

IBM WebSphere Developer for zSeries Version 6.0



Common Access Repository Manager Host Installation and Configuration Guide

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Note

Before using this document, read the general information under "Notices" on page 9.

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This edition applies to Common Access Repository Manager for version 6.0 of IBM WebSphere Developer for zSeries (product number 5724-L44) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this book

This book discusses the Common Access Repository Manager (CARMA) Technology Preview for WebSphere® Developer for zSeries® (WD/z). It includes instructions on how to install and configure a CARMA server on your z/OS® host system. Important release notes are also included.

Who should read this book

This book is intended for system administrators who would like to preview the capabilities of CARMA. To use this book, you need to be familiar with USS and MVS™ host systems.

Chapter 1. Installation

Prerequisites

In order to install CARMA on a z/OS host you need the WD/z 6.0.0 host component (FMID: H001600) installed on your host machine.

Downloading and unzipping the installation packages

To set up a CARMA server on your host system, you will first need the required installation packages. Two packages are required: the installation package for the USS CARMA components (CRA.UNIX.zip), and the installation package for the CARMA server (CRA.MVS.zip). These installation packages are summarized in the following table:

| Package | Contents | Environment |
|--------------|----------------------------------|----------------|
| CRA.UNIX.zip | RSE miner | z/OS UNIX® |
| | REXX shell scripts | z/OS UNIX |
| | Properties file | z/OS UNIX |
| | Documentation | z/OS UNIX |
| CRA.MVS.zip | CARMA load modules | z/OS Batch |
| | Sample files | Batch TSO/ISPF |
| | PDS RAM | Batch TSO/ISPF |
| | TSO CLIST | Batch TSO/ISPF |
| | Message file | Batch TSO/ISPF |
| | Dataset preallocation JCL script | Batch TSO/ISPF |

Follow these steps to prepare for the installation process:

1. Download the required files to your workstation:
 - a. Browse to the following URL with your web browser:
<http://www.ibm.com/software/awdtools/devzseries>
 - b. Click on **Support** in the menu on the left.
 - c. Scroll down to and click on the **All downloads** link.
 - d. Browse to or search for the "Technology Preview download for the Common Access Repository Manager" item.
 - e. Follow the instructions on the web site to download the required files.
2. Unzip the files CRA.UNIX.zip and CRA.MVS.zip into temporary directories on your workstation.

Example: You might unzip the contents of CRA.UNIX.zip to c:\temp\cra\unix, and the contents of CRA.MVS.zip to c:\temp\cra\mvs.

Note: We will refer to the directory where you unzipped CRA.UNIX.zip as *UNIX_FILES_DIR*, and the directory where you unzipped CRA.MVS.zip as *MVS_FILES_DIR*. In the example above, *UNIX_FILES_DIR* would be c:\temp\cra\unix, and *MVS_FILES_DIR* would be c:\temp\cra\mvs.

Setting up a CARMA server on your z/OS host system

There are three steps involved in setting up a CARMA server on your z/OS host system.

1. Install the CARMA components on your USS host
2. Install the CARMA server on your MVS host
3. Configure your installation

Installing the CARMA components on your USS host

1. Create the required directory structure on your USS host by following these steps:

- a. Log onto your USS host.

Note: You should log onto the host using the root account. If you do not have access to the root account, substitute `/usr/lpp` with a temporary directory of your choosing in the instructions below.

- b. Change the working directory to `/usr/lpp` by entering:

```
cd /usr/lpp
```

- c. If the directory `tmp` does not exist in `/usr/lpp`, create it by entering:

```
mkdir tmp
```

2. Transfer the installation package from your workstation to your USS host by following these steps:

- a. Open a command prompt window on your workstation.

- b. Enter:

```
ftp IP_ADDRESS
```

where `IP_ADDRESS` is the IP address of your USS host.

- c. Provide your username and password when prompted to do so.

- d. After the FTP connection has successfully been established, enter:

```
lcd UNIX_FILES_DIR
cd /usr/lpp/tmp
bin
put cra.uss.tar
```

This should begin transferring the installation package to your USS host. Depending on the speed of your connection, this may take a while.

