

# CA Chorus™ Software Manager

## Site Preparation Guide

Version 06.0.00, Fifth Edition



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# CA Technologies Product References

This document references the following CA Technologies products:

- CA Chorus™ Software Manager (CA CSM)
- CA ACF2™ for z/OS
- CA Chorus™
- CA Common Services for z/OS
- CA Database Management Solutions for DB2 for z/OS
- CA Datacom/MSM
- CA Distributed Security Integration for z/OS (CA DSI Server)
- CA PDSMAN® PDS Library Management (PDSMAN)
- CA Top Secret® for z/OS

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# Documentation Changes

## 5th Edition (February 2015)

The following documentation updates have been made after the last release of this documentation:

- Set Up Security > [Access Requirements for User ID Associated with the CA CSM Application Server](#) (see page 23): added a required READ permission to BPX.CAHFS.CHANGE.FILE.TIME

## 4th Edition (October 2014)

The following documentation updates have been made after the last release of this documentation:

- Set Up Security > [Access Requirements for User ID Associated with the CA CSM Application Server](#) (see page 23): added permissions for the data sets that are referenced in particular option file keywords; added BPX.DAEMON to the list of FACILITY class profiles

## 3rd Edition (August 2014)

The following documentation updates have been made after the last release of this documentation:

- Check Requirements and Ports > [Software Requirements](#) (see page 14): removed CA-C Runtime as it is not a requirement anymore; added Microsoft Internet Explorer 11 as a supported browser; specified versions of CA Common Services for z/OS to which to apply PTFs for passing APPLID

## 2nd Edition (May 2014)

The following documentation updates have been made after the last release of this documentation:

- Check Requirements and Ports > [Software Requirements](#) (see page 14): added a note about where to find more information about applying CETN600; added an important note about PTFs RO52583 and RO68659 for CA Common Services for z/OS Release 14.1

## 1st Edition (April 2014)

The following documentation updates have been made after the last release of this documentation:

- Overview -> [How to Prepare for CA CSM Installation](#) (see page 10): updated and streamlined the process
- Check Requirements and Ports > [Disk Space Requirements](#) (see page 13): added an important note about changes in the utility program IOEAGFMT in z/OS V2.1
- Check Requirements and Ports > [Software Requirements](#) (see page 14): updated the section
- [Set Up Security](#) (see page 21): added a chapter
- Use the CA CSM Prerequisite Validator Utility > Prepare for Installation > [Verify the Prerequisite Validator Requirements](#) (see page 27): updated Java requirements
- Use the CA CSM Prerequisite Validator Utility > Execute from Native USS Command Prompt > [Modify Default Properties](#) (see page 30): updated existing parameters and added new parameters
- [Set Up Security for CA CSM with CA ACF2 for z/OS](#) (see page 37): updated the section with information on setting up PassTickets for external operations
- [Set Up Security for CA CSM with CA Top Secret for z/OS](#) (see page 49): updated the section with information on setting up PassTickets for external operations
- [Set Up Security for CA CSM with IBM RACF](#) (see page 61): updated the section with information on setting up PassTickets for external operations



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# Chapter 1: Overview

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This guide describes the preparation that you should do before you install CA CSM Version 6.0 or upgrade CA CSM to the latest version.

This section contains the following topics:

[Audience](#) (see page 9)

[Required Skills](#) (see page 9)

[How to Prepare for CA CSM Installation](#) (see page 10)

## Audience

This guide details the tasks that a system programmer and security administrator can complete before you begin the installation or upgrade tasks that the *Installation Guide* describes. Following this Site Preparation Guide can dramatically simplify your installation experience.

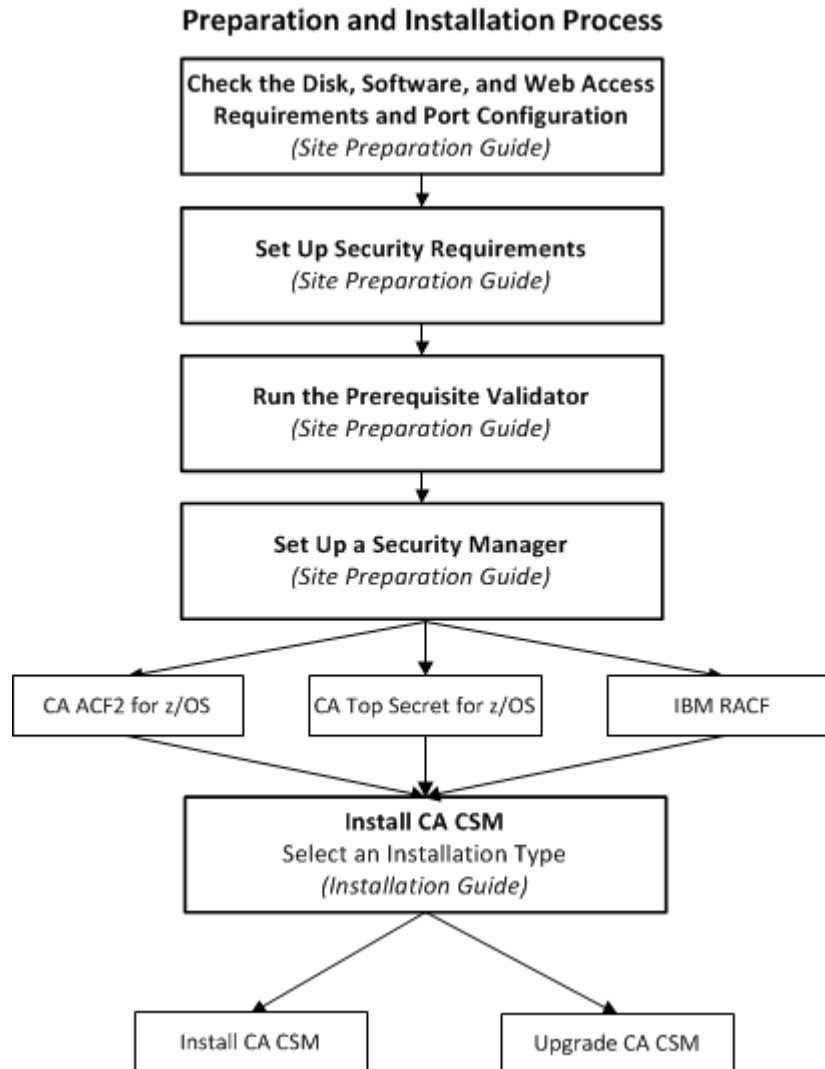
## Required Skills

Performing the tasks that this guide describes is a team effort that requires the following skills:

- z/OS UNIX System Services (USS) and file systems, to set up a functional UNIX and file systems environment
- Security server (for example, CA ACF2 for z/OS, CA Top Secret for z/OS, or IBM RACF) or the security product you use, to authorize access to resources
- Java for z/OS
- CA Common Services for z/OS
- Network administration, to set up access for acquiring and downloading product packages

## How to Prepare for CA CSM Installation

The following diagram provides a high-level overview of the CA CSM preparation and installation process and the guides that you use to complete it.



To prepare for installation and upgrade of CA CSM, complete the following steps:

1. Check the disk, software, and web access requirements, and port configuration as described in the *Site Preparation Guide*.
2. Set up security requirements as described in the *Site Preparation Guide*.
3. Run the Prerequisite Validator utility as described in the *Site Preparation Guide*.

4. Set up a security manager as described in the *Site Preparation Guide*.
5. Install CA CSM Version 6.0 or upgrade your existing version of CA CSM to Version 6.0 as described in the *Installation Guide*.



# Chapter 2: Check Requirements and Ports

---

Verify that disk requirements, software requirements, and web access requirements are met, and the TCP/IP ports are configured.

This section contains the following topics:

[Disk Space Requirements](#) (see page 13)

[Software Requirements](#) (see page 14)

[Web Access Requirements](#) (see page 18)

[TCP/IP Port Reservation](#) (see page 19)

## Disk Space Requirements

CA CSM has the following disk space requirements:

**Note:** All space allocations are described for 3390 DASD.

- For the installation and setup of CA CSM:

- Hierarchical File System (HFS) or zSeries File System (zFS) space = 2500 cylinders

**Note:** We recommend using zFS file systems. For information about how to migrate from HFS file systems to zFS file systems, see the latest *IBM z/OS Migration* guide.

**Important!** Starting from z/OS V2.1, IBM has changed the way the utility program IOEAGFMT (zFS data set formatter) functions. The utility requires the zFS kernel address space to be active before any execution of IOEAGFMT is allowed. If you use zFS file systems at your site, you must ensure that zFS kernel address space is active. For more information, see the *IBM z/OS Distributed File Services zFS Administration*.

- z/OS space = 2400 cylinders

This space contains the CA Datacom/MSM SMP/E environment and runtime libraries. The SMP/E environment contains the CA Datacom/MSM, CA Datacom Server, and CA CSM components.

- A TSO region = 143360 KB (at minimum)

- SDS root space = 100 tracks (approximately)

For the Software Deployment Service (SDS), the aggregated amount of DASD space for the initial DASD setup is 100 tracks. This amount includes CA CSM and SDS space on the CA CSM host only, and does *not* include space for the deployment snapshot file system. Extra space is needed for the SDS target system.

- SDS deployment space = 500 cylinders

For SDS, each target system needs 500 cylinders of 3390, except CA Database Management Solutions for DB2 for z/OS, which needs 1500 cylinders.

- For the operation of CA CSM:

After initial setup, CA CSM allocates more HFS or zFS files depending on the download of products and maintenance. The amount of space that is allocated varies depending on the number of products and maintenance, and the size of any associated files.

## Software Requirements

CA CSM has the following *minimum* software requirements:

### CA Technologies software

Your system must have CA Common Services for z/OS Release 14.1 or Version 14.0.

- Verify that CETN600 is applied to CA CSM driving system, and all the target systems for the Software Deployment Service (SDS) and the Software Configuration Service (SCS).

When you install CETN600 into CA Common Services for z/OS Release 14.1 or Version 14.0, it replaces CETN400 and CETN500.

Apply all published CETN600 maintenance, deploy to all target systems, and verify that HOLDDATA instructions are completed. If you do not apply CETN600, CA CSM is operational. However, the Software Configuration Service (SCS) and the Software Deployment Service (SDS) are unavailable.

**Note:** For more information about applying CETN600, see *Configuring SDS and SCS in CA CSM* in the CA CSM bookshelf under User Documentation By Task.

- Apply PTFs RO40945, RO44235, and RO44412 to Version 14.0. If you do not plan to use SCS, you can skip PTF RO44235.

Apply PTFs RO53900 and RO53926 to Release 14.1.

**Important!** Apply the PTFs to Release 14.1 in the specified order or simultaneously to avoid PTF processing errors.

**Important!** If you have PTF RO52583 for CA Common Services for z/OS Release 14.1 applied, verify that HIPER PTF RO68659 is also applied. This prevents SOC4 in CA Datacom utilities. Otherwise, the job that initializes a new CA Datacom database environment may ABEND.

After you have installed CETN600 to CA Common Services for z/OS, apply RO64950 to Version 14.0, or apply RO64952 to Release 14.1 to support SDS and SCS.

For passing APPLID on CAICCI authentication calls, apply PTFs RO30506, RO30937, and RO33987 to Version 14.0. No PTF is needed for Release 14.1.

CA Common Services for z/OS load libraries CAW0LOAD and CAW0PLD (Release 14.1 and Version 14.0) must be accessible to CA CSM through the Job Control Language or system LINKLST. The following services are required:

- CAICCI

**Note:** CAICCI must be configured and running on CA CSM driving system and on all the target systems for SDS and SCS.

- CAIENF

- CAIRIM

**Note:** For more information about CA Common Services for z/OS, see the CA Common Services for z/OS user documentation.

If you have other CA Technologies software products, verify that you have installed mandatory maintenance for these products:

- If you use CA ACF2 for z/OS, apply PTF RO31548 to CA ACF2 for z/OS r14. Alternatively, apply PTF RO30898 to CA ACF2 for z/OS r15.
- If you use CA Top Secret for z/OS, apply PTF RO31780 to CA Top Secret for z/OS r14. Alternatively, apply PTF RO30836 to CA Top Secret for z/OS r15.
- If you use CA PDSMAN on your SCS target system, apply PTF RO26804 to CA PDSMAN r7.6. Alternatively, apply PTF RO25866 to CA PDSMAN r7.7.

