CA Chorus™ Software Manager

Site Preparation Guide

Release 5.1

51000068XPG, First Edition

CA Technologies Product References

This document references the following CA Technologies products:

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

Contact CA Technologies

Contact CA Support

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

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

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Contents

Chapter 1: Overview

This guide describes the preparation you should do before you install CA CSM Release 5.1 or upgrade CA CSM to the latest version.

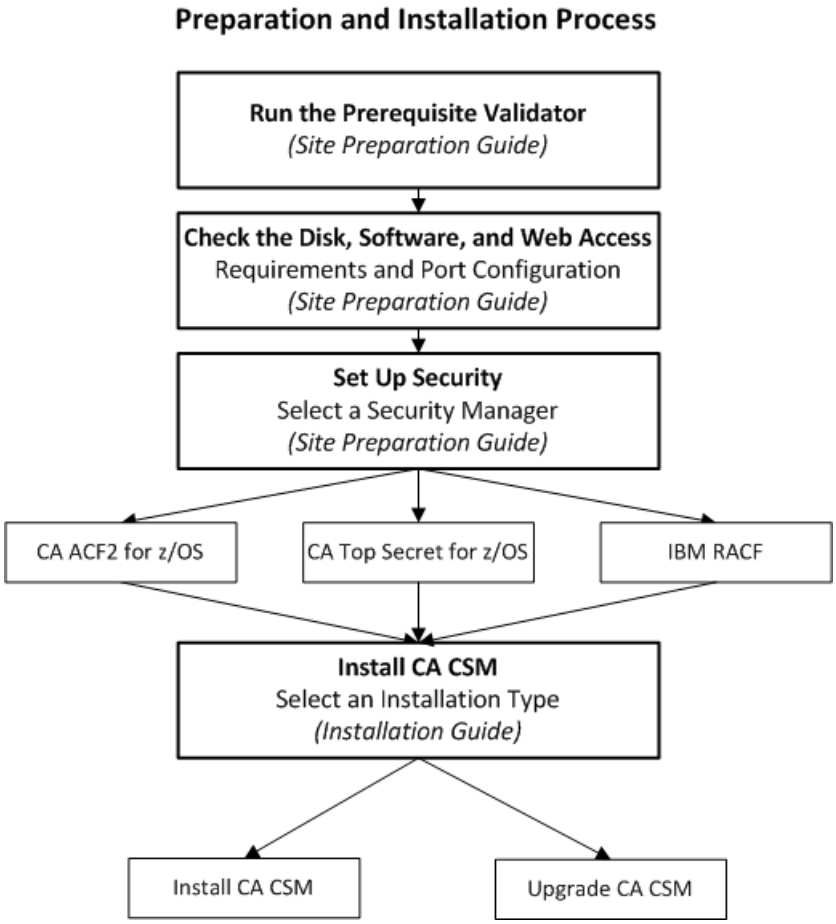
This section contains the following topics:

Audience

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

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.



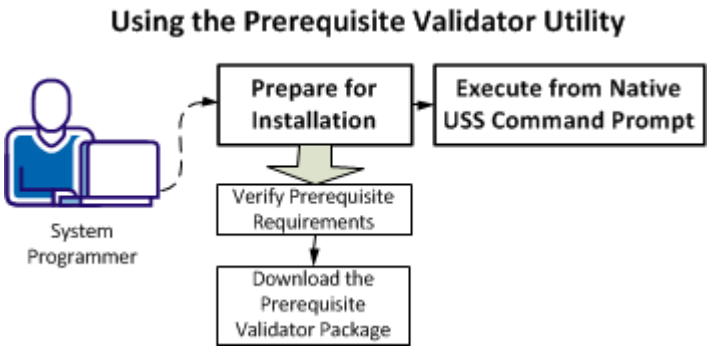
To prepare for installation and install CA CSM, complete the following steps:

1. Run the Prerequisite Validator utility as described in the *Site Preparation Guide*.
2. Verify the disk, software, and web access requirements, and port configuration as described in the *Site Preparation Guide*.
3. Set up security requirements as described in the *Site Preparation Guide*.
4. Install CA CSM Release 5.1 or upgrade your existing version of CA CSM to Release 5.1 as described in the *Installation Guide*.

