASSOCIATED WITH THE FMID ARE UNLOADED
                                                             **
           FROM THE TAPE AND PLACED ON THE TARGET VOLUME.
//**
                                                             **
//**
           RECEIVE THE HPZ8330 FUNCTION (C RUNTIME LANGUAGE)
//**
//**
           THIS JOB SHOULD BE RUN IF YOU ARE INSTALLING ANY
//**
           PRODUCT THAT NEEDS TO HAVE THE C RUNTIME FMID
                                                             **
//**
           HPZ8330 TO LINK EDIT CORRECTLY.
//**
//**
         NOTE:
//**
           ARROWS "<==" POINT TO LINES WHICH ARE RECOGNIZED
//**
           AS REQUIRING CUSTOMIZATION. PARAMETERS AND
                                                             **
//**
            KEYWORDS NEEDING TO BE CUSTOMIZED ARE ENTERED
//**
           IN LOWER CASE TO MAKE THEM EASIER TO FIND. ALL
                                                             **
           JCL MUST BE IN UPPER CASE BEFORE SUBMITTING THE
//**
//**
           JOB TO AVOID A JCL ERROR. SPECIFIC ITEMS NEEDING **
//**
           CUSTOMIZATION INCLUDE:
                       1. SMP/E PROCEDURE NAME. IF YOU ARE
//**
//**
                          INVOKING SMP/E DIRECTLY USING
//**
                          GIMSMP, BE SURE ALL DATA SETS
//**
                          REQUIRED BY SMP/E ARE DEFINED AS
//**
                          DDDEFS OR ON DD STATEMENTS IN THE **
```

Figure 13 (Part 1 of 2). RECEIVE for C Runtime.

```
//**
                         JCL.
                                                          **
//**
                      2. YOUR C RUNTIME TARGET VOLUME
//**
                      3. YOUR UNIT NAME FOR TAPE DRIVES
//**
//**
        OUTPUT:
//**
           THE CONDITION CODE FOR THIS JOB SHOULD BE 0.
//**
//*********************
//CNMCREC1 EXEC smpproc
                                        <==1 YOUR SMP/E PROC
//*CNMCREC1 EXEC PGM=GIMSMP, REGION=4096K /* <==1 SMP/E PROG */
//*SMPCSI
           DD DSN=hlq.global.CSI,DISP=SHR /* <==1 SMPCSI DD */
//*SMPLOG
          DD DSN=hlq.SMPLOG,DISP=SHR
                                     /* <==1 SMPLOG DD */
//*SMPPTS
          DD DSN=hlq.SMPPTS,DISP=SHR
                                        /* <==1 SMPPTS DD */
//SMPTLIB DD UNIT=SYSDA, DISP=OLD,
              VOL=SER=tlibvol
                                           <==2 TLIB VOLUME
//SMPPTFIN DD DSN=SMPMCS, VOL=SER=PZ8330,
                                      <==3 UNIT NAME
              UNIT=unit,LABEL=(1,SL),
//
//
              DISP=OLD
//SMPCNTL DD *
 SET
          BDY(GLOBAL) .
 RECEIVE S(
            HPZ8330
          SYSMODS
          LIST
/*
//
```

Figure 13 (Part 2 of 2). RECEIVE for C Runtime.

NOTE: This step is bypassed if receiving the product from a CBPDO.

Expected Return Codes and Messages: The job is considered successful if return code zero is received.

6.1.8 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job CNMCALOC to allocate the SMP/E target and distribution libraries for C Runtime. Consult the instructions in the sample job for more information.

