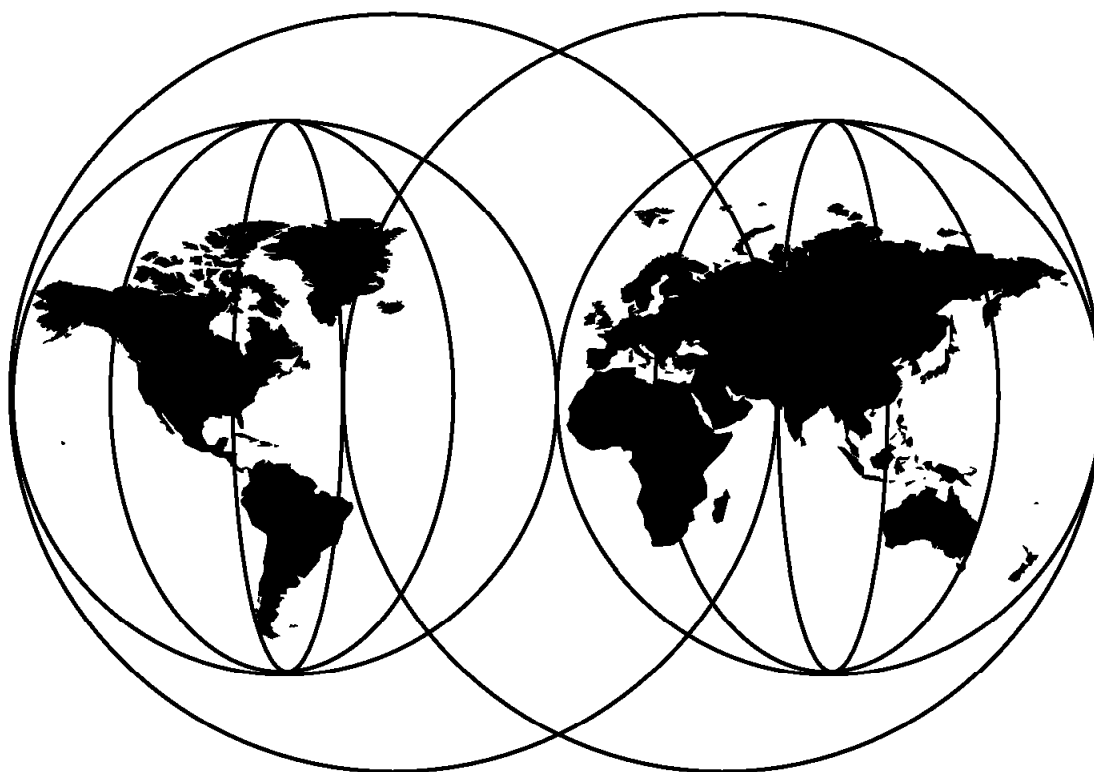




CICSplex SM Business Application Services: A New Solution to CICS Resource Management

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**CICSplex SM Business Application Services:
A New Solution to CICS Resource Management**

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Take Note!

Before using this information and the product it supports, be sure to read the general information in Appendix C, "Special Notices" on page 173.

First Edition (September 1998)

This edition applies to Version 1 Release 2 of CICS Transaction Server for OS/390, Program Number 5665-147, and Version 1 Release 3 of CICSplex System Manager for MVS/ESA, Program Number 5695-081, for use with OS/390 Version 1 Release 2, Version 1 Release 3, or Version 2 Release 4.

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Preface

This redbook is primarily intended for customers who are currently managing multiple CICS systems that either run as separate regions or use multiregion operation (MRO) or intersystem communication (ISC) links. It will help you implement CICSplex System Manager Business Application Services (BAS), a new, sophisticated way to manage your CICS resources.

The first five chapters of the book cover current resource management practices, BAS terminology and concepts, the preparatory and planning steps for BAS migration, and a cookbook approach to BAS migration of the ITSO application set.

Subsequent chapters of the redbook deal with BAS resource management as the application moves from development to production, configuration changes within the complex of CICS regions, and fallback and housekeeping procedures.

The cookbook approach that we present can help you implement new resource management practices for your business applications in terms of their CICS resources and associated CICS systems. These practices will significantly improve the manageability and availability of your CICS environments.