Chapter 2: How to 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:



1. Prepare for installation (see page 9).
   a. Verify the Prerequisite Validator requirements (see page 9).
   b. Download the Prerequisite Validator product package (see page 10).
2. Execute from native USS command prompt (see page 11).

Prepare for Installation

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

1. Verify the Prerequisite Validator requirements (see page 9).
2. Download the Prerequisite Validator product package (see page 10).

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

- Java

  Your system has IBM Java SDK for z/OS:

  - Java 6.0, build 2.4, at maintenance level SR9 (31 bit or 64 bit).
  - Java 6.0, build 2.4, at maintenance level SR10 (31 bit or 64 bit).
  - Java 6.0, build 2.6, base build (31 bit or 64 bit).

    Note: Java 6.0, build 2.6 is the equivalent of IBM Java 6.0.1. For Java 6.0, install PTF UK56434, APAR PM08437, SDK6 SR8.
  - Java 6.0.1, build 2.6, at maintenance level SR1 (31 bit or 64 bit).
  - Java 7.0, build 2.6 (31 bit or 64 bit).
- 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 51000068XU1.pax.Z`

   Note: The full pax file name, including the Z suffix, is case-sensitive. Verify that you use the exact case of the file name on the system where you issue the pax command. Rename the file, if necessary.

   The Bin folder contents are extracted.
4. Issue the following command:

   `cd Bin`
5. (Optional) Modify the default properties file parameters (see page 12) if necessary.
6. Issue the following command to invoke the utility:

   `./MSMVal.sh JavaHomePath`

   For example:

   `./MSMVal.sh /usr/lpp/java/J6.0`

   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.

8. (Optional) If you did not provide a host name when you modified the default file parameters (see page 12) 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-RequisiteLog*yyyy-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 or IP Address

HOSTNAME=

Specify 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.

Local Host FTP Port

ftp.port=

Specify 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

Authorization for Issuing FTP Command

ftp.stat.check.credential=

Specify ftp.stat.check.credential=y if your site requires authorization to issue FTP quote STAT commands. 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

Proxy Server for FTP Request

The following parameters are related to FTP proxy checks. Set the parameter to **yes** to activate FTP check through the proxy.

```
ftp.proxy.enabled=
ftp.proxy.host=
ftp.proxy.port=
ftp.proxy.credential.check=
ftp.proxy.fireCmd.proxy_userid=
ftp.proxy.fireCmd.site=
ftp.proxy.fireCmd.acct=
ftp.advanced.session.options=
```

The utility verifies the connection to the external CA Support FTP servers. If your site requires these requests to go through a proxy server, then modify these parameters as shown in the following example:

```
ftp.proxy.enabled=yes
ftp.proxy.host=hostname_or_IP_address
ftp.proxy.port=port_number
ftp.proxy.credential.check=n_or_y
```

When ftp.proxy.credential.check=y, change the following parameters:

```
ftp.proxy.fireCmd.proxy_userid=proxy_userid
```

You can change the following parameters based on your proxy requirements:

```
ftp.proxy.fireCmd.site=
ftp.proxy.fireCmd.acct=
ftp.advanced.session.options=
```

Proxy Server for HTTP Request

The following parameters are related to HTTP proxy checks. Set the following parameter to **yes** to activate HTTP check through the proxy.

```
http.proxy.enabled=
http.proxy.host=
http.proxy.port=80
http.proxy.credential.check=
http.proxy.type=
http.domain=
```

The utility verifies the connection to the external CA Support HTTP servers. If your site requires these requests to go through a proxy server, then modify these parameters as shown in the following example:

```
http.proxy.enabled=yes
http.proxy.host=company_proxy_name
http.proxy.port=80
http.proxy.credential.check=y_or_n
http.proxy.type=NTLM
http.domain=company_domain_name
```

SAF Resource Access Check

`SafSecurityResourceAccess=`

The utility verifies user access for the following resources:

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

Specify SafSecurityResourceAccess=n to turn off the resource access check.