```
//CNMCALOC JOB 'ACCOUNTING INFORMATION', 'ALLOC TARG/DIST LIBS',
// CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//**********************
//*********************
//**
//** LICENSED MATERIALS - PROPERTY OF IBM
                                                            **
//** 5697-B82 (C) COPYRIGHT TIVOLI SYSTEMS 1998
                                                            **
//** ALL RIGHTS RESERVED.
                                                            **
//**
//** US GOVERNMENT USERS RESTRICTED RIGHTS
                                                            **
//** - USE, DUPLICATION OR DISCLOSURE RESTRICTED BY
//**
      GSA ADP SCHEDULE CONTRACT WITH IBM CORPORATION.
//**
                                                            **
//**
        PROCEDURE: CNMCALOC
//**
                                                            **
//**
        FUNCTION:
//**
           ALLOCATE THE C RUNTIME LANGUAGE TARGET AND
                                                            **
           DISTRIBUTION DATA SETS FOR THE PRODUCTS THAT
//**
//**
           DEPEND ON THIS LANGUAGE TO BE PRESENT FOR
//**
           CORRECT LINKEDIT PROCESSING
                                                            **
//**
//**
        NOTF:
                                                            **
//**
           ARROWS "<==" POINT TO LINES WHICH ARE RECOGNIZED
//**
           AS REQUIRING CUSTOMIZATION. PARAMETERS AND
//**
           KEYWORDS NEEDING TO BE CUSTOMIZED ARE ENTERED
                                                            **
//**
           IN LOWER CASE TO MAKE THEM EASIER TO FIND. ALL
//**
           JCL MUST BE IN UPPER CASE BEFORE SUBMITTING THE
                                                            **
           JOB TO AVOID A JCL ERROR. SPECIFIC ITEMS NEEDING
//**
//**
           CUSTOMIZATION INCLUDE:
                                                            **
//**
              1. HIGH LEVEL FOR TGT AND DIST DSETS
                                                            **
//**
              2. 2ND LEVEL FOR TGT AND DIST DSETS
//**
              3. UNIT TYPE FOR TARGET VOLUME
                                                            **
              4. VOLUME SERIAL OF TARGET VOLUME
//**
//**
              5. UNIT TYPE FOR DIST VOLUME
                                                            **
              6. VOLUME SERIAL OF DIST VOL
//**
//**
//**
        EXPECTED COND CODE: 0000
                                                            **
//**
```

Figure 14 (Part 1 of 2). Job to Allocate C Runtime

```
//*********************
//********************
//CNMCALOC PROC HLQ=,SLQ=,TUNIT=,DUNIT=,TVOLID=,DVOLID=
//ALLOC1 EXEC PGM=IEFBR14
//********************
//** TARGET LIBRARIES FOR THE C RUNTIME LANGUAGE
//********************
//SCNMCRUN
           DD DSN=&HLQ..&SLQ.SCNMCRUN,
//
           UNIT=&TUNIT,
//
           VOL=SER=&TVOLID,
//
           SPACE=(6144,(1640,10,25)),
//
           DCB=(LRECL=0, RECFM=U, BLKSIZE=6144),
//
           DISP=(NEW, CATLG)
//SCNMCSMP
           DD DSN=&HLQ..&SLQ.SCNMCSMP,
           UNIT=&TUNIT,
//
//
           VOL=SER=&TVOLID,
//
           SPACE=(8800, (15,5,5)),
//
           DCB=(LRECL=80, RECFM=FB, BLKSIZE=8800),
//
           DISP=(NEW,CATLG)
//********************
//* DISTRIBUTION LIBS FOR THE C RUNTIME LANGUAGE
//********************
           DD DSN=&HLQ..&SLQ.ACNMCRUN,
//ACNMCRUN
//
           UNIT=&DUNIT,
//
           VOL=SER=&DVOLID,
//
           SPACE=(6144,(1640,10,25)),
//
           DCB=(LRECL=0, RECFM=U, BLKSIZE=6144),
//
           DISP=(NEW,CATLG)
//ACNMCSMP
           DD DSN=&HLQ..&SLQ.ACNMCSMP,
//
           UNIT=&TUNIT,
//
           VOL=SER=&TVOLID,
//
           SPACE=(8800, (15,5,5)),
           DCB=(LRECL=80, RECFM=FB, BLKSIZE=8800),
//
//
           DISP=(NEW,CATLG)
//
         PEND
//ALLOCATE EXEC CNMCALOC,
                               <==1 DATA SET HIGH LEVEL
//
           HLQ=highlvl,
//
           SLQ='lowlvl.',
                               <==2 DATA SET SECOND LEVEL
//
                               <==3 TGT LIB UNIT TYPE
           TUNIT=tunit,
//
           TVOLID=tvol,
                               <==4 TGT LIB VOLSER
//
           DUNIT=dunit,
                               <==5 DIST LIB UNIT TYPE
//
                               <==6 DIST LIB VOLSER
           DVOLID=dvol
```

Figure 14 (Part 2 of 2). Job to Allocate C Runtime

Expected Return Codes and Messages: The job is considered successful if return code zero is received.

6.1.9 Create DDDEF Entries

Edit and submit sample job CNMCDDDF to create DDDEF entries for the SMP/E target and distribution libraries for C Runtime. Consult the instructions in the sample job for more information. Figure 15 on page 7-8 shows sample CNMCDDDF.