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Chapter 1. Introduction

In this chapter we discuss the facilities that CICS system administrators currently use to manage application resources and limitations associated with these facilities. We introduce base terminology and the new approach to CICS resource management.

1.1 Current Resource Management Practices

Resource definitions are the most basic element of the CICS environment. They provide the CICS system with information about the resources it should use and how it should use them. Some examples of resources are:

- Connections
- Databases
- Files
- Journals
- Programs
- Terminals
- Transactions
- Transient data queues

Your CICS system has to know which resources to use, what their properties are, and how they are to interact with each other.

Below we describe the facilities used to define these resources to the CICS environment.

1.1.1 Resource Definition Online and the CICS System Definition File

Resource definition online (RDO) uses the CICS-supplied CEDA, CEDB, and CEDC transactions. Definitions created by using RDO are stored in the CICS system definition (CSD) file and installed into an active CICS system from that file.

The CSD file is organized into groups and lists. The main purpose of a group is to provide a convenient method of collecting related resources on the CSD file. Every resource that you define must belong to a group.

A list contains the names of the groups that CICS will install at an initial or cold start.

1.1.2 DFHCSDUP

DFHCSDUP is an offline utility that enables you to define, list, and modify resources using a batch job. Using the DFHCSDUP utility, you can modify or define a large number of resources in one job.

1.1.3 EXEC CICS CREATE

Using EXEC CICS CREATE, you can add CICS resources to a CICS region without reference to the CSD file. EXEC CICS CREATE enables configuration and installation of CICS resources for large numbers of CICS regions from a single management focal point. With it you can write applications for administering a CICS system. APAR PQ02462 (PTF UQ05148) is required to provide the EXEC CICS CREATE facility in CICS/ESA 4.1 systems.

1.1.4 Autoinstall

Autoinstall applies to VTAM terminals, LU 6.2 sessions, journals, programs, mapsets, and partitionsets. Autoinstall functions use "model" definitions that have been set up through RDO or DFHCSDUP. On the basis of the models, CICS can then dynamically create and install new definitions for these resources.

1.1.5 Limitations

There are limitations associated with the facilities used to define resources to the CICS environment.

1.1.5.1 Resource Definition Online (RDO)

The main limitation of RDO is that the CEDA transaction operates on a single active CICS system, and thus care should be taken to ensure that relevant auditing of CEDA usage is maintained, particularly in a production environment.

1.1.5.2 DFHCSDUP

The DFHCSDUP utility cannot install resources into an active CICS system. Updates using DFHCSDUP cannot be made to a recoverable CSD file that is accessed in record level sharing (RLS) mode.

1.1.5.3 EXEC CICS CREATE

CREATE commands neither refer to nor record in the CSD file. The resulting definitions are lost on a cold start, and you cannot refer to them in a CEDA transaction.

1.1.5.4 Autoinstall

Not all resources can be installed through autoinstall, and resources that can be installed use a "model" definition. Therefore, transactions, files, and local shared resource (LSR) pools are just some of the resources that cannot be defined with autoinstall.

1.2 Business Application Services Overview

Business Application Services (BAS) is the component of the IBM CICSplex System Manager for MVS/ESA (CICSplex SM) product that is responsible for managing the CICS resource definition and installation process for business applications in your environment.

BAS, an alternative to RDO, enables you to manage CICS resources in terms of the business application to which they belong, rather than by their physical location in the CICSplex.

1.2.1 What Is a CICSplex?

The term *CICSplex* (a CICS complex) is used to describe two different concepts.

1.2.1.1 Management Environment

In a CICSplex SM environment the term *CICSplex* describes the largest set of CICS regions or systems to be manipulated as a single CICSplex SM entity. CICS regions in a CICSplex SM managed CICSplex do not have to be connected to each other.

The grouping of CICS systems for management purposes is purely logical. For example, a CICSplex could comprise all CICS systems on a particular MVS image, all CICS systems running a particular application, or all CICS systems accessible by a subset of your users.