### IBM software

Your system must satisfy the following requirements:

- Your system has the latest version of z/OS or the last previous version. IBM supports the most currently announced GA version plus the one previous version.
- Your system uses the TCP/IP protocol suite of z/OS Communications Server, with the FTP.DATA data set that is configured with the JESINTERFACELEVEL 2 statement. When installation jobs are submitted through FTP, the CA CSM installation process requires the JESINTERFACELEVEL 2 statement to obtain job status and output. You can return the JESINTERFACELEVEL to its previous value after CA CSM is successfully installed.

Alternatively, you can configure the CA CSM installation process to use TSO for job submission and processing.

- Your system has at least SMP/E V3R5.
- Your system has at least IBM 64-bit Java SDK 1.7 for z/OS. We recommend that you use SR5.

You can download the software in non-SMP/E installable format. For more information, go to the following website and click the link to the software: <http://www-03.ibm.com/servers/eserver/zseries/software/java/>. This web page lists the available IBM SDK releases. The release link redirects you to a more detailed web page. The detailed page usually has a link in the text for *additional install information*. The page that opens from this link can have helpful information to customize the JZOS Batch Launcher function that CA CSM uses. For example, this information can help you create an alternate JVM loadlib for CA CSM, if that is a preferred configuration at your site.

- Your Language Environment library CEE.SCEERUN2 is APF-authorized.

### PC software

The computer that is used to access CA CSM must have a web browser with access to your mainframe. CA CSM was tested with the following browsers:

- Mozilla Firefox 28
- Google Chrome 33
- Microsoft Internet Explorer 8, 9, and 10 (Page Default document mode only)
- Microsoft Internet Explorer 11 (document mode 5 *or* Edge document mode only)

**Note:** For more information about document mode, see Microsoft Internet Explorer user documentation.

We recommend you use Mozilla Firefox.

Verify that your web browser has JavaScript and cookies that are enabled for the server where CA CSM is running.

**Note:** The recommended screen resolution is 1024 x 768 pixels or higher. If you have a lower screen resolution, some elements of the CA CSM web-based interface do not display properly.



## z/OS Configuration

To run the CA CSM installer utility and CA CSM application server successfully, specify the following OMVS limits in SYS1.PARMLIB(BPXPRMxx):

**MAXASSIZE(nnnnn)**

Set to 2147483647.

**MAXCPUIME(nnnnn)**

Set to at least 20000.

**MAXFILEPROC(nnnnn)**

Set to at least 10000.

**MAXTHREADS(nnnnn)**

Set to at least 1000.

**MAXTHREADTASKS(nnnnn)**

Set to at least 1000.

**Note:** To display current settings, issue the following command:

```
DISPLAY OMVS,OPTIONS
```

You can use the SETOMVS operator command to change these values dynamically without performing the IPL of the operating system. To change them dynamically, issue the following operator commands:

```
SETOMVS MAXASSIZE=2147483647
SETOMVS MAXCPUIME=20000
SETOMVS MAXFILEPROC=10000
SETOMVS MAXTHREADS=1000
SETOMVS MAXTHREADTASKS=1000
```

## CSF Initialization

The CA CSM application server (MSMTC) tries to set a random file in use to track its user sessions. If one is created, CA CSM uses it. The creation of this file is performed in the base Apache Tomcat application regardless of the platform. If this file cannot be set, the CA CSM application uses its own logic to track user sessions. In z/OS, the successful creation of the random file requires that your site has an Integrated Cryptographic Services Facility (ICSF) processor that is attached and enabled. If your site does not have the ICSF processor, CA CSM issues messages similar to the following example, and continues to initialize:

```
Aug 5, 2010 4:56:37 PM org.apache.catalina.session.ManagerBase setRandomFile
WARNING: Failed to close randomIS.
```

If an ICSF processor is enabled, initialize the CSF address space completely before starting the CA CSM application server (MSMTC). If you do not initialize the CSF address space, CA CSM fails; and it fails without retrying. Perform a recycle of the MSMTC started task to recover.

If you have an ICSF processor that is attached to your LPAR, we recommend that you use your system automation software to add the CSF started task as a prerequisite to the start of the MSMTC started task.

Ensure that you only start the MSMTC started task after a successful initialization of the CSF address space. Set your system automation software to look for the following CSF initialization messages:

CSFM001I ICSF INITIALIZATION COMPLETE

This message signals that the CSF services have been started but are not available and a cipher key has not yet been loaded.

Or

CSFM400I CRYPTOGRAPHY - SERVICES ARE NOW AVAILABLE.

This message signals that ICSF services are available and a cipher key has been loaded.

**Note:** For more information, see the *IBM z/OS Cryptographic Services PKI Services Guide and Reference (SA22-7693-12)*.

## Web Access Requirements

Your network administrator must configure access to the following websites and FTP sites:

- supportservices.ca.com (using HTTPS Port Number 443)
- ftp.ca.com (using FTP Port Number 21)
- ftpca.ca.com (using FTP Port Number 21)

**Note:** CA CSM uses this FTP server to accumulate minimal information. This information includes the site ID, the product, and the user ID for [the CA Support Online website](#). Sometimes site access rules deny an FTP connection that is established for this purpose or the connection cannot be established for any other reason. Then CA CSM still continues to function.

- scftpd.ca.com (using FTP Port Number 21)

- ftpdownloads.ca.com (using FTP Port Number 21)
- supportftp.ca.com (using FTP Port Number 21)
- sdownloads.ca.com (using HTTPS Port Number 443)

**Note:** sdownloads.ca.com is only required if you use the Use HTTPS for Downloads acquisition option under System Settings, Software Acquisition on the Settings page. If you authorize the ca.com domain for both ports 80 and 443, you do not need to authorize sdownloads.ca.com.

In addition, your network administrator must define a Domain Name System (DNS) entry for localhost.

## TCP/IP Port Reservation

We recommend that you reserve these TCP/IP ports:

- CA CSM application server HTTP port
- CA DSI Server port
- CA CSM application server redirect port
- CA CSM application server shutdown port

To reserve the ports, update the z/OS TCP/IP profile data set.

### Example:

```
PORT      Application ID
22120 TCP MSMTC* ; CA CSM Application Server HTTP port
22130 TCP MSMTC* ; CA DSI server port
22140 TCP MSMTC* ; CA CSM Application server redirect port
22150 TCP MSMTC* ; CA CSM application server shutdown port
```

**Note:** We recommend that for security reasons you use an 8-character-long Application ID instead of using asterisks (\*), as shown in the example in this section. To change **MSMTC** to an 8-character-long job name, edit the CA CSM startup JCL (*RunTimeMVSHLQPrefix.JCL(MSMTC*SRV)). Then, change **MSMTC\*** to the same 8-character-long job name in the z/OS TCP/IP profile data set.

If you use a 5-character-long name for your CA CSM application server, you must use an asterisk (\*) against the CA DSI Server port number definition because of a unique sequence number that is appended to the Application ID.



# Chapter 3: Set Up Security

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This section contains the following topics:

[Access Requirements to Download, Install, and Set Up CA CSM](#) (see page 21)

[Access Requirements for User ID Associated with the CA CSM Application Server](#) (see page 23)

[Set Up USS Authorization for Users](#) (see page 24)

[CA CSM Associated Security IDs - OMVS Segment and Home Directory](#) (see page 26)

[SAF Check During SMP/E Processing](#) (see page 26)

## Access Requirements to Download, Install, and Set Up CA CSM

To download, install, and to set up CA CSM, your security administrator must configure the following access authorities on your system:

1. Access to UNIX System Services (USS) for downloads and the implementation of CA CSM:

If you decide to create and mount new file systems for CA CSM, you need *one* of the following authorities:

- If your site uses CA SAF HFS security, BPX.CAHFS.CHANGE.FILE.ATTRIBUTES
- If your site does *not* use CA SAF HFS security, UID(0) or BPX.SUPERUSER authority

**Note:** CA SAF HFS security is a feature in CA ACF2 for z/OS and CA Top Secret for z/OS.

2. UPDATE authority to the following data sets or libraries for the user implementing CA CSM:

- SYSx.PARMLIB
- Procedure library that stores the JCL jobs that are used to start the CA CSM address spaces, for example, SYS3.PROCLIB
- (Optional) The master catalog if you decide to define alias entries for the CA CSM data set prefixes

3. Access for the user ID associated with the CA CSM setup utility:

- Permission to access the following FACILITY class profiles that are related to UNIX:
  - BPX.FILEATTR.APF (READ authority)
  - BPX.FILEATTR.PROGCTL (READ authority)

- BPX.FILEATTR.SHARELIB (READ authority)
- BPX.DAEMON (READ authority)
- BPX.SERVER (UPDATE authority)
- BPX.CONSOLE (READ authority)
- Permission to access the SERVAUTH class profile, EZB.STACKACCESS (READ authority)
- Permission to access the CSFSERV class profile, CSFOWH (READ authority) providing you want to perform SMP/E GIMUNZIP hash validation
- Permission to create and modify data sets for the qualifiers (CA CSM MVS SMP/E and runtime data sets) specified in the options file.  
**Note:** Your user ID can have BPX.SUPERUSER access and it can switch to SUPERUSER. Then the switched SU ID requires a CREATE and MODIFY access to the MVS data set qualifiers that are specified in the options file.
- If you are using IBM RACF, access to the following data sets for program control:
  - SYSx.MIGLIB
  - CEE.SCEERUN2
  - Members IEANTCR, IEANTDL, and IEANTRT of SYS1.CSSLIB
  - Member JVMLDM76 (for 64-bit Java 7.0) of the data set where Java load modules are installed
  - (Optional) Member IDIXCEE of SYS1.IDI.SIDIAUTH, only if you use IDIXCEE as an optional exit

**Note:** To display the resources, issue the RLIST command.

You can set IBM RACF to control programs. If the resources do not exist, issue the following command:

```
RDEFINE PROGRAM member ADDMEM('hlq.libraryname')//NOPADCHK) UACC(READ)
```

For example:

```
RDEFINE PROGRAM IEANTCR ADDMEM('SYS1.CSSLIB')//NOPADCHK) UACC(READ)
```

If the resources exist, issue the following command:

```
RALTER PROGRAM member ADDMEM('hlq.libraryname')//NOPADCHK) UACC(READ)
```

For example:

```
RALTER PROGRAM IEANTCR ADDMEM('SYS1.CSSLIB')//NOPADCHK) UACC(READ)
```

**Note:** To set all members of a data set as a controlled program, replace the member name with an asterisk (\*). For example:

```
RDEFINE PROGRAM * ADDMEM('SYS1.CSSLIB'//NOPADCHK) UACC(READ)
```

**Important!** If you are planning to use zFS, add IOE.SIOELMOD (or equivalent library) to program control.

## Access Requirements for User ID Associated with the CA CSM Application Server

For CA CSM to operate successfully, the user ID associated with the CA CSM application server (MSMTC job or started task) requires the following access authorities:

1. Your security administrator must configure access to UNIX System Services (USS) for CA CSM. The CA CSM application server user ID must have an OMVS segment with a valid home directory with RDWR access. The CA CSM application server user ID is expected to have UID(0). If you want to configure CA CSM without UID(0), see the *Administration Guide*.
2. Your security administrator must configure the following access:
  - Permissions for MSMMUF and MSMDBSRV to the data sets that are referenced in the following option file keywords:
    - DatabaseHLQ (READ, UPDATE, and ALTER authority)
    - CCSdsn, CCScaipdsdsn, and RunTimeMVSHLQPrefix (READ authority)
  - Permissions for MSMTC to the data sets that are referenced in the following option file keywords:
    - RunTimeMVSHLQPrefix (READ authority)
    - MVSHFSDsnPrefix, sisGimunzipTempPrefix, and the sisExecutorServerDsnPrefix (CREATE, READ, UPDATE, and ALTER authority)
  - Permission to access the following FACILITY class profiles that are related UNIX:
    - BPX.FILEATTR.APF (READ authority)
    - BPX.FILEATTR.PROGCTL (READ authority)
    - BPX.FILEATTR.SHARELIB (READ authority)
    - BPX.SERVER (UPDATE authority)
    - BPX.CONSOLE (READ authority)
    - BPX.DAEMON (READ authority)
  - Permission to access the SERVAUTH class profile, EZB.STACKACCESS (READ authority)

- CA ACF2 for z/OS only: MUSASS permission for users who start CA CSM
- If your site uses CA SAF HFS security, the following access:
  - BPX.CAHFS.SET.RLIMIT (READ authority)
  - BPX.CAHFS.PTRACE (READ authority)
  - BPX.CAHFS.MOUNT (READ authority)
  - BPX.CAHFS.UNMOUNT (READ authority)
  - BPX.CAHFS.CHANGE.FILE.MODE (READ authority)
  - BPX.CAHFS.CHANGE.FILE.TIME (READ authority)

**Note:** CA SAF HFS security is a feature in CA ACF2 for z/OS and CA Top Secret for z/OS.

**Note:** If you are using SAF security, consider the following options:

- If the CSFSERV class is active, verify that the user ID for this request in the CA CSM application server has READ access to CSFRNG and CSFDSV.
- If the APPL class is active, verify that the user ID for the request in the CA CSM application server has READ access to the OMVSAPPL resource.