```
//CNMCDDDF JOB 'ACCOUNTING INFORMATION', 'PROGRAMMER NAME',
// CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*********************
//*********************
//**
//** LICENSED MATERIALS - PROPERTY OF IBM
                                                             **
//** 5697-B82 (C) COPYRIGHT TIVOLI SYSTEMS 1998
                                                             **
//** ALL RIGHTS RESERVED.
//**
                                                             **
//** US GOVERNMENT USERS RESTRICTED RIGHTS
//** - USE, DUPLICATION OR DISCLOSURE RESTRICTED BY
                                                             **
      GSA ADP SCHEDULE CONTRACT WITH IBM CORPORATION.
//**
//**
//**
        PROCEDURE: CNMCDDDF
//**
//**
        FUNCTION:
                                                             **
           DEFINE C RUNTIME TARGET AND DISTRIBUTION
//**
           DATA SETS FOR YOUR SMP/E ENVRIONMENT.
//**
                                                             **
//**
//**
           ADD DD DEFINITIONS TO TARGET AND DISTRIBUTION
//**
           ZONES.
                                                             **
//**
//**
        NOTE:
                                                             **
//**
           ARROWS "<==" POINT TO LINES WHICH ARE RECOGNIZED
//**
           AS REQUIRING CUSTOMIZATION. PARAMETERS AND
                                                             **
//**
           KEYWORDS NEEDING TO BE CUSTOMIZED ARE ENTERED
                                                             **
//**
            IN LOWER CASE TO MAKE THEM EASIER TO FIND. ALL
//**
           JCL MUST BE IN UPPER CASE BEFORE SUBMITTING THE
                                                             **
//**
           JOB TO AVOID A JCL ERROR. SPECIFIC ITEMS NEEDING
//**
           CUSTOMIZATION INCLUDE:
                                                             **
//**
              1. SMP/E PROCEDURE NAME. IF YOU ARE INVOKING
//**
                 SMP/E DIRECTLY USING GIMSMP, BE SURE ALL
//**
                 DATA SETS REQUIRED BY SMP/E ARE DEFINED AS
                                                             **
//**
                 DDDEFS OR ON DD STATEMENTS IN THE JCL.
//**
              2. YOUR SMP/E TARGET ZONE
                                                             **
              3. YOUR SMP/E DLIB ZONE
//**
              4. YOUR HIGH AND LOW LEVEL QUALIFIERS FOR YOUR
//**
//**
                 TARGET AND DISTRIBUTION LIBRARIES THAT WILL **
```

Figure 15 (Part 1 of 2). CNMCDDDF