Default: y

MSMServerPortNo

`MSMServerPortNo=`

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

Default: 22120

MSMDSIPORTNO

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

Default: 22130

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

MSMTomcatServerShutdownPortNo

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

Default: 22150

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

Chapter 3: Verify 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

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 = 680 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.
  - z/OS space = 678 cylinders

    This space contains the CA Datacom/MSM SMP/E environment and runtime libraries. The SMP/E environment contains the CA Datacom/MSM, [assign the DSV variable value for your book], and CA CSM components.
  - 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. Additional space is needed for the SDS target system.
  - SDS deployment space = 500 cylinders

    For the 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 additional 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, Version 14, or r12.

- Verify that CETN500 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 CETN500 into CA Common Services for z/OS r12 or Version 14, it replaces CETN300 or CETN400.

  Note: Apply all published CETN500 maintenance, deploy to all target systems, and verify that HOLDDATA instructions are completed. If you do not apply CETN500, CA CSM is operational; however the Software Configuration Service (SCS) and the Software Deployment Service (SDS) are unavailable.

- Apply PTFs RO17488, RO19624, RO41046, RO42868, and RO43995 to r12.

  If you do not plan to use the SDS, you can skip PTFs RO19624 and RO42868.

  For passing APPLID on CAICCI authentication calls, apply PTF RO37409. PTF RO18999, which is also required, is automatically applied as part of RO42868.

- Apply PTFs RO40945, RO44235, and RO44412 to Version 14.

  If you do not plan to use the SCS, you can skip PTF RO44235.

  For passing APPLID on CAICCI authentication calls, apply PTFs RO30506, RO30937 and RO33987.

  CA Common Services for z/OS load libraries CAW0LOAD and CAW0PLD (Release 14.1 and Version 14.0) or CAIPLD (r12), 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 the SDS and the SCS.

  - CAIENF

- CAIRIM
- CA-C Runtime

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 IBM Java SDK for z/OS:
  - Java 6.0, build 2.4, at maintenance level SR9 (31 bit or 64 bit).
  - Java 6.0, build 2.4, at maintenance level SR10 (31 bit or 64 bit).
  - Java 6.0, build 2.6, base build (31 bit or 64 bit).

    Note: Java 6.0, build 2.6 is the equivalent of IBM Java 6.0.1.For Java 6.0, install PTF UK56434, APAR PM08437, SDK6 SR8.
  - Java 6.0.1, build 2.6, at maintenance level SR1 (31 bit or 64 bit).
  - Java 7.0, build 2.6 (31 bit or 64 bit).

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 at least one of the following web browsers:

- Microsoft Internet Explorer 7, 8, or 9
- Mozilla Firefox 13, 14, 15, or 16

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(BPXPRM*xx*):

MAXASSIZE(*nnnnn*)

Set to 2147483647.

MAXCPUTIME(*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 MAXCPUTIME=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, and 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:

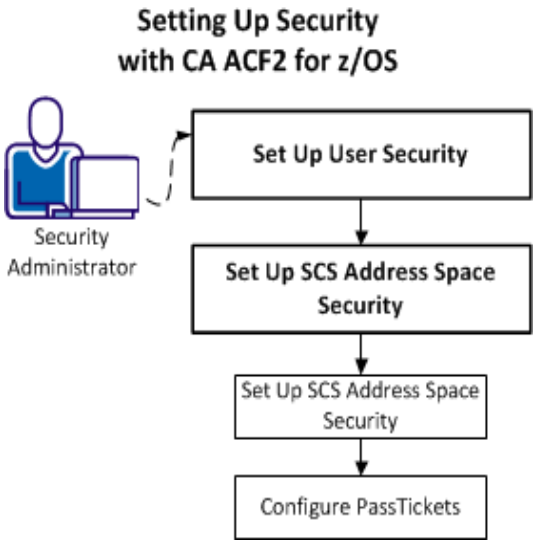
```
PORT      Application ID
22120 TCP MSMTC* ; CA CSM Application Server HTTP port
22130 TCP MSMTC* ; CA DSI server port
22140 TCP MSMTC* ; CA CSM Application server redirect port
22150 TCP MSMTC* ; CA CSM application server shutdown port
```

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(MSMTCSRV)). 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 4: How to 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 23):
2. Set up Software Configuration Service (SCS) address space security (see page 28):
   a. Set up SCS address space security (see page 29).
   b. Configure PassTickets (see page 29).