- e. After the file has successfully been transferred (no error messages should be displayed), enter:

```
quit
```

3. Unpack the `cra.uss.tar` file on your USS host by following these steps:

- a. Log onto your USS host.

- b. Change the working directory to `/usr/lpp/tmp` by entering:

```
cd /usr/lpp/tmp
```

- c. Unpack `cra.uss.tar` by entering:

```
tar -xvf cra.uss.tar
```

This command should produce a subdirectory named `cra`.

4. Install the CARMA components on your USS host by following these steps:

- a. Ensure that the working directory is `/usr/lpp/tmp` directory by entering:

```
cd /usr/lpp/tmp
```

- b. Create the installation directory for CARMA by entering the following:

```
mkdir CARMA_INSTALLATION_DIR
```

Note: We refer to the CARMA installation directory as *CARMA_INSTALLATION_DIR*. By default, the CARMA configuration files are configured with a default installation directory of */u/carma/cra*.

- c. Copy the CARMA installation files to the CARMA installation directory by entering:

```
cp -R cra/* CARMA_INSTALLATION_DIR.
```

Installing a CARMA server on your MVS host

1. Do one of the following:
 - If your host installation supports `site` commands, you can automatically preallocate the datasets for the CARMA libraries. Skip to step 2.
 - Otherwise, use the JCL script provided (`xmitjcl`) to preallocate the datasets for the CARMA libraries. You can either copy the contents of the file and paste it into a green screen editor, or transfer the file via FTP.

To transfer the file via FTP, follow these steps:

- a. Open a command prompt window on your workstation.
- b. Enter:

```
ftp IP_ADDRESS
```

where *IP_ADDRESS* is the IP address of your MVS host.
- c. Provide your username and password when prompted to do so.
- d. After the FTP connection has successfully been established, enter:

```
lcd MVS_FILES_DIR  
ascii  
put xmitjcl 'JCL_FILE'
```

where *JCL_FILE* is the host-side file you wish to be created for the JCL script. The above commands should begin transferring the JCL script to your MVS host. Depending on the speed of your connection, this may take a while.

- e. After the file has successfully been transferred (no error messages should be displayed), enter:

```
quit
```

After you have created your JCL file, you should follow these steps to preallocate the datasets for the CARMA libraries:

- a. Modify the JCL script as described in the file comments to specify the volume serial number (`volser`) of the disk on which the received files should temporarily be stored. These received files may be deleted and uncataloged at the end of the installation process (after the TSO RECEIVE process has completed).
 - b. Submit the preallocation JCL script.
2. Transfer the CARMA package files from your workstation to your MVS host by following these steps:
 - a. Ensure that the following MVS libraries exist in the *MVS_FILES_DIR* directory (the filenames should include the quotation marks):

```
'cra.techprev.acrac1st'  
'cra.techprev.acraload'  
'cra.techprev.acrasam'  
'cra.techprev.msg'  
'cra.techprev.vsamv.init'
```
 - b. Open a command prompt window on your workstation.
 - c. Enter:

```
ftp IP_ADDRESS
```

where *IP_ADDRESS* is the IP address of your MVS host.

- d. Provide your username and password when prompted to do so. The FTP connection should successfully be established.
- e. If you used the `xmitjcl` JCL script to preallocate the datasets for the CARMA libraries in step 1, skip this step. Otherwise, if you are using the `site` command to automatically preallocate the datasets, enter the following command (on a single line):

```
quote site unit=3390 VOL=VOLUME_NAME Blocksize=3120 lrecl=80 recfm=fb CY  
cond=ca tlg pdstype=pds
```

where *VOLUME_NAME* is the volume serial number (volser) of the disk on which the received files should temporarily be stored. These received files may be deleted and uncataloged at the end of the installation process (after the TSO RECEIVE process has completed).