The most significant characteristics of a CICSplex managed by CICSplex SM are:

- The CICSplex is the largest unit you can work with.
- You cannot copy CICSplex SM data from one CICSplex to another.
- CICSplexes are mutually exclusive, so no CICS system can belong to more than one CICSplex.

1.2.1.2 CICS Intercommunication Environment

Traditionally, the term *CICSplex* has been used to define an environment where two or more CICS regions were linked through CICS intercommunication facilities. The links can be either intersystem communication (ISC) or interregion communication (IRC), but within a CICSplex they are usually IRC. This configuration usually consists of at least one terminal-owning region (TOR), more than one application-owning region (AOR), and one or more regions that own the resources that are accessed by the AORs. These regions are usually referred to as *file-owning regions (FORs)*.

TORs are used to manage terminal sessions. The TOR routes transactions initiated from terminals to another region for execution. This function is known as *transaction routing*.

AORs are used to process the transactions and route the results back to the originating TOR. Transactions running in an AOR can also, if required, access resources on another region, such as a file, a transient data queue, or a temporary storage queue. This process is known as *function shipping*.

FORs are used to manage VSAM files, basic direct access method (BDAM) files, and CICS data tables. The FOR processes read, update, and delete requests for data records that have been function shipped to the FOR from an AOR and returns the results to the originating AOR.

1.2.2 What Is CICSplex SM?

CICSplex SM provides enterprisewide, single-system-image management for CICS Transaction Server for OS/390 (CICS TS) 1.1 and 1.2, CICS/ESA 4.1, CICS/ESA 3.3, CICS/MVS 2.1.2, CICS/VSE 2.3, and CICS OS/2 V2 and V3. In other words CICSplex SM provides you with the functions to manage multiple CICS systems as if they were a single system.

The principle components of CICSplex SM are:

- The coordinating address space (CAS), which provides the connection point for the Time Sharing Option (TSO) end-user interface (EUI). The CAS provides a single point of control for the CICSplex.
- The CICS managing address space (CMAS), which provides most of the CICSplex SM functions, including the single-system image. The CMAS provides basic infrastructure services such as message, trace, and program call. Locking services and event notification are also provided to enable event-driven management of the CICSplex.
- CICSplex SM agent code, which resides in user CICS systems that are to be managed by CICSplex SM. These CICS systems are referred to as *managed application systems (MASs)*. The CICSplex SM CMAS code directs requests, extracts data, and processes information. Requests for information or action are passed to the MAS agent code for execution. This code is responsible for accepting CICSplex SM requests, transforming them into various EXEC CICS requests, and managing the responses from their execution. The agent code is also responsible for detecting topology changes in the system.

1.2.3 CICSplex SM User Interface

The CICSplex SM user interface is an MVS/TSO Interactive System Productivity Facility (ISPF) EUI supported by the CAS. The ISPF interface is used to define and maintain the CICSplex SM configuration and to specify BAS, workload management (WLM), real-time analysis (RTA), and monitoring requirements. The CICSplex SM EUI also provides the functions of CEMT and other CICS-supplied transactions and can be used to monitor and control the resources of individual CICS systems. The EUI provides an immediate, interactive look at your resource definitions. It enables you to create an isolated resource for testing purposes, alter attributes in multiple definitions, or install a new version of a definition in a running system.

1.2.4 Batched Repository-Update Facility

The data repository associated with each CMAS contains the definitions that establish your CICSplex SM environment. You can create and maintain these definitions by using either the CICSplex SM EUI views or the batched repository-update facility. This facility is invoked from the EUI for the bulk application of CICSplex SM definitions to a CMAS data repository.

Instead of using multiple view screens repeatedly to create a large number of definitions, you can create an input file to add the definitions to the data repository all at one time. When you use BAS to create and maintain your resource definitions, the batched repository-update facility can streamline and simplify the definition process.

1.2.5 RDO and BAS

RDO is the primary method provided by CICS for defining resources to CICS systems. With RDO, resource definitions are tied to a single group, and groups are processed sequentially as a group list. Any duplicate definitions found later in the processing of a group list override any earlier definitions. The nature of some RDO definitions limits the use of RDO in a CICSplex environment. We note the following limitations:

- Duplicate resource definitions are required across CICS systems, unless the CSD is shared.
- Resource assignments are CICS system specific.

