

# INCREASE: Increase AssociatorData Storage

The INCREASE function increases the size of the last dataset currently being used for the Associator or Data Storage. This function may be executed any number of times for the Associator. The maximum of five Data Storage space tables (DSSTs) limits Data Storage increases to four before all five Data Storage extents must be combined into a single extent with either the REORASSO or REORDB function of the ADAORD utility.

## Notes:

1. The Associator and Data Storage dataset sizes must be increased separately. It is *not* possible to increase both with a single operation.
2. After an INCREASE operation is completed, the INCREASE function automatically ends the current nucleus session. This allows for the necessary Associator or Data Storage formatting with ADAFRM before a new session is started. An informational message occurs to tell you that the nucleus has been stopped.

```
ADADBS INCREASE { ASSOSIZE | DATASIZE } = size  
                [ NOUSERABEND ]  
                [ TEST ]
```

This chapter covers the following topics:

- Essential Parameter
- Optional Parameters
- Example
- General Procedure
- Operating-System-Specific Procedures

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## Essential Parameter

### ASSOSIZE | DATASIZE: Size to Be Increased

The additional number of blocks or cylinders needed by the Associator or Data Storage dataset. To specify blocks, add "B" after the value; for example, DATASIZE=50B.

## Optional Parameters

### NOUSERABEND: Termination Without ABEND

When an error is encountered while the function is running, the utility prints an error message and terminates with user ABEND 34 (with a dump) or user ABEND 35 (without a dump).

If NOUSERABEND is specified, the utility will *not* ABEND after printing the error message. Instead, the message "utility TERMINATED DUE TO ERROR CONDITION" is displayed and the utility terminates with condition code 20.

### TEST: Test Syntax

Use the TEST parameter to test the operation syntax without actually performing the operation. Only the syntax of the specified parameters can be tested; not the validity of values and variables. See Syntax Checking with the TEST Parameter for more information about using this parameter.

## Example

The Associator is to be increased by 400 cylinders.

```
ADADBS INCREASE ASSOSIZE=400
```

## General Procedure

▶ The general procedure for increasing the size of the Associator or Data Storage is as follows:

1. Back up the database using the ADASAV utility. This step is optional but recommended.
2. Execute the ADADBS INCREASE function.
3. Format the additional space being added to the dataset with the ADAFRM utility.

## Operating-System-Specific Procedures

### OS/390 or z/OS Systems

Under OS/390 or z/OS, the same dataset may be formatted by specifying the DISP=MOD parameter in the JCL. The SPACE parameter for the dataset being increased should be set to

```
SPACE= ( CYL , ( 0 , n ) )
```

where  $n$  is the amount of space (in cylinders) being added. The ADAFRM control statement should also specify the number of cylinders being added. If the increased part of the dataset to be formatted is contained on a new volume, the VOL parameter of the JCL must include references to all volumes containing the dataset.

### Example 1: OS Single-Volume INCREASE

400 cylinders are to be added to an Associator dataset which currently contains 300 cylinders. The control statement for the INCREASE function would be:

```
ADADBS INCREASE ASSOSIZE=400
```

The following JCL example increases the Associator dataset using ADAFRM:

```
//DDASSOR1 DD
DSN= . . . ,DISP=MOD,SPACE=(CYL,(0,400))
```

and the actual ADAFRM control statement would be

```
ADAFRM ASSOFRM SIZE=400
```

## Example 2: OS Multivolume INCREASE

To provide the increase in example 1 for multiple volumes, specify the volumes in the JCS:

```
//DDASSOR1 DD DSN=...
//
DISP=(MOD,CATLG),VOL=SER=(V1,V2,...),SPACE=(CYL,(0,400))...
```

Include the following step after the INCREASE step but before the FORMAT step to ensure a correct catalog entry:

```
//UNCATLG EXEC PGM=IEFBR14
//DDASSOR1 DD DSN=... ,DISP=(SHR,UNCATLG)
```

## VSE/ESA Systems

 **The following procedures are recommended for increasing Associator or Data storage:**

1. Save the current database.
2. End the Adabas session normally with the ADAEND operator command.
3. Update the JCS defining the database to add the new extent on the same volume.

Before a new Associator or Data extent *on either a different or the same VSE volume* can be increased with ADADBS INCREASE and formatted with ADAFRM, that volume's table of contents (VTOC) must be updated to contain the new extent.

Use a job similar to the following example to update the VTOC for a single volume extent:

```
* $$ JOB JNM=jobname
* $$ LST ...
* $$ PCH ...
// ASSGN SYS001,DISK,VOL=volume,SHR
// DLBL ASSOEXT,'dsname',99/365,DA
// EXTENT SYS001,volume1,1,0,starttrack1,trackcount1
// EXTENT SYS001,volume1,1,1,starttrack2,trackcount2

// EXEC ASSEMBLY,GO
MODVTOC CSECT
        BALR 9,0
        BCTR 9,0
        BCTR 9,0
        USING MODVTOC,9
        OPEN ASSOEXT
        CLOSE ASSOEXT
        EOJ RC=0
```

```

ASSOEXT DTFPH TYPEFLE=OUTPUT,DEVADDR=SYS001,DEVICE=DISK,MOUNTED=ALL
        END
/*
/ &
* $$ EOJ