- f. Enter:

```
l cd MVS_FILES_DIR  
bin  
cd 'cra.techprev.acraclst.xmit'  
put 'cra.techprev.acraclst.xmit'  
cd 'cra.techprev.acraload.xmit'  
put 'cra.techprev.acraload.xmit'  
cd 'cra.techprev.acrasam.xmit'  
put 'cra.techprev.acrasam.xmit'  
cd 'cra.techprev.msg.xmit'  
put 'cra.techprev.msg.xmit'  
cd 'cra.techprev.vsamv.init.xmit'  
put 'cra.techprev.vsamv.init.xmit'
```

Note: If you used the `site` command to automatically preallocate the datasets, it is not necessary to enter the above `cd` commands.

This should begin transferring the CARMA MVS libraries to your MVS host. Depending on the speed of your connection, this may take a while.

- g. After the files have successfully been transferred (no error messages should be displayed), enter:

```
quit
```

- 3. Log onto your MVS host using TSO.
- 4. Using Table 1, look up the corresponding *OUTPUT_FILENAME* for each *INPUT_FILENAME*. Enter the following commands at the TSO READY prompt for each of the files in Table 1:

```
receive indata('cra.techprev.INPUT_FILENAME.xmit')  
da('cra.MIDDLE_QUALIFIER.OUTPUT_FILENAME') vol(VOLUME_NAME)
```

where *VOLUME_NAME* is the volume serial number (volser) of the disk on which you would like to install this MVS library and *MIDDLE_QUALIFIER* is an optional qualifier you may use to customize the location of your CARMA installation. Both the volume serial number and the middle qualifier must be consistent between all of the datasets.

Table 1. MVS filename mappings

| Input Filename | Output Filename |
|----------------|-----------------|
| acraclst | scraclst |
| acraload | scraload |
| acrasam | scrasam |
| msg | msg |
| vsamv.init | vsamv.init |

Chapter 2. Upgrading

Follow these steps to upgrade an existing installation of CARMA:

Note: We will refer to the directory where the RSE CARMA components are currently installed on your USS machine as *CARMA_INSTALLATION_DIR*. By default, this directory should be */u/carma/cra*.

1. Backup your existing CARMA configuration files:
 - a. On your USS host, backup the existing configuration files in *CARMA_INSTALLATION_DIR/etc*.
 - b. On your MVS host, backup the existing files *cra.scrload*, *cra.scralst*, and *cra.scraram*.
2. Remove your old CARMA libraries:
 - a. Remove the old libraries from the *CARMA_INSTALLATION_DIR/lib* directory by entering:

```
rm -rf CARMA_INSTALLATION_DIR/lib/*
```
3. Install the new version of CARMA over your existing installation by following the instructions in Chapter 1, "Installation," on page 1.

Chapter 3. Configuration

After installing CARMA, you must configure CARMA. This involves the following two steps:

1. Configure the CARMA components on your USS host
2. Configure the CARMA server on your MVS host

Configuring CARMA on your USS host

Follow these steps to configure the CARMA components on your USS host:

1. Edit the `CARMA_INSTALLATION_DIR/etc/CRASRV.properties` file as follows:
 - a. Define the initial CRASRV port as the port that CRASRV will use to send information between the client and the host.
 - b. Define the range as the range of ports on which to attempt to connect CRASRV.
 - c. Define the location of the REXX submit script to CARASRV (this should default to `CARMA_INSTALLATION_DIR/bin/rexxsub`).

Example: The following is an excerpt from an example `CRASRV.properties` file:

```
port.start=2000
port.range=200
startup.script=$CARMA_INSTALLATION_DIR/bin/rexxsub
```

2. Configure the `CARMA_INSTALLATION_DIR/bin/rexxsub` CRASRV startup script to point to the location of your CRASRV PDS (`CRA.MIDDLE_QUALIFIER.SCRACLST(CRASUBMT)`), where `MIDDLE_QUALIFIER` is an optional middle qualifier as described in “Installing a CARMA server on your MVS host” on page 3).