```
//**
                 TARGET AND DISTRIBUTION LIBRARIES THAT WILL
//**
                 BE ALLOCATED TO YOUR SYSTEM.
//**
                                                           **
//**
        STEPS:
//**
//**
           DDDEF1 -- THIS STEP WILL DEFINE THE C RUNTIME
//**
                    DATE SETS NEEDED TO YOUR SYSTEM.
//**
        EXPECTED COND CODE: 0000 (IF DDDEFS DO NOT ALREADY
//**
//**
                                 EXIST)
//**
//*********************
//DDDEF1
         EXEC smpproc
                                          <==1 YOUR SMP/E PROC
//*DDDEF1 EXEC PGM=GIMSMP,REGION=4096K /* <==1 SMP/E PROG */
          DD DSN=hlq.global.CSI,DISP=SHR /* <==1 SMPCSI DD */
//*SMPCSI
          DD DSN=hlq.SMPLOG,DISP=SHR /* <==1 SMPLOG DD */
//*SMPLOG
//*SMPPTS DD DSN=hlq.SMPPTS,DISP=SHR
                                         /* <==1 SMPPTS DD */
//SMPCNTL DD *
 SET BDY(tgt1)
                             /* <==2 YOUR SMP/E TGT1 ZONE
 UCLIN.
  ADD DDDEF(SCNMCRUN)
      DA(highlvl.lowlvl.SCNMCRUN) SHR.
                                       /* <==4 */
  ADD DDDEF(SCNMCSMP)
                                         /* <==4 */
      DA(highlvl.lowlvl.SCNMCSMP) SHR.
  ADD DDDEF (ACNMCRUN)
      DA(highlvl.lowlvl.ACNMCRUN) SHR.
                                         /* <==4 */
  ADD DDDEF (ACNMCSMP)
      DA(highlvl.lowlvl.ACNMCSMP) SHR. /* <==4 */
  ENDUCL.
 SET BDY(dlib1)
                             /* <==3 YOUR SMP/E DLIB ZONE
 UCLIN.
  ADD DDDEF (ACNMCRUN)
      DA(highlvl.lowlvl.ACNMCRUN) SHR. /* <==4 */
  ADD DDDEF (ACNMCSMP)
      DA(highlvl.lowlvl.ACNMCSMP) SHR.
                                         /* <==4 */
 ENDUCL.
/*
//
```

Figure 15 (Part 2 of 2). CNMCDDDF

Expected Return Codes and Messages: The job is considered successful if return code zero is received.

6.1.10 Perform SMP/E APPLY CHECK

Edit and submit sample job CNMCAPLY to perform an SMP/E APPLY CHECK for C Runtime. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do not bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of ERRORS and not of WARNINGS (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

The GROUPEXTEND operand indicates that SMP/E apply all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages: The job is considered successful if return code of zero is received.

6.1.11 Perform SMP/E APPLY

Edit and submit sample job CNMCAPLY to perform an SMP/E APPLY for C Runtime. Consult the instructions in the sample job for more information.

Figure 16 on page 7-11 shows the APPLY job for C Runtime.

```
//CNMCAPLY JOB 'ACCOUNTING INFORMATION', 'SMP/E R8 APPLY',
// CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*********************
//**
//** LICENSED MATERIALS - PROPERTY OF IBM
                                                             **
//** 5697-B82 (C) COPYRIGHT TIVOLI SYSTEMS 1998
                                                             **
//** ALL RIGHTS RESERVED.
                                                             **
//**
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                                                             **
       GSA ADP SCHEDULE CONTRACT WITH IBM CORPORATION.
//**
//**
//**
         PROCEDURE: CNMCAPLY
//**
//**
         FUNCTION:
//**
           UPDATE THE TARGET ZONE WITH NEW FUNCTIONS
//**
           AND POPULATE THE TARGET LIBRARIES.
                                                             **
//**
//**
           THIS JOB SHOULD BE RUN IF YOU ARE INSTALLING
           C RUNTIME CODE ONTO YOUR SYSTEM.
//**
                                                             **
//**
//**
        NOTF:
                                                             **
//**
           ARROWS "<==" POINT TO LINES WHICH ARE RECOGNIZED
//**
           AS REQUIRING CUSTOMIZATION. PARAMETERS AND
                                                             **
//**
           KEYWORDS NEEDING TO BE CUSTOMIZED ARE ENTERED
                                                             **
//**
           IN LOWER CASE TO MAKE THEM EASIER TO FIND. ALL
//**
           JCL MUST BE IN UPPER CASE BEFORE SUBMITTING THE
                                                             **
//**
           JOB TO AVOID A JCL ERROR. SPECIFIC ITEMS NEEDING **
//**
           CUSTOMIZATION INCLUDE:
                                                             **
//**
                        1. SMP/E PROCEDURE NAME. IF YOU ARE
//**
                          INVOKING SMP/E DIRECTLY USING
                                                             **
//**
                          GIMSMP, BE SURE ALL DATA SETS
                                                             **
//**
                          REQUIRED BY SMP/E ARE DEFINED AS
//**
                          DDDEFS OR ON DD STATEMENTS IN THE
                                                             **
//**
                          JCL.
                                                             **
//**
                        2. YOUR TARGET ZONE NAME
                                                             **
//**
                       3. THE C RUNTIME FMID LISTED ON THE
                                                             **
//**
                          APPLY BELOW.
```

Figure 16 (Part 1 of 2). Job to APPLY C Runtime