```

For a two-volume extent, use a job similar to the following example:

```

* $$ JOB JNM=jobname
* $$ LST ...
* $$ PCH ...
// ASSGN SYS001,DISK,VOL=volume1,SHR
// ASSGN SYS002,DISK,VOL=volume2,SHR
// DLBL ASSOEXT,'dsname',99/365,DA
// EXTENT SYS001,volume1,1,0,starttrack1,trackcount1
// EXTENT SYS002,volume2,1,1,starttrack2,trackcount2
// EXEC ASSEMBLY,GO
MODVTOC CSECT
        BALR 9,0
        BCTR 9,0
        BCTR 9,0
        USING MODVTOC,9
        OPEN ASSOEXT
        CLOSE ASSOEXT
        EOJ RC=0
ASSOEXT DTFPH TYPEFLE=OUTPUT,DEVADDR=SYS001,DEVICE=DISK,MOUNTED=ALL
        END
/*
/ &
* $$ EOJ

```

**Note:**

This job causes VSE error message 4733D to be sent to the console, and the operator is asked for a response. After the JCS has been validated, the operator response should be "DELETE".

4. Perform the ADADBS INCREASE operation.
5. Run the new ADAFRM job to format the new extent. The ADAFRM job must specify the FROMRABN parameter, as shown in the following example:

```

ADAFRM ASSOFRM SIZE=size,FROMRABN=rabn-number

```

where *size* is the number of cylinders or blocks by which the dataset is to be increased, and *rabn-number* is the first RABN in the new extent.

6. Start the Adabas nucleus.

**Note:**

In a VM environment, certain restrictions apply to multivolume, multiextent files. If these restrictions are violated, VSE error 4n83I (invalid logical unit) may occur. Refer to the appropriate IBM documentation for more information about these restrictions.

## VM/ESA or z/VM Systems

Under VM/ESA or z/VM, there are two procedures for increasing the database. The first uses the ADAMAINT and INCREASE EXECs; the second is a step-by-step manual procedure.

## ▶ EXEC Procedure

1. Call the ADAMAINT EXEC to modify your CMS environment:

```
ADFnnnnn EXEC, DBnnnnn VOLUMES volume=vol-id, ...
```

ADAMAINT lets you add a new minidisk to an existing ASSO/DATA/WORKRx, or define a new ASSO/DATA/WORKRx.

2. Call the INCREASE EXEC. This EXEC automatically does a LINK, an ADADBS ADD, or an ADADBS INCREASE (depending on what you specify in ADAMAINT), followed by an ADAFRM to format the new area.

## ▶ Manual Procedure

1. Define a new minidisk that is one cylinder (or pseudo-cylinder) larger than the required size.
2. Issue the FORMAT command:

```
FORMATcuu T nnn
```

where *cuu* is the virtual unit address of the new minidisk and *nnn* is "1" for a CKD device or "20" for an FBA device. When prompted for a volume label, you must specify a unique name of up to six alphanumeric characters.

3. Reserve the minidisk with the following command:

```
RESERVE file-name file-type T
```

where *file-name* and *file-type* match the file name and file type used for the file on the primary minidisk.

4. Execute the ADADBS INCREASE utility as described in this document.
5. End the Adabas session with ADAEND.
6. Produce an ADAREP report, and find the first RABN in the new extent. This may be located in the physical layout of the database. The RABN range on this extent indicates VOLSER NUMBER "xxxxxx".
7. Add CP LINK statements for the new minidisk to the directory or PROFILE EXEC, as required. Update any PROFILE EXECs or CP directory entries for any other virtual machines with multiwrite access to this database (for example, the DBA machine).
8. For any EXECs that require it, modify the DATADEF statements for the file. If the standard Software AG EXECs are being used, these DATADEF statements are found in the ADFnnnnn EXEC, where "nnnnn" is the five-digit database ID.

To modify the DATADEF statement, locate the line:

```
volx = vol-id
```

where *volx* is "a" for the Associator or "d" for DATA, and *vol-id* is the previous volume list. Change this line to:

```
volx =( vol-id, vo-label )
```

where *vo-label* is the volume label specified while entering the FORMAT command in step 2.

- Execute the ADAFRM utility for the file as:

```
ADAFRM xxxxFRM      SIZE=size, FROMRABN=rabn-number
```

where

|                    |   |
|--------------------|---|
| <i>xxxx</i>        | is either ASSO or DATA  |
| <i>size</i>        | is the size of the minidisk minus one cylinder (or psuedo-cylinder)           |
| <i>rabn-number</i> | is the first RABN on the new extent as shown in the report created in step 6. |

## BS2000 Systems

 Use the following procedure to increase the database on BS2000 systems:

- Execute ADADBS INCREASE as described in section General Procedure.
- End the Adabas session with "ADAEND".
- Produce a database report by running the ADAREP utility. Use the report to find the first RABN for the new extent in the "Physical Layout of the Database" portion of the report. The RABN range is indicated in the "VOLSER NUMBER" column.
- Increase the dataset with the BS2000 "MODIFY-FILE-ATTRIBUTE" command. For example:

```
/MODIFY-FILE-ATTRIBUTE ADA99.ASSO,PUB( SPACE=REL(400) )
```

**Note:**

In the old ISP format, this was performed by the FILE command; for example, /FILE ADA99.ASSO, SPACE=400.

- Format the new space by running the ADAFRM utility. An example for the space added in step 4 is:

```
ADAFRM ASSOFRM      SIZE=400B, FROMRABN=rabn-number
```

where *rabn-number* specifies the first RABN shown on the new extent, as shown in the report.