Example: The following is an excerpt from an example `rexxsub` script in which the chosen middle qualifier is `TEST`:

```
exec 'cra.test.clist(crasubmt)' '"parm"'
```

3. Add the CARMA JAR file (`CARMA_INSTALLATION_DIR/lib/carma.jar`) and the directory that contains the `CRASRV.properties` file to the `CLASSPATH` variable in the following two configuration files:
 - `RSE_INSTALLATION_DIR/lib/rsed.envvars`
 - `RSE_INSTALLATION_DIR/lib/setup.env.zseries`

where `RSE_INSTALLATION_DIR` is the directory where RSE is installed (by default, this should be `/usr/lpp/wd4z/rse`).

Example: You might add lines similar to the following after the initial `CLASSPATH` variable definition in the `rsed.envvars` and `setup.env.zseries` configuration files:

```
CLASSPATH=$CLASSPATH:$CARMA_INSTALLATION_DIR/lib/carma.jar
CLASSPATH=$CLASSPATH:$CARMA_INSTALLATION_DIR/etc/
```

4. Add the CARMA miner to the RSE miner configuration file by adding the following line to the `RSE_INSTALLATION_DIR/lib/minerFile.dat` file:

```
com.ibm.carma.rse.server.miners.CARMAMiner
```

Note: The `RSE_INSTALLATION_DIR/lib/minerFile.dat` file may not be encoded in a format that host-based text editors such as Vi can interpret. In such a case, create a backup copy of this file and then download it to your workstation via FTP. Use a text editor that can interpret UTF-encoded

text files to edit the file. Before transferring the file back to your host system via FTP, use the `ascii` command to set your FTP client to ASCII mode.

Example: The following is an excerpt from an example `minerFile.dat` file:

```
com.ibm.etools.systems.dstore.miners.command.CommandMiner
com.ibm.etools.systems.universal.miners.UniversalFileSystemMiner
com.ibm.etools.systems.dstore.miners.environment.EnvironmentMiner
com.ibm.ftt.rse.mvs.server.miners.MVSFileSystemMiner
com.ibm.carma.rse.server.miners.CARMAMiner
```

Configuring CARMA on your MVS host

Follow these steps to configure your MVS host:

1. Configure the `CRA.MIDDLE_QUALIFIER.SCRACLST(CRASUBMT)` CLIST (where `MIDDLE_QUALIFIER` is a optional middle qualifier as described in “Installing a CARMA server on your MVS host” on page 3) to use your chosen middle qualifier. Replace all occurrences of `#mqual` with your chosen middle qualifier:

Example: If your middle qualifier were `TEST`, your CLIST file would include the following lines:

```
//STEPLIB DD DSN=CRA.TEST.SCRALOAD,DISP=SHR
//CRADEF DD DSN=CRA.TEST.VSAMV.CRADEF,DISP=SHR
//MSGPDS DD DSN=CRA.TEST.MSG,DISP=SHR
```

2. Configure the `CRA.MIDDLE_QUALIFIER.SCRASAM(CRAADRAM)` JCL script to use your middle qualifier and volume name. Replace all occurrences of `#cramidqual` with your chosen middle qualifier, and all occurrences of `#volume` with your chosen volume serial number.

Example: If your middle qualifier were `TEST` and your volume serial number were `TESTVOL`, your JCL script would include the following modifications:

```
Line 21: //DASD1 DD VOL=SER=TESTVOL,UNIT=SYSDA,DISP=SHR
Line 23: DEL CRA.TEST.CRADEF
Line 37: //INPUT DD DSN=CRA.TEST.VSAMV.INIT,DISP=SHR
Line 39: DEF CLUSTER (NAME('CRA.TEST.VSAMV.CRADEF'))
Line 42: KEYS(13 0) VOLUMES(TESTVOL)
Line 45: REPRO INFILE(INPUT) ODS(CRA.TEST.VSAMV.CRADEF)
Line 53: LISTCAT ENT('CRA.TEST.VSAMV.CRADEF') ALL
```

3. Submit the `CRA.MIDDLE_QUALIFIER.SCRASAM(CRAADRAM)` JCL script.

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