**Note:** CA CSM executes GIMUNZIP in the security context of the CA CSM application server ID. If SMP/E security is active, the CA CSM application server ID must have READ access to the GIM.PGM.GIMUNZIP resource in the SAF FACILITY class.

## Set Up USS Authorization for Users

CA CSM users require access to USS. Each user must have an OMVS segment. Your security administrator must set up these segments.

**Follow these steps:**

1. Select an OMVS UID number to associate with each user ID. Your security administrator can have a policy for assigning OMVS UID numbers. If not, use a unique number.

**Note:** For more information about OMVS UID numbers, see the *IBM UNIX System Services Planning*.



2. Define the OMVS segment for the user. For a user ID *uuuuuuu*, UID number *nnn*, and home directory *path\_name*, enter the following commands:

- For CA ACF2 for z/OS systems, enter the following commands:

```
SET PROFILE(USER) DIV(OMVS)
INSERT uuuuuuu UID(nnn) HOME(path_name) OMVSPGM(/bin/sh)
```

- For CA Top Secret for z/OS systems, enter the following commands:

```
TSS ADD(uuuuuuu) HOME(path_name) OMVSPGM(/bin/sh) UID(nnn)
GROUP(ggggggg)
```

- For the IBM RACF systems, enter the following command:

```
ALU uuuuuuu OMVS(UID(nnn) HOME(path_name) PROGRAM(/bin/sh))
```

**Note:** The OMVS segment must contain the following components:

- A home directory (HOME)
- A login shell (PROGRAM or OMVSPGM)

3. Ensure that you have completed this process for each user ID that you want to authorize. To confirm the contents of the OMVS segment, enter the following commands:

- For CA ACF2 for z/OS systems, enter the following commands:

```
SET PROFILE(USER) DIV(OMVS)
LIST uuuuuuu
```

- For CA Top Secret for z/OS systems, enter the following command:

```
TSS LIST(uuuuuuu) DATA(ALL)
```

- For the IBM RACF systems, enter the following command:

```
LISTUSER uuuuuuu OMVS NORACF
```

4. Select a home directory to associate with each user ID. Ensure that it exists and that the UID has read/write access to it.

You can use the UNIX directory (*path\_name*), as shown in Step 2, or you can use a customized home directory name.

For example, to set up a directory that is named */u/name* for UID*nnn*, issue the following commands in the OMVS UNIX shell:

```
mkdir /u/name
chown nnn /u/name
chmod 775 /u/name
```

5. Confirm the owner and access to the directory by using the following command:

```
ls -ld /u/name
```

The following result appears:

```
drwxrwxr-x  2 user  group  8192 Sep  31 14:58 /u/name
```

## CA CSM Associated Security IDs - OMVS Segment and Home Directory

If the mmserv USS directory path is unavailable, CA CSM does not operate. Assign a user ID to the application address spaces with this home directory path. This step prevents the possibility of CA CSM filling up a USS system or another application file system. This action ensures that CA CSM is isolated to the file systems allocated for its use.

A user ID with a valid OMVS segment defined must be assigned to the CA CSM address spaces. This OMVS segment requires that a valid home directory is defined. We recommend that the user IDs are assigned to a home directory of the USS path for the mmserv directory. If the default USS directory paths are used, this path is `/u/users/mmserv`.

**Note:** For more information, see user documentation for your security product.

## SAF Check During SMP/E Processing

All CA CSM features that execute SMP/E commands do it in the security context of the user that is logged in to CA CSM and drives these features. Depending on the CA CSM feature, users must have READ access to different sets of SMP/E SAF facility class resources.

**Note:** CA CSM executes GIMUNZIP in the security context of the CA CSM application server ID. If SMP/E security is active, the CA CSM application server ID must have READ access to the GIM.PGM.GIMUNZIP resource in the SAF FACILITY class.

**Note:** For more information about how to enable SAF check, see the *Administration Guide*.

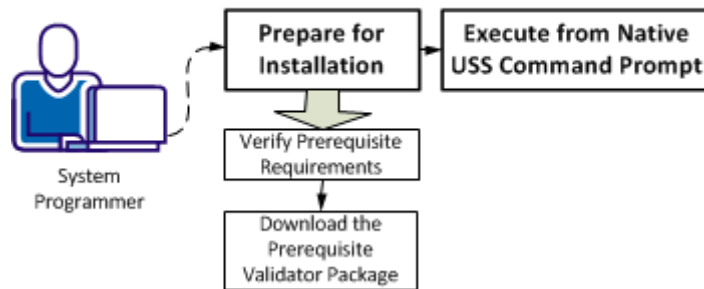
# Chapter 4: Use the CA CSM Prerequisite Validator Utility

---

The Prerequisite Validator utility helps you ensure that all necessary security authorizations are in place before you install CA CSM.

You perform the following tasks to verify that all necessary authorizations are in place before you begin your installation tasks:

## Using the Prerequisite Validator Utility



1. [Prepare for installation](#) (see page 27).
  - a. [Verify the Prerequisite Validator requirements](#) (see page 27).
  - b. [Download the Prerequisite Validator product package](#) (see page 28).
2. [Execute from native USS command prompt](#) (see page 29).

## Prepare for Installation

This section describes tasks that you perform before you start installing.

1. [Verify the Prerequisite Validator requirements](#) (see page 27).
2. [Download the Prerequisite Validator product package](#) (see page 28).

## Verify the Prerequisite Validator Requirements

You must have the following minimum requirements to use this utility:

- The latest version of z/OS or the last previous version
- OMVS segment for the user
- IBM 64-bit Java SDK 1.7 for z/OS

- Minimum TSO REGION size 128 MB
- BPX.SERVER READ resource access for verifying SAF resources that are required for CA CSM installation.

**Note:** Prerequisite Validator Utility verifies user access to particular resources and does *not* verify general user access rights (for example, NORESCHK for CA Top Secret for z/OS). The Prerequisite Verification report can indicate that you do not have access to the resources.

## Download the Prerequisite Validator Product Package

The Prerequisite Validator utility is available on [the CA Support Online website](#).

### Follow these steps:

1. Go to [the CA Support Online website](#), log in, and go to the Download Center.
2. Enter CA Chorus Software Manager in the Select a Product field, select the latest release, and click Go.

**Note:** If you cannot find CA Chorus Software Manager in the product list, click the link *Don't see your product name below?*

A list of product downloads is displayed.

3. Download the Prerequisite Validator pax file (CA CSM PRE VAL UTIL-ESD ONLY) to a directory in your USS environment.

## Execute from Native USS Command Prompt

Execute the Prerequisite Validator utility using the native USS command prompt in your z/OS system.

**Follow these steps:**

1. Open the native USS command prompt in your z/OS system.
2. Change to the directory where you downloaded the Prerequisite Validator pax file using the following command:

```
cd path_where_Prerequisite_Validator_is_downloaded
```

For example:

```
cd /u/users/MSMpre
```

3. Issue the following command:

```
pax -rvf file_name.pax.Z
```

***file\_name***

Specifies the name of the Prerequisite Validator file that you downloaded from the Download Center on [the CA Support Online website](#), for example, DVD10155641E.pax.Z.

**Note:** The full pax file name and its extension are case-sensitive. Verify that you use the exact case when you issue the pax command.

The Bin folder contents are extracted.

4. Issue the following command:  

```
cd Bin
```
5. (Optional) Modify the [default properties file parameters](#) (see page 30) if necessary.
6. Invoke the utility:

```
./MSMVal.sh JavaHomePath
```

For example:

```
./MSMVal.sh /usr/lpp/java/J7.0_64
```

The license agreement appears.

7. Review the license agreement, and press F3.

You are prompted to accept the agreement.

Enter **Y** to accept the agreement.

The utility gathers the host name and IP address from the system and attempts an FTP connection to verify the JESINTERFACELEVEL.

- (Optional) If you did not provide a host name when you [modified the default file parameters](#) (see page 30) or the gathered host name fails to connect, provide the host name in response to the prompt. Alternatively, you can provide this value using the default properties file as documented in the subsequent section.

At the end of a successful execution, the Prerequisite Verification report appears in browse mode and the following files are generated:

- MSMPre-RequisiteVerificationReport.txt
- MSMPre-RequisiteLogyyyy-mm-dd,hh-mm-ss,ttt.log

## Modify Default Properties

Some parameters in the Prerequisite Validator utility are populated with default properties.

Modify the default properties file parameters per your site requirements, if necessary.

The following file lets you set default values per your site requirements:

*unpax\_directory/Bin/lib/MSMSetupDefault.properties*

This file contains the following parameters:

### **HOSTNAME=**

Specifies the host name or IP address of your system. The Prerequisite Validator utility uses the host name or the IP address of your system to test the FTP connection and to verify the JESINTERFACELEVEL value. If the gathered host name fails to connect, you are prompted to provide it.

**Note:** This parameter is commented out by default.

### **ftp.port=**

Specifies the FTP port number for the hostname or IP address you specified. The Prerequisite Validator utility tests the FTP connection and verifies the JESINTERFACELEVEL value.

**Default:** 21

### **ftp.stat.check.credential=**

Specifies whether authorization is required to issue FTP quote STAT commands. Specify `ftp.stat.check.credential=y` if your site requires authorization to issue FTP quote STAT commands. The utility prompts you for a user ID and password. The command appears in the log as follows:

```
503 Login required, enter USER
```

When set to **y**, the utility prompts you for a user ID and password.

**Default:** n

**ftp.check=**

Specifies whether FTP checks are activated. Specify ftp.check=y to activate checks of the [connection to the external CA Technologies FTP servers](#) (see page 35).

**Default:** y

**ftp.proxy.enabled=**

Specifies whether FTP checks through a proxy server are activated. Specify ftp.proxy.enabled=y to activate FTP checks through a proxy server.

**Default:** n

**ftp.proxy.host=**

If proxy checks are enabled, specifies the proxy server (the host name or IP address).

**ftp.proxy.port=**

If proxy checks are enabled, specifies the port number for the server that you defined in ftp.proxy.host.

**Default:** 21

**ftp.proxy.credential.check=**

Specifies whether proxy access requires credentials. Specify ftp.proxy.credential.check=y to request credentials when accessing a proxy server.

**Default:** n

**ftp.proxy.userid=**

If credentials are requested when accessing a proxy server, specifies the proxy user ID. You are prompted for the FTP proxy password.

**ftp.advanced.options=**

Specifies whether to use advanced proxy options. Specify ftp.advanced.options=y to define a series of ftp.proxy.FIRECMD options.

**Default:** n

The following sample is an example of commands to log in to an FTP proxy server. If you use more than one command, append the sequence number to each command.

```
ftp.proxy.FIRECMD.1=HOST;  
ftp.proxy.FIRECMD.2=REMOTE_USER;@REMOTE_HOST; USER;  
ftp.proxy.FIRECMD.3=REMOTE_PW;  
ftp.proxy.FIRECMD.4=ACCT; PW;
```

**ftp.proxy.FIRECMD.1=HOST;**

Instructs the Prerequisite Validator FTP client to connect to the proxy FTP host server.