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

To refresh the CLASMAP record, issue the following command:

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

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

- Administrators (see page 24)
- Users (see page 25)
- Restricted Users (see page 27)

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 29).
2. Configure PassTickets (see page 29).

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.

Follow these steps:

1. Enter the following command to define the GSO record:

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

2. Enter the following command to 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 30)
- Example: Configure PassTickets for SCS Address Space on Remote Systems (see page 31)

After you finish configuring PassTickets on both the server and remote target systems, you have completed security setup for CA CSM with CA ACF2 for z/OS.

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. Enter the following commands to 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 shown 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. Enter the following commands to 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. Enter the following commands to 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. Enter the following commands to 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 shown 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. Enter the following commands to 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*.

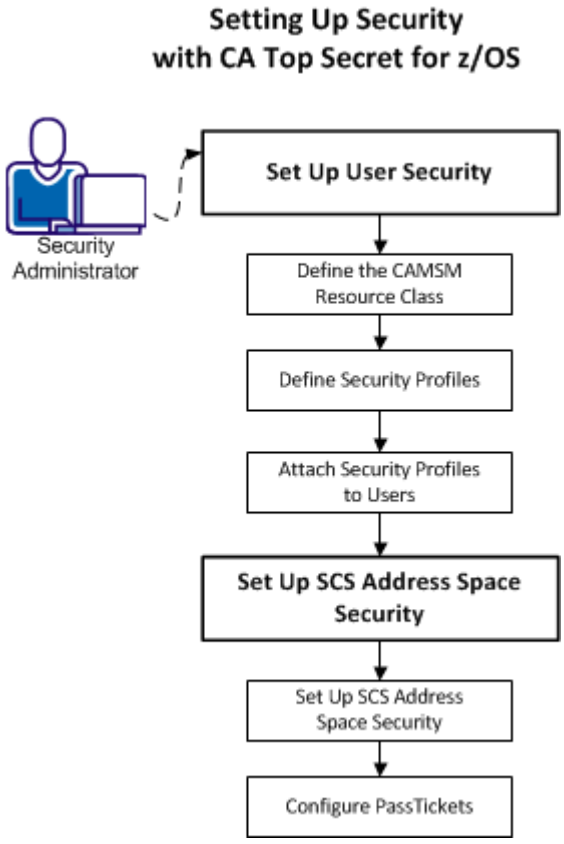
3. Enter the following commands to complete the PassTicket setup on the remote systems:

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

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

Chapter 5: How to Set Up Security for CA CSM with CA Top Secret for z/OS

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



1. Set up user security (see page 34):
   a. Define the CAMSM resource class (see page 34).
   b. Define security profiles (see page 35).
   c. Attach security profiles to users (see page 37).
2. Set up Software Configuration Service (SCS) address space security (see page 28):
   a. Set up SCS address space Security (see page 38).
   b. Configure PassTickets (see page 39).

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 34).
2. Define the security profiles to configure the roles (see page 35).
3. Attach the profiles to users (see page 37).

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. Issue the following commands to 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 35)
- Users (see page 36)
- Restricted Users (see page 36)

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.

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 38).
2. Configure PassTickets (see page 39).

Set Up SCS Address Space Security

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

Follow these steps:

1. Enter the following command to 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. Enter the following command to create a CA CSM departmental ACID:

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

3. Enter the following command to define the resource profiles within the CAMSM class:

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

4. Enter the following command to create a CA Top Secret for z/OS profile.

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

5. Enter the following command to permit the resource to access the profile:

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

6. Enter the following command to 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 39)
- Example: Configure PassTickets for SCS Address Space on Remote Systems (see page 40)

After you finish configuring PassTickets on both the server and remote target systems, you have completed security setup for CA CSM with CA Top Secret for z/OS.

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. Enter the following command to 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. Enter the following command to 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, and this ownership lets the department administrator (or higher) define permissions for PassTicket generation and validation.