```
//**
                    4. UNCOMMENT THE CHECK OPERAND IF
                       YOU WANT TO DO AN APPLY CHECK
//**
//**
                       BEFORE THE APPLY.
//**
//********************
//*********************
//CNMCAPLY EXEC smpproc
                                     <==1 YOUR SMP/E PROC
//*CNMCAPLY EXEC PGM=GIMSMP, REGION=4096K /* <==1 SMP/E PROG */
          DD DSN=hlq.global.CSI,DISP=SHR /* <==1 SMPCSI DD */
//*SMPCSI
//*SMPLOG
        DD DSN=hlq.SMPLOG,DISP=SHR /* <==1 SMPLOG DD */
//*SMPPTS
        DD DSN=hlq.SMPPTS,DISP=SHR
                                   /* <==1 SMPPTS DD */
//SMPCNTL DD *
 SET
         BDY(tgt1) .
                                 /* <==2 YOUR TLIB ZONE */
 APPLY SELECT
    HPZ8330
                                 /* <==3 FMID
    /* CHECK
                                 /* <==4 CHECK OPERAND */
/*
//
```

Figure 16 (Part 2 of 2). Job to APPLY C Runtime

Expected Return Codes and Messages: The job is considered successful if return code zero is received.

6.1.12 Authorize C Runtime Libraries

The C Runtime load libraries must be APF authorized. This includes the SCNMCRUN data set and all libraries concatenated to it, such as the Language Environment (LE) run time library. Add the data set name and volume serial of the libraries to the appropriate member of SYS1.PARMLIB:

• If you are using member IEAAPFxx, add the following:

```
highlvl.lowlvl..SCNMCRUN
                                volser
```

• If you are using member PROGxx, add the following:

```
APF ADD, DSNAME (highlvl.lowlvl..SCNMCRUN), VOLUME (volser)
```

6.1.13 Perform SMP/E ACCEPT CHECK

Edit and submit sample job CNMCACPT to perform an SMP/E ACCEPT CHECK for C Runtime. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do not bypass the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis

identifies the cause only of ERRORS and not of WARNINGS (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

The GROUPEXTEND operand indicates that SMP/E accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages: The job is considered successful if return code zero is received.

6.1.14 Perform SMP/E ACCEPT

Edit and submit sample job CNMCACPT to perform an SMP/E ACCEPT for C Runtime. Consult the instructions in the sample job for more information.

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

Figure 17 on page 7-14 shows the ACCEPT job for C Runtime.

```
//CNMCACPT JOB 'ACCOUNTING INFORMATION', 'SMP/E R8 ACCEPT',
// CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//********************
//**
//** LICENSED MATERIALS - PROPERTY OF IBM
                                                             **
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//**
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       GSA ADP SCHEDULE CONTRACT WITH IBM CORPORATION.
//**
//**
//**
         PROCEDURE: CNMCACPT
//**
//**
         FUNCTION:
//**
           UPDATE THE DISTRIBUTION ZONE WITH NEW FUNCTIONS
//**
            AND POPULATE THE DISTRIBUTION LIBRARIES.
                                                             **
//**
//**
            THIS JOB SHOULD BE RUN IF YOU ARE INSTALLING
//**
            C RUNTIME CODE ONTO YOUR SYSTEM.
                                                             **
//**
//**
         NOTE:
                                                             **
//**
           ARROWS "<==" POINT TO LINES WHICH ARE RECOGNIZED
//**
           AS REQUIRING CUSTOMIZATION. PARAMETERS AND
//**
            KEYWORDS NEEDING TO BE CUSTOMIZED ARE ENTERED
//**
            IN LOWER CASE TO MAKE THEM EASIER TO FIND. ALL
//**
            JCL MUST BE IN UPPER CASE BEFORE SUBMITTING THE
                                                             **
            JOB TO AVOID A JCL ERROR. SPECIFIC ITEMS NEEDING **
//**
//**
            CUSTOMIZATION INCLUDE:
                                                             **
//**
                       1. SMP/E PROCEDURE NAME. IF YOU ARE
//**
                          INVOKING SMP/E DIRECTLY USING
//**
                          GIMSMP, BE SURE ALL DATA SETS
                                                             **
//**
                          REQUIRED BY SMP/E ARE DEFINED AS
//**
                          DDDEFS OR ON DD STATEMENTS IN THE
                                                             **
//**
                          JCL.
//**
                       2. YOUR DISTRIBUTION ZONE NAME
                                                             **
//**
                       3. THE C RUNTIME FMID LISTED ON THE
                                                             **
//**
                          ACCEPT BELOW.
```

Figure 17 (Part 1 of 2). Job to ACCEPT C Runtime