**ftp.proxy.FIRECMD.2=REMOTE\_USER;@REMOTE\_HOST; USER;**

Instructs the FTP client to send an FTP USER command with a parameter 'anonymous@ftp.ca.com ftp.proxy.userid'.

**ftp.proxy.FIRECMD.3=REMOTE\_PW;**

Instructs the FTP client to send an FTP PASS command with a generic email address.

**ftp.proxy.FIRECMD.4=ACCT; PW;**

Instructs the FTP client to send an FTP ACCT command with the proxy password that you entered at the prompt.

You can use the following keywords in the commands:

**HOST**

Defines the name or IP address of your FTP proxy server. When this keyword is encountered, it is substituted with the value of the ftp.proxy.host option. The FTP client uses this value to connect initially. The value of ftp.proxy.port is also used to establish the connection.

**USER**

Defines the user for authenticating to the FTP proxy. When this keyword is encountered, it is substituted with the value of the ftp.proxy.userid option.

**PW**

Defines the password for authenticating to the FTP proxy. When this keyword is encountered, it is substituted with the proxy password that you entered at the prompt.

**REMOTE\_HOST**

Defines the FTP address of the remote server. When this keyword is encountered, it is substituted with the appropriate FTP URL for CA Technologies FTP servers. The Prerequisite Validator utility provides these URLs.

**REMOTE\_USER**

Defines the user for authenticating to the remote server. When this keyword is encountered, it is substituted with *anonymous*.



**REMOTE\_PW**

Defines the password for authenticating to the remote server. When this keyword is encountered, it is substituted with a generic email address that the Prerequisite Validator utility provided.

**ACCT**

Instructs the FTP client to issue an ACCT command to the FTP proxy server. This keyword allows an accompanying parameter. This parameter is typically the proxy password that the PW; keyword represents.

**http.check=**

Specifies whether HTTP web service checks are activated. Specify http.check=y to activate HTTP web service checks.

**Default:** y

**https.download.check=**

Specifies whether a check for HTTPS file download is activated. Specify https.download.check=y to activate the HTTPS connection check. HTTPS is an alternative to using FTP to download files.

**Default:** n

**http.request.timeout=**

Specifies a request timeout in seconds.

**Default:** 3

**http.connection.timeout=**

Specifies the number of attempts to establish the HTTP connection after timeout.

**Default:** 2

**http.port=**

Specifies the port number for the HTTP connection.

**Default:** 80

**https.port=**

Specifies the port number for the HTTPS connection.

**Default:** 443

**http.proxy.enabled=**

Specifies whether HTTP checks through a proxy server are activated. Specify http.proxy.enabled=y to activate HTTP checks through a proxy server.

**Default:** n

**http.proxy.host=**

If proxy checks are enabled, specifies the proxy server (the host name or IP address).

**Default:** myproxy.ca.com

**http.proxy.port=**

Specifies the port number for the server that you defined in http.proxy.host.

**Default:** 80

**http.proxy.credential.check=**

Specifies whether proxy access requires credentials. Specify http.proxy.credential.check=y to request credentials when accessing a proxy server.

**Note:** Set this parameter to y if http.proxy.type=NTLM.

**Default:** n

**http.proxy.type=**

Specifies whether your proxy server uses NTLM authentication. Specify http.proxy.type=NTLM to enable your proxy server to use NTLM authentication. Otherwise, leave this parameter blank.

**http.domain=**

If your proxy server uses NTLM authentication (http.proxy.type=NTLM), specifies the NTLM domain name. If NTLM authentication is not used, this parameter is ignored.

The following sample is an example of how you set the parameters if your site requires requests to external CA Technologies HTTP servers to go through a proxy server:

```
http.proxy.enabled=yes
http.proxy.host=host_name_or_IP_address
http.proxy.port=80
http.proxy.credential.check=y
http.proxy.type=NTLM
http.domain=NTLM_domain_name
```

**SafSecurityResourceAccess=**

Specifies whether to verify user access for the following resources through SAF:

```
BPX.SERVER(UPDATE)
BPX.FILEATTR.SHARELIB(READ)
BPX.FILEATTR.PROGCTL(READ)
BPX.FILEATTR.APF(READ)
```

Specify SafSecurityResourceAccess=y to execute the resource access check.

**Default:** y

**MSMServerPortNo=**

Specifies the port number to use as the application server HTTP port for web-based access to CA CSM.

**Default:** 22120

**Note:** We recommend that you keep the default value.

**MSMDSIPORTNO=**

Specifies the port number for CA DSI Server, which CA CSM uses internally to provide security features.

**Default:** 22130

**Note:** We recommend that you keep the default value.

**MSMConnectorRedirectPortNo=**

Specifies the port number to which a request is redirected. Redirection occurs if a request comes in on a non-SSL port and is subject to a security constraint with a transport guarantee that requires SSL.

**Default:** 22140

**Note:** We recommend that you keep the default value.

**MSMTomcatServerShutdownPortNo=**

Specifies the port number to which the CA CSM application server listens for the shutdown command.

**Default:** 22150

## Define Custom FTP Servers for Validation

By default, the Prerequisite Validator utility checks connectivity to the following CA Technologies FTP servers:

- ftp.ca.com:21
- scftpd.ca.com:21
- ftpca.ca.com:21

You can specify a custom list of FTP servers that the Prerequisite Validator utility attempts to connect to and determine if your system has proper network connectivity.

**Follow these steps:**

1. Open the default properties file for editing:  
`unpax_directory/Bin/Lib/MSMSetupDefault.properties`
2. Verify that FTP checks are activated:  
`ftp.check=y`

3. Enter the FTP servers for the utility to connect providing the hostname and port number for each FTP server:

```
ftp.check.host.1=hostname_1
ftp.check.port.1=port_number_1
ftp.check.host.2=hostname_2
ftp.check.port.2=port_number_2
...
ftp.check.host.n=hostname_n
ftp.check.port.n=port_number_n
```

For example, enter the following sample to make the Prerequisite Validator utility verify connectivity to ftp.orders.ca.com on port 21, and ftp.products.ca.com on port 21:

```
ftp.check.host.1=orders.ca.com
ftp.check.port.1=21
ftp.check.host.2=products.ca.com
ftp.check.port.2=21
```

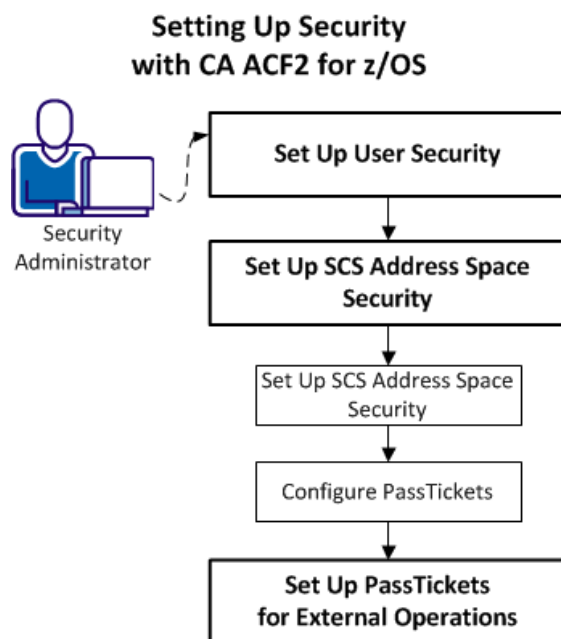
4. Save the default properties file.

You completed using the Prerequisite Validator utility. You can now start installing CA CSM.

# Chapter 5: Set Up Security for CA CSM with CA ACF2 for z/OS

---

You perform the following tasks to set up security for CA CSM with CA ACF2 for z/OS:



1. [Set up user security](#) (see page 37):
2. [Set up Software Configuration Service \(SCS\) address space security](#) (see page 42):
  - a. [Set up SCS address space security](#) (see page 43).
  - b. [Configure PassTickets](#) (see page 43).
3. [Set up PassTickets for external operations](#) (see page 45).

## How to Set Up User Security

To set up user security, you create a global system options (GSO) CLASMAP record using the CAMSM resource class and grant user permission to appropriate CA CSM resource profiles.

**Note:** CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation.

To define the CLASMAP record, issue the following CA ACF2 for z/OS commands:

```
SET C(GS0)
INSERT CLASMAP.MSM ENTITYLN(246) MUSID() RESOURCE(CAMSM) RSRCTYPE(MSM)
```

To refresh the CLASMAP record, issue the following command:

```
F ACF2,REFRESH(CLASMAP),TYPE(GS0)
```

To grant user permission to appropriate CA CSM resource profiles, use the commands in the following examples for various roles:

- [Administrators](#) (see page 38)
- [Users](#) (see page 39)
- [Restricted Users](#) (see page 41)

### Example: Set Up Security for Administrators

You want to grant the user, MSMUSR1, access to all actions. The actions include the management of system settings, system registry, methodologies, deployments, configurations, and of user settings.

Issue the following CA ACF2 for z/OS commands:

```
SET R(MSM)
COMPILE STORE
$KEY(LOGON) TYPE(MSM)
UID(*****MSMUSR1)          SERVICE(READ)    ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(ADMIN) TYPE(MSM)
SETTINGS.- UID(*****MSMUSR1)  SERVICE(READ)    ALLOW
LMPKEY.-   UID(*****MSMUSR1)  SERVICE(READ)    ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SC) TYPE(MSM)
@ACTION.- UID(*****MSMUSR1)  SERVICE(READ)    ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SMPE) TYPE(MSM)
@ACTION.- UID(*****MSMUSR1)  SERVICE(READ)    ALLOW
```

```

SET R(MSM)
COMPILE STORE
$KEY(SYSREG) TYPE(MSM)
UID(****MSMUSR1) SERVICE(READ) ALLOW

```

```

SET R(MSM)
COMPILE STORE
$KEY(DEPLOY) TYPE(MSM)
UID(****MSMUSR1) SERVICE(READ) ALLOW

```

```

SET R(MSM)
COMPILE STORE
$KEY(METHOD) TYPE(MSM)
UID(****MSMUSR1) SERVICE(READ) ALLOW

```

```

SET R(MSM)
COMPILE STORE
$KEY(CONFIG) TYPE(MSM)
UID(****MSMUSR1) SERVICE(READ) ALLOW

```

```

SET R(MSM)
COMPILE STORE
$KEY(TM) TYPE(MSM)
UID(****MSMUSR1) SERVICE(READ) ALLOW

```

## Example: Set Up Security for Users

You want to grant the user, MSMUSR2, access to all user actions, but the user can only access the SANDBOX system within the environment. A user with this setup cannot manage system or other users' settings, modify the system registry, nor create methodologies. The user can create deployments that are targeted for the SANDBOX system and can use methodologies that other CA CSM users defined. The user can create configurations that are targeted for the SANDBOX remote system using system profile values already defined, but cannot implement those configurations.

Issue the following CA ACF2 for z/OS commands:

```

SET R(MSM)
COMPILE STORE
$KEY(LOGON) TYPE(MSM)
UID(****MSMUSR2) SERVICE(READ) ALLOW

```

```
SET R(MSM)
COMPILE STORE
$KEY(ADMIN) TYPE(MSM)
SETTINGS.USER.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
LMPKEY.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SC) TYPE(MSM)
@ACTION.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SMPE) TYPE(MSM)
@ACTION.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SYSREG) TYPE(MSM)
@DISPLAY.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
@PROFILE.DISPLAY UID(*****MSMUSR2) SERVICE(READ) ALLOW
@SYSTEM.SANDBOX UID(*****MSMUSR2) SERVICE(READ) ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(METHOD) TYPE(MSM)
@DISPLAY.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(DEPLOY) TYPE(MSM)
@DISPLAY.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
@BUILD.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
@EXECUTE.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(CONFIG) TYPE(MSM)
@DISPLAY.- UID(*****MSMUSR2) SERVICE(READ) ALLOW
@ACTION.CREATE UID(*****MSMUSR2) SERVICE(READ) ALLOW
@ACTION.REMOVE UID(*****MSMUSR2) SERVICE(READ) ALLOW
```



## Example: Set Up Security for Restricted Users

You want to grant the user, MSMUSR3, access to the following actions only:

- Download product packages.
- Install product packages that are downloaded outside of CA CSM.
- Migrate an existing SMP/E environment to CA CSM.
- Remove knowledge of an SMP/E environment from CA CSM.
- Create and deploy their own deployments.
- Create and maintain remote systems within the system registry, including profile information.
- Implement prepared configurations on remote systems.