3. Enter the following command to 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 shown 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. Enter the following command to 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. Enter the following command to define the SCS address space PassTicket session key:

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

   MSMCAPPL

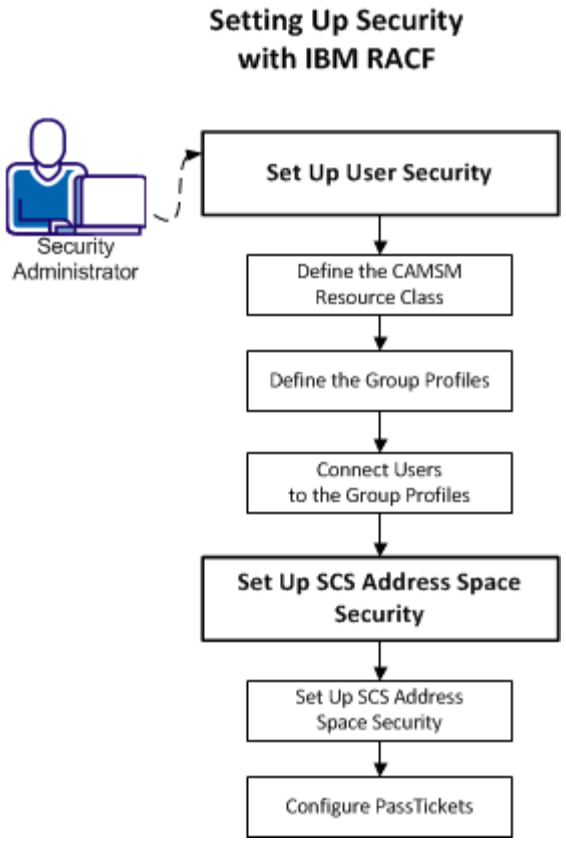
   Defines the session key for the SCS address space ID used during CA CSM Configuration processing. This name may have been overridden when you installed CA CSM, so it should reflect the real application name.

   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 shown 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.

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

Chapter 6: How to Set Up Security for CA CSM with IBM RACF

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



1. Set up user security (see page 42):
   a. Define the CAMSM resource class (see page 42).
   b. Define the group profiles (see page 43).
   c. Connect users to the group profiles (see page 45).
2. Set up Software Configuration Service (SCS) address space security (see page 28):
   a. Set up SCS address space security (see page 47).
   b. Configure PassTickets (see page 47).

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 42).
2. Define the group profiles (see page 43).
3. Connect users to the group profiles (see page 45).

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 STEROPTS LIST command to verify that the CDT resource appears within both the CLASSACT and RACLIST list of entries.
2. Issue the following command to 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. Issue the following commands to 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 and 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 43)
- Users (see page 44)
- Restricted Users (see page 44)

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 47).
2. Configure PassTickets (see page 47).

Set Up SCS Address Space Security

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

Note: If you have already defined and activated the CAMSM resource class in IBM RACF (see page 42), you can skip steps 1 through 4.

Follow these steps:

1. Issue the STEROPTS LIST command to verify that the CDT resource appears within both the CLASSACT and RACLIST list of entries.
2. Issue the following command to 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. Enter the following command to make the generic profile changes take effect:

   ```
   SETROPTS RACLIST(CDT) REFRESH
   ```
4. Enter the following command to activate the CAMSM class:

   ```
   SETROPTS RACLIST(CAMSM) CLASSACT(CAMSM)
   ```
5. Enter the following command to define the resource profiles within the CAMSM class:

   ```
   RDEFINE CAMSM SCSAS.CONNECT UACC(NONE)
   ```
6. Enter the following command to 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, enter the following command to 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 48)
- Example: Configure PassTickets for SCS Address Space on Remote Systems (see page 49)

After you finish configuring PassTickets on both the server and remote target systems, you have completed security setup for CA CSM with IBM RACF.

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. Enter the following commands to activate the PassTicket class:

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

2. Enter the following command to 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 shown 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. Enter the following command to 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. Enter the following command to 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. Enter the following command to 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. Enter the following commands to activate the PassTicket class:

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

2. Enter the following command to 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 shown 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. Enter the following command to 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. Enter the following command to refresh the PTKTDATA class:

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

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