```
//**
                    4. UNCOMMENT THE CHECK OPERAND IF
                                                     **
//**
                       YOU WANT TO DO AN ACCEPT CHECK
//**
                       BEFORE THE ACCEPT.
                                                     **
//**
//********************
//*******************
//CNMCACPT EXEC smpproc
                                     <==1 YOUR SMP/E PROC
//*CNMCACPT EXEC PGM=GIMSMP, REGION=4096K /* <==1 SMP/E PROG */
//*SMPCSI
          DD DSN=hlq.global.CSI,DISP=SHR /* <==1 SMPCSI DD */
//*SMPLOG DD DSN=hlq.SMPLOG,DISP=SHR /* <==1 SMPLOG DD */
        DD DSN=hlq.SMPPTS,DISP=SHR
                                   /* <==1 SMPPTS DD */
//*SMPPTS
//SMPCNTL DD *
 SET
         BDY(dlib1) .
                                /* <==2 YOUR DLIB ZONE */
 ACCEPT SELECT
    HPZ8330
                                 /* <==3 FMID
                                                     */
    /* CHECK
                                 /* <==4 CHECK OPERAND */
/*
//
```

Figure 17 (Part 2 of 2). Job to ACCEPT C Runtime

Expected Return Codes and Messages: The job is considered successful if return code zero is received.

7.0 TME 10 Netview for OS/390 C Runtime Install Logic

7.1 SMP/E Modification Control Statements

The SMP/E Modification Control Statements (SMPMCS) for TME 10 Netview for OS/390 C Runtime are contained in the SMPMCS file on the installation tape. The SMPMCS for each FMID in the product will be loaded to the SMPPTS dataset, with a member name matching the FMID, when the FMID is SMP/E RECEIVEd. You may browse or print these members using TSO/E, ISPF, or IEBGENER (or IEBPTPCH).

7.2 SMP/E JCLIN

The JCLIN for TME 10 Netview for OS/390 C Runtime is contained in the RELFILEs on the installation tape. These files will be loaded to disk by SMP/E when the product is SMP/E RECEIVEd. You may browse or print these files using TSO/E, ISPF, or IEBGENER (or IEBPTPCH).

The file containing JCLIN is:

FMID HPZ8330: 'IBM.HPZ8330.F1(HPZ8330)'

The high-level qualifier is the qualifier specified as the DSPREFIX in the SMP/E OPTIONS.

Reader's Comments

Program Directory for TME 10 NetView for OS/390 C Runtime Version 1 Release 2

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1	2	3	4	5	N			

			Satis	factio	n	
Ease of product installation	1	2	3	4	5	N
Contents of program directory	1	2	3	4	5	Ν
Installation Verification Programs	1	2	3	4	5	Ν
Time to install the product	1	2	3	4	5	Ν
Readability and organization of program directory tasks	1	2	3	4	5	Ν
Necessity of all installation tasks	1	2	3	4	5	Ν
Accuracy of the definition of the installation tasks	1	2	3	4	5	Ν
Technical level of the installation tasks	1	2	3	4	5	Ν
Ease of getting the system into production after installation	1	2	3	4	5	N

How di	id you order this product?
	CBIPO CBPDO CustomPac ServerPac Independent Other
Is this	the first time your organization has installed this product?
	Yes No

Were the people who did the installation experienced with the installation of MVS products?

	Yes	
	No	
If yes,	how many years?	
	have any comments to make about your ratings above, or any other aspen below:	ect of the product installation, please
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Pleas	e provide the following contact information:	
N	ame and Job Title	
ō	rganization	
_		
Ā	ddress	
Te	elephone	

Thank you for your participation.

Please send the completed form to (or give to your IBM representative who will forward it to the TME 10 NetView for OS/390 C Runtime Development group):

IBM Corporation P.O. Box 12195 Research Triangle Park, NC 27709 ATTENTION: CGMD/B500

FAX Number: (919) 543-4118

E-Mail: USIBHPD @ VNET.IBM.COM

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