Issue the following CA ACF2 for z/OS commands:

```
SET R(MSM)
COMPILE STORE
$KEY(LOGON) TYPE(MSM)
UID(****MSMUSR3)                SERVICE(READ)  ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(ADMIN) TYPE(MSM)
SETTINGS.USER. - UID(****MSMUSR3) SERVICE(READ)  ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SC) TYPE(MSM)
@ACTION.INSTPKG. - UID(****MSMUSR3) SERVICE(READ)  ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SMPE) TYPE(MSM)
@ACTION.MIGRATE. - UID(****MSMUSR3) SERVICE(READ)  ALLOW
@ACTION.REMOVECSI. - UID(****MSMUSR3) SERVICE(READ)  ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(SYSREG) TYPE(MSM)
UID(****MSMUSR3)                SERVICE(READ)  ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(METHOD) TYPE(MSM)
@DISPLAY. -          UID(*****MSMUSR3)  SERVICE(READ)  ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(DEPLOY) TYPE(MSM)
@SELF. -            UID(*****MSMUSR3)  SERVICE(READ)  ALLOW
```

```
SET R(MSM)
COMPILE STORE
$KEY(CONFIG) TYPE(MSM)
@ACTION.IMPL        UID(*****MSMUSR3)  SERVICE(READ)  ALLOW
```

## How to Set Up SCS Address Space Security

The SCS address space verifies the user ID assigned to the requesting started task or initiated job and authorizes it to connect.

The security setup that is required for CA CSM is only set up on the driving system. To set up the SCS address space security, do so on every target system, which can include the CA CSM driving system.

**Note:** An unauthorized CA CSM user ID is denied access to the selected target system.

If security profiles are not defined, CA CSM cannot connect to the SCS address space, including from within the address space.

Configure permission to access the entity SCSAS.CONNECT (READ authority) of the class CAMSM. The permission allows connections to the SCS address space through the CA CSM application server and the SCS address space.

PassTickets are used to verify the started task ID of the CA CSM application server. Verifying the started task ID allows secure connections from a remote system to the address space.

To set up SCS address space security:

1. [Set up SCS address space security](#) (see page 43).
2. [Configure PassTickets](#) (see page 43).

## Set Up SCS Address Space Security

Define the global systems options (GSO) record and define the rule to permit access to a user ID on every target system.

CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation. If you change the default SAF resource class name, update the SAF class attribute in the MSMCPARM member.

**Note:** For more information about the MSMCPARM member, see the *Administration Guide*.

### Follow these steps:

1. Define the GSO record:

```
SET C(GSO)
INSERT CLASMAP.MSM ENTITYLN(246) MUSID( ) RESOURCE(CAMSM) RSRCTYPE(MSM)
```

2. Define the rule to permit access to a user ID:

```
SET R(MSM)
COMPILE STORE
$KEY(SCSAS) TYPE(MSM)
CONNECT. -      UID(****userid)                SERVICE(READ)    ALLOW
CONNECT. -      UID(****userid2)              SERVICE(READ)    ALLOW
```

#### **userid**

Specifies the user ID assigned to the SCS address space.

#### **userid2**

Specifies the user ID assigned to the CA CSM application server driving system.

## Configure PassTickets

Set up PassTickets on the system where the CA CSM application server is executing and on each system where the SCS address space is running.

**Note:** To generate a valid PassTicket, use the values for the remote SCS address space on the system where the CA CSM application server is running.

To set up PassTickets, use the commands in the following examples on both the server and remote target systems.

**Note:** These examples are provided as a guideline and are intended for security administrators familiar with PassTicket configuration.

- [Example: Configure PassTickets for CA CSM Application Server](#) (see page 44)
- [Example: Configure PassTickets for SCS Address Space on Remote Systems](#) (see page 45)

### Example: Configure PassTickets for CA CSM Application Server

You can use CA ACF2 for z/OS to configure PassTickets on the system where the CA CSM application server is executing.

#### Follow these steps:

1. Define the session key for the CA CSM application server:

```
SET PROFILE(PTKTDATA) DIVISION(SSIGNON)
INSERT MSMCAPPL SSKEY(0123456789ABCDEF) NOMULT-USE
```

#### **MSMCAPPL**

Defines the session key for the SCS address space ID used during CA CSM Configuration processing. This name may have been overridden when you installed CA CSM, so it should reflect the real application name.

**Note:** This example demonstrates a complete session key value of 16 hex digits (creating an 8-byte or 64-bit key). Change your key so that it consists of 16 random hex digits, and is different from the values in this example. Each application key must be the same on all systems in the configuration, and the values must be kept secret and secured.

2. Enable READ access to the MSMCAPPL PassTicket key value:

```
SET RESOURCE(PTK)
RECKEY IRRPTAUTH ADD(MSMCAPPL.stc-userid UID(uid-of-stc-userid)
SERVICE(READ,UPDATE) ALLOW)
```

#### **stc-userid and uid-of-stc-userid**

Specifies the user ID and UID associated with the CA CSM application server started task.

**Note:** You can also use the ACFNRULE utility program to add rule lines to an existing rule. For more information about this option, see the *CA ACF2 for z/OS Administration Guide*.

3. Complete the PassTicket setup:

```
F ACF2,REBUILD(PTK),CLASS(P)
F ACF2,REBUILD(PTK)
```

## Example: Configure PassTickets for SCS Address Space on Remote Systems

You can use CA ACF2 for z/OS to configure PassTickets on the remote systems where the SCS address space is running.

### Follow these steps:

1. Define the MSMCAPPL session keys:

```
SET PROFILE(PTKTDATA) DIVISION(SSIGNON)
INSERT MSMCAPPL SSKEY(0123456789ABCDEF) NOMULT-USE
```

#### **MSMCAPPL**

Defines the session key for the SCS address space ID used during CA CSM Configuration processing. This name may have been overridden when you installed CA CSM, so it should reflect the real application name.

**Note:** This example demonstrates a complete session key value of 16 hex digits (creating an 8-byte or 64-bit key). Change your key so that it consists of 16 random hex digits, and is different from the values in this example. Each application key must be the same on all systems in the configuration, and the values must be kept secret and secured.

2. Enable READ access to the MSMCAPPL PassTicket key value:

```
SET RESOURCE(PTK)
RECKEY IRRPTAUTH ADD(MSMCAPPL.stc-userid UID(uid-of-stc-userid))
SERVICE(READ,UPDATE) ALLOW
```

#### **stc-userid and uid-of-stc-userid**

Specifies the user ID and UID associated with the SCS address space.

**Note:** You can also use the ACFNRULE utility program to add rule lines to an existing rule. For more information about this option, see the *CA ACF2 for z/OS Administration Guide*.

3. Complete the PassTicket setup on the remote systems:

```
F ACF2,REBUILD(PTK),CLASS(P)
F ACF2,REBUILD(PTK)
```

## How to Set Up PassTickets for External Operations

To let CA CSM perform external operations on your behalf without saving your password, configure CA ACF2 for z/OS to use PassTickets.

You do so to allow users to perform the following actions:

- Launch CA CSM from CA Chorus without requiring an additional user login.

**Note:** For more information about CA Chorus, see the CA Chorus user documentation.

- Schedule automatic maintenance updates (receiving and applying maintenance) for products that are installed in an SMP/E environment.

**Important!** To complete the process of configuring CA CSM to perform external operations on your behalf without saving your password, update the CA CSM startup parameters after you install CA CSM. For more information, see *Configuring CA CSM to Perform Automatic Maintenance Updates* in the CA CSM bookshelf under User Documentation By Task, and see the *Installation Guide*.

### Example: Configure PassTickets for External Operations

This sample shows how to use CA ACF2 for z/OS to configure PassTickets for external operations.

**Important!** If the uid of the CA CSM application server started task user ID has the RESTRICT attribute, add the PTICKET attribute to it.

**Note:** The commands in this procedure are samples. For detailed information about using these commands, see the *CA ACF2 for z/OS Administration Guide*.

If you plan to let CA CSM perform external operations on your behalf without saving your password, update the CA CSM startup parameters after you install CA CSM. For more information, see the *Installation Guide* and *Configuring CA CSM to Perform Automatic Maintenance Updates* in the CA CSM bookshelf under User Documentation By Task.

#### Follow these steps:

1. Define the CA CSM connection application session key:

```
SET PROFILE(PTKTDATA) DIVISION(SSIGNON)  
INSERT applid SSKEY(0123456789ABCDEF) MULT-USE
```

#### **applid**

Defines the application ID used for PassTicket validation for the external operations. Replace *applid* with your CA CSM applid.

**Default:** CHORWEBS

#### **SSKEY**

Defines an encryption key for the application using values that are different from the values in the sample syntax.

**Note:** The sample syntax demonstrates a complete key value of 16 hexadecimal digits (creating an 8-byte or 64-bit key). Each application key must be the same on all systems in the configuration and the values must be kept secret and secured.

### MULT-USE

Lets you reuse the same PassTicket multiple times.

2. Permit the CA CSM started task user ID to generate and evaluate PassTickets on behalf of CA CSM users:

```
SET RESOURCE(PTK)
RECKEY IRRPTAUTH ADD(applid.- UID(uid_of_stc_userid) SERVICE(UPDATE,READ)
ALLOW)
```

#### *uid\_of\_stc\_userid*

Specifies the uid of the CA CSM application server started task user ID. This user ID must be able to generate PassTickets for any user.

**Default:** MSMSERV

#### *applid*

Defines the application ID used for PassTicket validation to authenticate connections to the server. Replace *applid* with your CA CSM applid.

**Default:** CHORWEBS

3. Allow individual users to access CA CSM:

```
SET RESOURCE(SAF)
RECKEY applid ADD(UID(uid_of_user) SERVICE(READ) ALLOW)
F ACF2,REBUILD(SAF)
```

**Note:** If you added a GSO CLASMAP record to change the type code for the APPL class to APL, use APL instead of SAF for TYPE.

#### *uid\_of\_user*

Defines a user who needs to perform the external operations.

4. Rebuild the directory for PTKTDATA records:

```
F ACF2,REBUILD(PTK) ,CLASS(P)
F ACF2,REBUILD(PTK)
```

PassTickets are configured.

You have completed security setup for CA CSM with CA ACF2 for z/OS.

You completed site preparation. Your system is ready to install CA CSM.



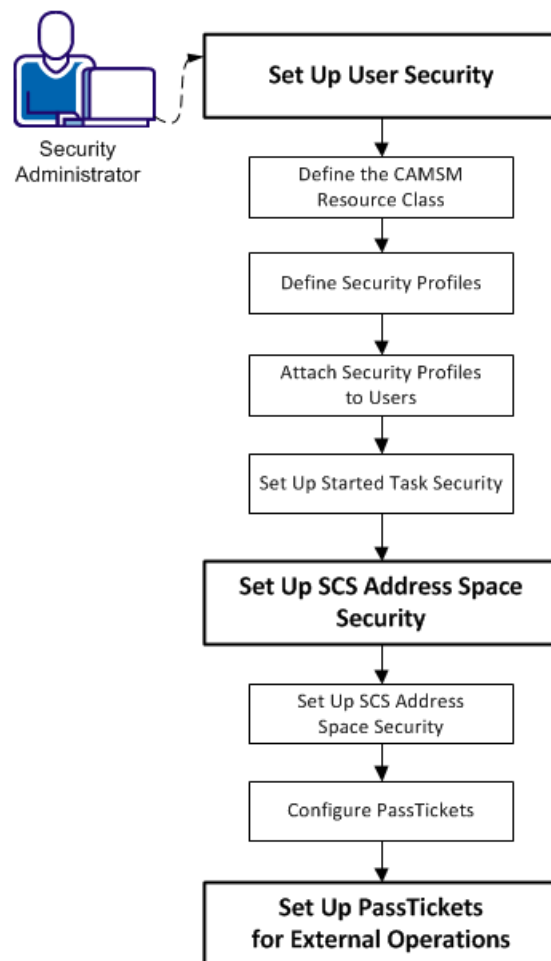


# Chapter 6: Set Up Security for CA CSM with CA Top Secret for z/OS

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You perform the following tasks to set up security for CA CSM with CA Top Secret for z/OS:

## Setting Up Security with CA Top Secret for z/OS



1. [Set up user security](#) (see page 50):
  - a. [Define the CAMSM resource class](#) (see page 50).
  - b. [Define security profiles](#) (see page 51).
  - c. [Attach security profiles to users](#) (see page 53).
  - d. [Set up started task security](#) (see page 54).
2. [Set up Software Configuration Service \(SCS\) address space security](#) (see page 42):
  - a. [Set up SCS address space Security](#) (see page 55).
  - b. [Configure PassTickets](#) (see page 56).
3. [Set up PassTickets for external operations](#) (see page 58).

## How to Set Up User Security

CA CSM uses resource profiles to grant access to resources on the web-based interface. The resource class is CAMSM. In CA Top Secret for z/OS, you can define security profiles that include the appropriate resource profiles for various roles and can attach the security profiles to users.

**Note:** CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation.

To set up user security:

1. [Define the CAMSM resource class](#) (see page 50).
2. [Define the security profiles to configure the roles](#) (see page 51).
3. [Attach the profiles to users](#) (see page 53).
4. [Set up started task security](#) (see page 54).

## Define the CAMSM Resource Class

Before you can use the CA CSM resource profiles, you define the CAMSM class that contains the profiles to CA Top Secret for z/OS.

**Note:** CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation.

**Follow these steps:**

1. Issue the following commands:

```
TSS ADDTO(RDT) RESCLASS(CAMSM)
      ATTR(MASK) MAXLEN(246)
TSS REPL(RDT) RESCLASS(CAMSM)
      ACLST(READ=4000,UPDATE=8000,CONTROL=0400,NONE=0000)
      DEFACC(READ)
```

2. Define resource profiles within the CAMSM class:

```
TSS ADDTO(MSMDPT) CAMSM(LOGON)
TSS ADDTO(MSMDPT) CAMSM(ADMIN.)
TSS ADDTO(MSMDPT) CAMSM(SC.)
TSS ADDTO(MSMDPT) CAMSM(SMPE.)
TSS ADDTO(MSMDPT) CAMSM(SYSREG.)
TSS ADDTO(MSMDPT) CAMSM(METHOD.)
TSS ADDTO(MSMDPT) CAMSM(DEPLOY.)
TSS ADDTO(MSMDPT) CAMSM(CONFIG.)
TSS ADDTO(MSMDPT) CAMSM(TM.)
```

**Note:** You deny or grant access to CA CSM using resource profiles.

## Define Security Profiles

You can define security profiles for various roles and attach the profiles to users. Use the commands in the following examples for various roles:

- [Administrators](#) (see page 52)
- [Users](#) (see page 52)
- [Restricted Users](#) (see page 53)

## Example: Set Up Security for Administrators

You want to define a profile, MSMPRF1, that grants access to all actions. The actions include the management of system settings, system registry, methodologies, deployments, configurations, and of user settings.

Issue the following CA Top Secret for z/OS commands:

```
TSS CREATE(MSMPRF1) NAME('CA CSM ADMIN PROFILE') DEPT(MSMDPT) TYPE(PROFILE)
TSS PERMIT(MSMPRF1) CAMSM(LOGON) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(ADMIN.) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(SC.) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(SMPE.) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(SYSREG.) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(METHOD.) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(DEPLOY.) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(CONFIG.) ACCESS(READ)
TSS PERMIT(MSMPRF1) CAMSM(TM.) ACCESS(READ)
```

## Example: Set Up Security for Users

You want to define a profile, MSMPRF2, that grants access to all user actions, but the user can only access the SANDBOX system within the environment. A user with this setup cannot manage system or other users' settings, modify the system registry, nor create methodologies. The user can create deployments that are targeted for the SANDBOX system and can use methodologies that other CA CSM users defined. The user can create configurations that are targeted for the SANDBOX remote system using system profile values already defined, but cannot implement those configurations.

Issue the following CA Top Secret for z/OS commands:

```
TSS CREATE(MSMPRF2) NAME('CA CSM USER PROFILE') DEPT(MSMDPT) TYPE(PROFILE)
TSS PERMIT(MSMPRF2) CAMSM(ADMIN.SETTINGS.USER) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(ADMIN.LMPKEY) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(SC.@ACTION) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(SMPE.@ACTION) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(SYSREG.@DISPLAY) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(SYSREG.@PROFILE.DISPLAY) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(SYSREG.@SYSTEM.SANDBOX) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(METHOD.@DISPLAY) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(DEPLOY.) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(CONFIG.@DISPLAY) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(CONFIG.@ACTION.CREATE) ACCESS(READ)
TSS PERMIT(MSMPRF2) CAMSM(CONFIG.@ACTION.REMOVE) ACCESS(READ)
```

## Example: Set Up Security for Restricted Users

You want to define a profile, MSMPRF3, that grants access to the following actions only:

- Download product packages.
- Install product packages that are downloaded outside of CA CSM.
- Migrate an existing SMP/E environment to CA CSM.
- Remove knowledge of an SMP/E environment from CA CSM.
- Create deployments and deploy them (if they are the owner).
- Create and maintain remote systems within the system registry, including profile information.
- Implement prepared configurations on remote systems.

Issue the following CA Top Secret for z/OS commands:

```
TSS CREATE(MSMPRF3) NAME('CA CSM SMPE USER PROFILE') DEPT(MSMDPT) TYPE(PROFILE)
TSS PERMIT(MSMPRF3) CAMSM(ADMIN.SETTINGS.USER) ACCESS(READ)
TSS PERMIT(MSMPRF3) CAMSM(SC.@ACTION.INSTPKG) ACCESS(READ)
TSS PERMIT(MSMPRF3) CAMSM(SMPE.@ACTION.MIGRATE) ACCESS(READ)
TSS PERMIT(MSMPRF3) CAMSM(SMPE.@ACTION.REMOVECSI) ACCESS(READ)
TSS PERMIT(MSMPRF3) CAMSM(SYSREG) ACCESS(READ)
TSS PERMIT(MSMPRF3) CAMSM(METHOD.@DISPLAY) ACCESS(READ)
TSS PERMIT(MSMPRF3) CAMSM(DEPLOY.@SELF) ACCESS(READ)
TSS PERMIT(MSMPRF3) CAMSM(CONFIG.@ACTION.IMPL) ACCESS(READ)
```

## Attach Security Profiles to Users

You attach security profiles to users to grant the users access to CA CSM actions in various roles.

To attach security profiles to users, issue CA Top Secret for z/OS commands in TSO, for example:

```
TSS ADDTO(MSMUSR1) PROFILE(MSMPRF1)
TSS ADDTO(MSMUSR2) PROFILE(MSMPRF2)
TSS ADDTO(MSMUSR3) PROFILE(MSMPRF3)
```

The example sets up the following configuration:

- The MSMPRF1 profile permits access to the user MSMUSR1.
- The MSMPRF2 profile permits access to the user MSMUSR2.
- The MSMPRF3 profile permits access to the user MSMUSR3.

## Set Up Started Task Security

If you plan to run the CA CSM application server (MSMTC) as a started task under CA Top Secret for z/OS, accomplish relevant configuration settings.

**Follow these steps:**

1. Define a facility for the started task:

```
TSS MODIFY FACILITY (USERxx=NAME=MSM)
TSS MODIFY FACILITY (MSM=MULTIUSER, SIGN(M))
```

The facility is used to control who can log in to the server.

**Note:** For more information, see the *CA Top Secret for z/OS Control Options Guide*.

2. Create an ACID (user ID) to control the server.

**Note:** For more information, see the *CA Top Secret for z/OS Command Functions Guide*.

3. Define the server region to the STC table.

The STC entry contains the server procedure name and ACID.

**Note:** For more information, see the *CA Top Secret for z/OS Command Functions Guide*.

4. Add the facility that you defined in Step 1 to the server ACID, using the MASTFAC keyword.

**Note:** For more information, see the *CA Top Secret for z/OS Command Functions Guide*.

5. Add the facility that you defined in Step 1 to each user who requires logon to the server, using the FACILITY keyword.

**Note:** For more information, see the *CA Top Secret for z/OS Command Functions Guide*.

## How to Set Up SCS Address Space Security

The SCS address space verifies the user ID assigned to the requesting started task or initiated job and authorizes it to connect.

The security setup that is required for CA CSM is only set up on the driving system. To set up the SCS address space security, do so on every target system, which can include the CA CSM driving system.

**Note:** An unauthorized CA CSM user ID is denied access to the selected target system.

If security profiles are not defined, CA CSM cannot connect to the SCS address space, including from within the address space.

Configure permission to access the entity SCSAS.CONNECT (READ authority) of the class CAMSM. The permission allows connections to the SCS address space through the CA CSM application server and the SCS address space.

PassTickets are used to verify the started task ID of the CA CSM application server. Verifying the started task ID allows secure connections from a remote system to the address space.

To set up SCS address space security:

1. [Set up SCS address space security](#) (see page 55).
2. [Configure PassTickets](#) (see page 56).

## Set Up SCS Address Space Security

Set up security for the SCS address space in CA Top Secret for z/OS.

CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation. If you change the default SAF resource class name, update the SAF class attribute in the MSMCPARM member.

**Note:** For more information about the MSMCPARM member, see the *Administration Guide*.

### Follow these steps:

1. Add the resource class to the RDT:

```
TSS ADDTO(RDT) RESCLASS(CAMSM) ATTR(MASK) MAXLEN(246)
TSS REPL(RDT) RESCLASS(CAMSM)
ACLST(READ=4000,UPDATE=8000,CONTROL=0400,NONE=0000)
DEFACC(READ)
```

2. Create a CA CSM departmental ACID:

```
TSS CREATE(MSMDPT) NAME('CA CSM Department') TYPE(USER)
```

3. Define the resource profiles within the CAMSM class:

```
TSS ADDTO(MSMDPT) CAMSM(SCSAS.CONNECT)
```

4. Create a CA Top Secret for z/OS profile.

```
TSS CREATE(SCSPRF1) NAME('CA CSM SCS AS PROFILE')
DEPT(MSMDPT) TYPE(PROFILE)
```

5. Permit the resource to access the profile:

```
TSS PERMIT(SCSPRF1) CAMSM(SCSAS.CONNECT) ACCESS(READ)
```

6. Assign the profile to the ACID:

```
TSS ADDTO(userid) PROFILE(SCSPRF1)
```

***userid***

Specifies the user ID assigned to the SCS address space.

## Configure PassTickets

Set up PassTickets on the system where the CA CSM application server is executing and on each system where the SCS address space is running.

**Note:** To generate a valid PassTicket, use the values for the remote SCS address space on the system where the CA CSM application server is running.

To set up PassTickets, use the commands in the following examples on both the server and remote target systems.

**Note:** These examples are provided as a guideline and are intended for security administrators familiar with PassTicket configuration.

- [Example: Configure PassTickets for CA CSM Application Server](#) (see page 56)
- [Example: Configure PassTickets for SCS Address Space on Remote Systems](#) (see page 57)

## Example: Configure PassTickets for CA CSM Application Server

You can use CA Top Secret for z/OS to configure PassTickets on the system where the CA CSM application server is executing.

### Follow these steps:

1. Update the resource descriptor table (RDT) to define the PTKTDATA class (which is not a predefined class):

```
TSS ADDTO(RDT) RESCLASS(PTKTDATA) RESCODE(n) ACLIST(ALL,READ,UPDATE) MAXLEN(37)
```

**Note:** Include RESCODE(*n*) in the range of 101 to 13F to make PTKTDATA a prefixed resource class.

2. Assign ownership to a department for the PassTicket session key (SESSKEY) resource:

```
TSS ADDTO(department) PTKTDATA(IRRPTAUTH)
```

***department***

Specifies a preexisting department. The ownership of the application is defined to this department. This ownership lets the department administrator (or higher) define permissions for PassTicket generation and validation.



3. Define the CA CSM application server PassTicket session key:

```
TSS ADDTO(NDT) PSTKAPPL(MSMCAPPL) SESSKEY(0123456789ABCDEF)
```

**MSMCAPPL**

Defines the session key for the SCS address space ID used during CA CSM Configuration processing. This name may have been overridden when you installed CA CSM, so it should reflect the real application name.

**Note:** This example demonstrates a complete session key value of 16 hex digits (creating an 8-byte or 64-bit key). Change your key so that it consists of 16 random hex digits, and is different from the values in this example. Each application key must be the same on all systems in the configuration, and the values must be kept secret and secured.

4. Permit access to the CA CSM application server PassTicket session key value for the Started Task User for the CA CSM application server:

```
TSS PERMIT(stc-userid) PTKTDATA(IRRPTAUTH.MSMCAPPL.) ACCESS(READ,UPDATE)
```

**stc-userid**

Specifies the ACID that you defined the access requirements for user ID associated with the CA CSM application server.

## Example: Configure PassTickets for SCS Address Space on Remote Systems

You can use CA Top Secret for z/OS to configure PassTickets on the remote systems where the SCS address space is running.

**Follow these steps:**

1. Define the SCS address space PassTicket session key:

```
TSS ADDTO(NDT) PSTKAPPL(MSMCAPPL) SESSKEY(0123456789ABCDEF)
```

**MSMCAPPL**

Defines the session key for the SCS address space ID used during CA CSM Configuration processing. This name may have been overridden when you installed CA CSM, so it should reflect the real application name.

**Note:** This example demonstrates a complete session key value of 16 hex digits (creating an 8-byte or 64-bit key). Change your key so that it consists of 16 random hex digits, and is different from the values in this example. Each application key must be the same on all systems in the configuration, and the values must be kept secret and secured.

## How to Set Up PassTickets for External Operations

To let CA CSM perform external operations on your behalf without saving your password, configure CA Top Secret for z/OS to use PassTickets.

You do so to allow users to perform the following actions:

- Launch CA CSM from CA Chorus without requiring an additional user login.  
**Note:** For more information about CA Chorus, see the CA Chorus user documentation.
- Schedule automatic maintenance updates (receiving and applying maintenance) for products that are installed in an SMP/E environment.

**Important!** To complete the process of configuring CA CSM to perform external operations on your behalf without saving your password, update the CA CSM startup parameters after you install CA CSM. For more information, see *Configuring CA CSM to Perform Automatic Maintenance Updates* in the CA CSM bookshelf under User Documentation By Task, and see the *Installation Guide*.

### Example: Configure PassTickets for External Operations

This sample shows how to use CA Top Secret for z/OS to configure PassTickets for external operations.

**Note:** This procedure assumes that the PTKTDATA class and IRRPTAUTH resource ownership have been defined.

If you plan to let CA CSM perform external operations on your behalf without saving your password, update the CA CSM startup parameters after you install CA CSM. For more information, see the *Installation Guide* and *Configuring CA CSM to Perform Automatic Maintenance Updates* in the CA CSM bookshelf under User Documentation By Task.

**Follow these steps:**

1. Define the CA CSM connection application session key:

```
TSS ADDTO(NDT) PSTKAPPL(applid) SESSKEY(0123456789ABCDEF) SIGNMULTI
```

***applid***

Defines the application ID used for PassTicket validation for the external operations. Replace *applid* with your CA CSM applid.

**Default:** CHORWEBS

### SESSKEY

Defines an encryption key for the application in the format of 16 random hexadecimal digits that are different from the values in the example.

**Note:** This example demonstrates a complete key SESSKEY value of 16 hexadecimal digits (creating an 8-byte or 64-bit key). Each application key must be the same on all systems in the configuration and the values must be kept secret and secured.

### SIGNMULTI

Lets you reuse the same PassTicket multiple times.

2. Permit the CA CSM started task user ID to generate and evaluate PassTickets on behalf of CA CSM users:

```
TSS PERMIT(stc_userid) PTKTDATA(IRRPTAUTH.applid.) ACCESS(READ,UPDATE)
```

#### *stc\_userid*

Specifies the CA CSM application server started task user ID. This user ID must be able to generate PassTickets for any user.

**Default:** MSMSERV

#### *applid*

Defines the application ID used for PassTicket validation to authenticate connections to the server. Replace *applid* with your CA CSM applid.

**Default:** CHORWEBS

3. Add the applid to the applicable department:

```
TSS ADDTO(department) APPLICATION(applid)
```

4. Allow individual users to access CA CSM:

```
TSS PERMIT(userid) APPL(applid)
```

#### *userid*

Defines a user who needs to perform the external operations.

PassTickets are configured.

You have completed security setup for CA CSM with CA Top Secret for z/OS.

You completed site preparation. Your system is ready to install CA CSM.

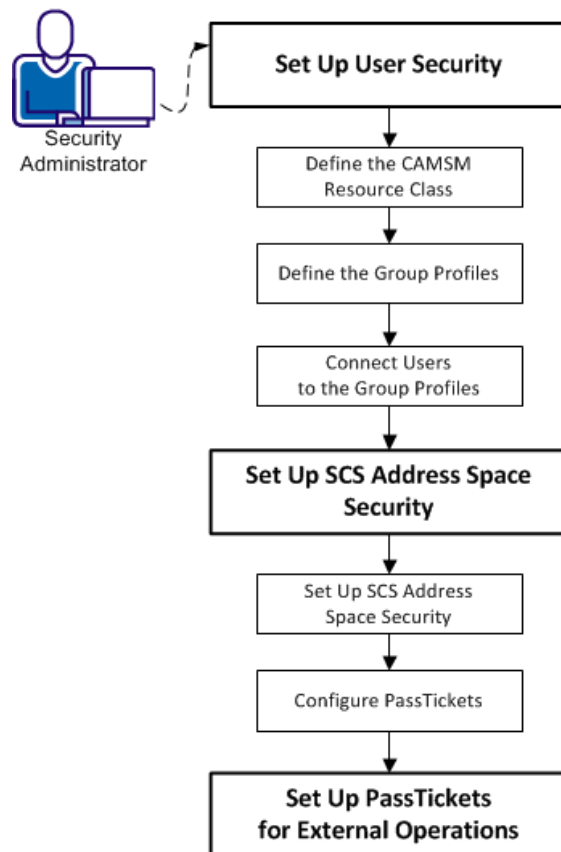


# Chapter 7: Set Up Security for CA CSM with IBM RACF

---

You perform the following tasks to set up security for CA CSM with IBM RACF:

## Setting Up Security with IBM RACF



1. [Set up user security](#) (see page 62):
  - a. [Define the CAMSM resource class](#) (see page 63).
  - b. [Define the group profiles](#) (see page 63).
  - c. [Connect users to the group profiles](#) (see page 66).
2. [Set up Software Configuration Service \(SCS\) address space security](#) (see page 42):
  - a. [Set up SCS address space security](#) (see page 67).
  - b. [Configure PassTickets](#) (see page 68).
3. [Set up PassTickets for external operations](#) (see page 71).

## How to Set Up User Security

CA CSM uses resource profiles to grant access to resources on the web-based interface. The resource class is CAMSM. In IBM RACF, you can define group profiles that include the appropriate resource profiles for various roles and connect the users to the group profiles.

**Note:** CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation.

To set up user security:

1. [Define the CAMSM resource class](#) (see page 63).
2. [Define the group profiles](#) (see page 63).
3. [Connect users to the group profiles](#) (see page 66).

## Define the CAMSM Resource Class

Before you can use the CA CSM resource profiles, you define the CAMSM class that contains the profiles to IBM RACF.

**Note:** CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation.

**Follow these steps:**

1. Issue the SETROPTS LIST command to verify that the CDT resource appears within both the CLASSACT and RACLIST list of entries.

2. Define the generic profile:

```
RDEFINE CDT CAMSM UACC(NONE) CDTINFO(GENERIC,MAXLENGTH(246) POSIT(nnn)  
OTHER(ALPHA,NATIONAL,NUMERIC,SPECIAL) RACLIST(ALLOWED))
```

***nnn***

Defines a posit number that does not conflict with IBM reserved values.

**Note:** For more information about posit numbers, see the *IBM Server RACF Command Language Reference*.

The generic profile is defined.

3. Finalize the changes:

```
SETROPTS RACLIST(CDT) REFRESH  
SETROPTS GENERIC(CAMSM) RACLIST(CAMSM) CLASSACT(CAMSM)
```

The changes take effect and the CAMSM resource class is defined to IBM RACF.

**Note:** You deny or grant access to CA CSM using resource profiles.

## Define the Group Profiles

You can define group profiles that include the appropriate resource profiles for various roles. You can connect the users to the group profiles.

**Note:** You deny or grant access to CA CSM using resource profiles.

The following examples define group profiles for various roles.

- [Administrators](#) (see page 64)
- [Users](#) (see page 65)
- [Restricted Users](#) (see page 65)

## Example: Set Up Security for Administrators

You want to define a profile, MSMPRF1, that grants access to all actions. The actions include the management of system settings, system registry, methodologies, deployments, configurations, and of user settings.

Issue the following IBM RACF commands:

```
ADDGROUP MSMPRF1 DATA('CA CSM ADMIN')
```

```
RDEFINE CAMSM LOGON UACC(NONE)
RDEFINE CAMSM ADMIN.* UACC(NONE)
RDEFINE CAMSM SC.* UACC(NONE)
RDEFINE CAMSM SMPE.* UACC(NONE)
RDEFINE CAMSM SYSREG.* UACC(NONE)
RDEFINE CAMSM METHOD.* UACC(NONE)
RDEFINE CAMSM DEPLOY.* UACC(NONE)
RDEFINE CAMSM CONFIG.* UACC(NONE)
RDEFINE CAMSM TM.* UACC(NONE)
```

```
PERMIT LOGON CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT ADMIN.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT SC.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT SMPE.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT SYSREG.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT METHOD.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT DEPLOY.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT CONFIG.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
PERMIT TM.* CLASS(CAMSM) ID(MSMPRF1) ACCESS(READ)
```



## Example: Set Up Security for Users

You want to define a profile, MSMPRF2, that grants access to all user actions, but the user can only access the SANDBOX system within the environment. A user with this profile cannot manage system or other users' settings, modify the system registry, nor create methodologies. The user can create deployments that are targeted for the SANDBOX system and can use methodologies that other CA CSM users defined. The user can create configurations that are targeted for the SANDBOX remote system using system profile values already defined, but cannot implement those configurations.

Issue the following IBM RACF commands:

```
ADDGROUP MSMPRF2 DATA('CA CSM USER')

RDEFINE CAMSM LOGON UACC(NONE)
RDEFINE CAMSM ADMIN.SETTINGS.USER.* UACC(NONE)
RDEFINE CAMSM ADMIN.LMPKEY.* UACC(NONE)
RDEFINE CAMSM SC.@ACTION.* UACC(NONE)
RDEFINE CAMSM SMPE.@ACTION.* UACC(NONE)
RDEFINE CAMSM SYSREG.@DISPLAY UACC(NONE)
RDEFINE CAMSM SYSREG.@PROFILE.DISPLAY UACC(NONE)
RDEFINE CAMSM SYSREG.@SYSTEM.SANDBOX UACC(NONE)
RDEFINE CAMSM METHOD.@DISPLAY UACC(NONE)
RDEFINE CAMSM DEPLOY.* UACC(NONE)
RDEFINE CAMSM CONFIG.@DISPLAY UACC(NONE)
RDEFINE CAMSM CONFIG.@ACTION.CREATE UACC(NONE)
RDEFINE CAMSM CONFIG.@ACTION.REMOVE UACC(NONE)

PERMIT LOGON CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT ADMIN.SETTINGS.USER.* CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT ADMIN.LMPKEY.* CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT SC.@ACTION.* CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT SMPE.@ACTION.* CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT SYSREG.@DISPLAY CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT SYSREG.@PROFILE.DISPLAY CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT METHOD.@DISPLAY CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT DEPLOY.* CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT CONFIG.@DISPLAY CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT CONFIG.@ACTION.CREATE CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
PERMIT CONFIG.@ACTION.REMOVE CLASS(CAMSM) ID(MSMPRF2) ACCESS(READ)
```

## Example: Set Up Security for Restricted Users

You want to define a profile, MSMPRF3, that grants access to the following actions only:

- Download product packages.
- Install product packages that are downloaded outside of CA CSM.
- Migrate an existing SMP/E environment to CA CSM.

- Remove knowledge of an SMP/E environment from CA CSM.
- Create deployments and deploy them (if they are the owner).
- Create and maintain remote systems within the system registry, including profile information.
- Implement prepared configurations on remote systems.

Issue the following IBM RACF commands:

```
ADDGROUP MSMPRF3 DATA('CA CSM SMPE')
```

```
RDEFINE CAMSM LOGON UACC(NONE)
RDEFINE CAMSM ADMIN.SETTINGS.USER.* UACC(NONE)
RDEFINE CAMSM SC.@ACTION.INSTPKG UACC(NONE)
RDEFINE CAMSM SMPE.@ACTION.MIGRATE UACC(NONE)
RDEFINE CAMSM SMPE.@ACTION.REMOVECSI UACC(NONE)
RDEFINE CAMSM DEPLOY.@SELF UACC(NONE)
RDEFINE CAMSM SYSREG.* UACC(NONE)
RDEFINE CAMSM METHOD.@DISPLAY UACC(NONE)
RDEFINE CAMSM CONFIG.@ACTION.IMPL UACC(NONE)
```

```
PERMIT LOGON CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT ADMIN.SETTINGS.USER.* CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT SC.@ACTION.INSTPKG CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT SMPE.@ACTION.MIGRATE CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT SMPE.@ACTION.REMOVECSI CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT DEPLOY.@SELF CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT SYSREG.* CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT METHOD.@DISPLAY CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
PERMIT CONFIG.@ACTION.IMPL CLASS(CAMSM) ID(MSMPRF3) ACCESS(READ)
```

## Connect Users to the Group Profiles

You connect users to group profiles to grant the users access to CA CSM actions in various roles.

To connect users to group profiles, issue IBM RACF commands in TSO, for example:

```
CONNECT MSMUSR1 GROUP(MSMPRF1)
CONNECT MSMUSR2 GROUP(MSMPRF2)
CONNECT MSMUSR3 GROUP(MSMPRF3)
```

The example sets up the following configuration:

- The MSMPRF1 profile permits access to the user MSMUSR1.
- The MSMPRF2 profile permits access to the user MSMUSR2.
- The MSMPRF3 profile permits access to the user MSMUSR3.

## How to Set Up SCS Address Space Security

The SCS address space verifies the user ID assigned to the requesting started task or initiated job and authorizes it to connect.

The security setup that is required for CA CSM is only set up on the driving system. To set up the SCS address space security, do so on every target system, which can include the CA CSM driving system.

**Note:** An unauthorized CA CSM user ID is denied access to the selected target system.

If security profiles are not defined, CA CSM cannot connect to the SCS address space, including from within the address space.

Configure permission to access the entity SCSAS.CONNECT (READ authority) of the class CAMSM. The permission allows connections to the SCS address space through the CA CSM application server and the SCS address space.

PassTickets are used to verify the started task ID of the CA CSM application server. Verifying the started task ID allows secure connections from a remote system to the address space.

To set up SCS address space security:

1. [Set up SCS address space security](#) (see page 67).
2. [Configure PassTickets](#) (see page 68).

## Set Up SCS Address Space Security

Set up security for the SCS address space in IBM RACF.

CAMSM is the default name of the SAF resource class. Your system may use a different name depending on your CA CSM installation. If you change the default SAF resource class name, update the SAF class attribute in the MSMCPARM member.

**Note:** For more information about the MSMCPARM member, see the *Administration Guide*.

**Note:** If you have already [defined and activated the CAMSM resource class in IBM RACF](#) (see page 63), you can skip steps 1 through 4.

### Follow these steps:

1. Issue the SETROPTS LIST command to verify that the CDT resource appears within both the CLASSACT and RACLIST list of entries.

2. Define the generic profile:

```
RDEFINE CDT CAMSM UACC(NONE) CDTINFO(GENERIC,MAXLENGTH(246) POSIT(nnn)  
OTHER(ALPHA,NATIONAL,NUMERIC,SPECIAL) RACLIST(ALLOWED))
```

#### ***nnn***

Defines a posit number that does not conflict with IBM reserved values.

**Note:** For more information about posit numbers, see the *IBM Server RACF Command Language Reference*.

The generic profile is defined.

3. Make the generic profile changes take effect:

```
SETROPTS RACLIST(CDT) REFRESH
```

4. Activate the CAMSM class:

```
SETROPTS RACLIST(CAMSM) CLASSACT(CAMSM)
```

5. Define the resource profiles within the CAMSM class:

```
RDEFINE CAMSM SCSAS.CONNECT UACC(NONE)
```

6. Permit the resource to a user:

```
PERMIT SCSAS.CONNECT CLASS(CAMSM) ID(userid) ACCESS(READ)
```

#### ***userid***

Specifies the user ID assigned to the SCS address space.

7. (Optional) If the CAMSM class is RACLISTed, refresh the class:

```
SETROPTS RACLIST(CAMSM) REFRESH
```

## Configure PassTickets

Set up PassTickets on the system where the CA CSM application server is executing and on each system where the SCS address space is running.

**Note:** To generate a valid PassTicket, use the values for the remote SCS address space on the system where the CA CSM application server is running.

To set up PassTickets, use the commands in the following examples on both the server and remote target systems.

**Note:** These examples are provided as a guideline and are intended for security administrators familiar with PassTicket configuration.

- [Example: Configure PassTickets for CA CSM Application Server](#) (see page 69)
- [Example: Configure PassTickets for SCS Address Space on Remote Systems](#) (see page 70)

## Example: Configure PassTickets for CA CSM Application Server

You can use IBM RACF to configure PassTickets on the system where the CA CSM application server is executing.

### Follow these steps:

1. Activate the PassTicket class:

```
SETRROPTS CLASSACT(PTKTDATA)
SETRROPTS RACLIST(PTKTDATA)
SETRROPTS GENERIC(PTKTDATA)
```

2. Define a profile for the application and specify the session key:

```
RDEFINE PTKTDATA MSMCAPPL SSIGNON(KEYMASKED(0123456789ABCDEF)) UACC(NONE)
```

#### ***MSMCAPPL***

Defines the session key for the SCS address space ID used during CA CSM Configuration processing. This name may have been overridden when you installed CA CSM, so it should reflect the real application name.

**Note:** This example demonstrates a complete session key value of 16 hex digits (creating an 8-byte or 64-bit key). Change your key so that it consists of 16 random hex digits, and is different from the values in this example. Each application key must be the same on all systems in the configuration, and the values must be kept secret and secured.

3. Define a profile and permit access to the MSMCAPPL PassTicket session key value for the Started Task user ID so that it can access the SCS address space:

```
RDEFINE PTKTDATA IRRPTAUTH.MSMCAPPL.stc-userid UACC(NONE)
```

#### ***stc-userid***

Specifies the user ID associated with the CA CSM application server started task. This user ID only needs the ability to generate a PassTicket for itself.

4. Permit access to the MSMCAPPL PassTicket session key value for the CA CSM application server:

```
PERMIT IRRPTAUTH.MSMCAPPL.stc-userid CLASS(PTKTDATA) ID(stc-userid)
ACCESS(READ,UPDATE)
```

5. Refresh the PTKTDATA class:

```
SETROPTS RACLIST(PTKTDATA) REFRESH
```

### Example: Configure PassTickets for SCS Address Space on Remote Systems

You can use IBM RACF to configure PassTickets on the remote systems where the SCS address space is running.

#### Follow these steps:

1. Activate the PassTicket class:

```
SETROPTS CLASSACT(PTKTDATA)
SETROPTS RACLIST(PTKTDATA)
```

2. Define a profile for the application and specify the session key:

```
RDEFINE PTKTDATA MSMCAPPL SSIGNON(KEYMASKED(0123456789ABCDEF)) UACC(NONE)
```

#### **MSMCAPPL**

Defines the session key for the SCS address space ID used during CA CSM Configuration processing. This name may have been overridden when you installed CA CSM, so it should reflect the real application name.

**Note:** This example demonstrates a complete session key value of 16 hex digits (creating an 8-byte or 64-bit key). Change your key so that it consists of 16 random hex digits, and is different from the values in this example. Each application key must be the same on all systems in the configuration, and the values must be kept secret and secured.

3. Permit access to the MSMCAPPL PassTicket session key value for the SCS address space Started Task user ID:

```
RDEFINE IRRPTAUTH.MSMCAPPL.stc-userid CLASS(PTKTDATA) UACC(NONE)
```

#### **stc-userid**

Specifies the SCS address space Started Task user ID.

4. Refresh the PTKTDATA class:

```
SETROPTS RACLIST(PTKTDATA) REFRESH
```

## How to Set Up PassTickets for External Operations

To let CA CSM perform external operations on your behalf without saving your password, configure IBM RACF to use PassTickets.

You do so to allow users to perform the following actions:

- Launch CA CSM from CA Chorus without requiring an additional user login.  
**Note:** For more information about CA Chorus, see the CA Chorus user documentation.
- Schedule automatic maintenance updates (receiving and applying maintenance) for products that are installed in an SMP/E environment.

**Important!** To complete the process of configuring CA CSM to perform external operations on your behalf without saving your password, update the CA CSM startup parameters after you install CA CSM. For more information, see *Configuring CA CSM to Perform Automatic Maintenance Updates* in the CA CSM bookshelf under User Documentation By Task, and see the *Installation Guide*.

### Example: Configure PassTickets for External Operations

This sample shows how to use IBM RACF to configure PassTickets for external operations.

If you plan to let CA CSM perform external operations on your behalf without saving your password, update the CA CSM startup parameters after you install CA CSM. For more information, see the *Installation Guide* and *Configuring CA CSM to Perform Automatic Maintenance Updates* in the CA CSM bookshelf under User Documentation By Task.

#### Follow these steps:

1. Define profiles for the application in the PTKTDATA class for the application and specify the session keys:

```
SETROPTS CLASSACT(PTKTDATA) RACLIST(PTKTDATA)
RDEFINE PTKTDATA applid SSIGNON(KEYMASKED(0123456789ABCDEF)) APPLDATA('NO
REPLAY PROTECTION') UACC(NONE)
```

#### ***applid***

Defines the application ID used for PassTicket validation to authenticate connections to the server. Replace *applid* with your CA CSM applid.

**Default:** CHORWEBS

### KEYMASKED

Defines an encryption key for the application using values that are different from the values in the sample syntax.

**Note:** The sample syntax demonstrates a complete key value of 16 hexadecimal digits (creating an 8-byte or 64-bit key). Each application key must be the same on all systems in the configuration and the values must be kept secret and secured.

### APPLDATA('NO REPLAY PROTECTION')

Lets you reuse the same PassTicket multiple times.

The CA CSM session keys are defined.

**Note:** This example demonstrates a session key value of 16 hexadecimal digits (creating an 8-byte or 64-bit key). Use a different value when you define your session keys. Each application key must be the same on all systems in the configuration and the values must be kept secret and secured.

2. Permit the CA CSM started task user ID to generate and evaluate PassTickets on behalf of CA CSM users:

```
SETROPTS GENERIC(PTKTDATA)
RDEFINE PTKTDATA IRRPTAUTH.applid.* UACC(NONE)
PERMIT IRRPTAUTH.applid.* CLASS(PTKTDATA) ID(stc_userid) ACCESS(READ,UPDATE)
```

#### *stc\_userid*

Specifies the CA CSM application server started task user ID. This user ID must be able to generate PassTickets for any user.

**Default:** MSMSERV

#### *applid*

Defines the application ID used for PassTicket validation to authenticate connections to the server.

**Default:** CHORWEBS

3. Allow individual users to access CA CSM:

```
RDEFINE APPL applid UACC(NONE)
PERMIT applid CLASS(APPL) ID(userid) ACCESS(READ)
SETROPTS CLASSACT(APPL)
```

#### *userid*

Defines a user who needs to perform the external operations.

4. Refresh the PTKTDATA class:

```
SETROPTS RACLIST(PTKTDATA) REFRESH
```

PassTickets are configured.

You have completed security setup for CA CSM with IBM RACF.



You completed site preparation. Your system is ready to install CA CSM.