- A connection between two CICS regions cannot be defined as one entity. Each end of every communication link has to be defined explicitly.

BAS has several advantages over RDO:

- You can implement RDO-like definitions across the entire CICSplex.
- The sets of definitions BAS uses can be reused and associated with any number of other definitions or CICS systems. Duplicate definitions are retained and assigned version numbers, so that variations of a resource can coexist in a CICSplex. CICSplex SM considers CICS resources to be independent of any given group or CICS system; rather, they exist at the CICSplex level.
- You can manage resources on a business application basis, rather than a location basis.
- There is a common definition data repository for all resources in a CICSplex, across all supported platforms.
- The number of definitions required is reduced, you can reuse definitions and override individual attributes as needed, and you can use a single resource definition for both the local and remote instance.
- Multiple CICS communication links can be generated from a single set of connection and session definitions.
- Resource definitions are consistent, and you have greater control over the definition process.
- Resources can be installed either automatically at system initialization time or dynamically into an active system. BAS enables automatic resource installation through the following options:
 - **ALWAYS** Install resources every time the MAS connects after a CICS startup.
 - **COLDONLY** Install resources only when the MAS connects after an initial or cold start.
 - **NEVER** Never automatically install resources in this CICS system.
 - **WARMONLY** Install resources only when the MAS connects after a CICS warm start or emergency restart (AUTO).
- You can control whether specific resources can be automatically installed and thus have another level of resource management.
- RACF resource-specific security is provided to ensure that only authorized users can perform functions against BAS resource groups. ALTER access is required to install specified resources.

1.2.6 BAS and Topology Management

In addition to defining individual CICS resources, you can use BAS to define and manage the communication links between CICS systems. Rather than identifying each CICS system in a communication network to each of its partners, as RDO requires, you can specify general connectivity information to be used by all the CICS systems in a CICSplex.

For example, to define a communication link between two CICS systems using RDO, you need four definitions – two connections (one in each CICS) and two sessions (one in each CICS). Each connection and session definition is unique

to a given pair of CICS systems, and they cannot be reused for different communication links.

With BAS, you create one system link (SYSLINK) for each pair of CICS systems. The system link definition refers to one connection definition and one session definition that describe the nature of the link. These definitions can be used by any number of system links that share the same characteristics.

1.2.7 BAS Implementation Philosophy

The successful implementation of BAS is directly related to the planning process, and the fact that an intermediary stage, the *as is* stage, is used to ensure a controlled migration to a BAS environment.

The primary BAS concept is that resources will be managed at a business application level, as opposed to location level management.

With the *as is* model, the CSD definitions are migrated to the data repository through the DFHCSDUP EXTRACT batch procedure. This procedure extracts information from the CSD and generates equivalent resource definitions for input to the batched repository-update facility. The *as is* approach aligns the BAS resource description with the CSD group list, which in effect creates a CICSplex SM data repository version of the CSD. At this point, full BAS functionality is not available, but you have a platform that will enable a controlled migration to full BAS management.

To implement a complete move to the BAS environment, resource assignments are used to select resources of a particular type from a group and create an association with the appropriate CICS system. Because resource assignment is associated with a resource description, the resource description no longer functions like a group list but becomes a user-defined, logical set of resources, such as an application.

The above concepts are discussed in the chapters that follow.

1.2.8 BAS Prerequisites

The prerequisites for BAS are CICSplex SM 1.3 and CICS regions that support the EXEC CICS CREATE SPI command (CICS TS 1.1 and 1.2, CICS/ESA 4.1 with PTF UQ05148).

Chapter 2. Planning for Migration to BAS

In this chapter we discuss preliminary planning considerations for implementation of BAS.

2.1 Understanding Your Environment

To fully utilize the functions of CICSplex SM, you must understand why you have structured your current CICS environment as you have and how you want to optimize the performance of your CICS systems.

CICSplex SM enables you to control not only extremely complex environments, but also relatively simple CICS systems, whether they are running in a CICSplex, or as individual, self-contained systems.

The requirements that you may have previously adopted with regard to resource definitions, file allocations, TOR and AOR relationships, and administration will most definitely be streamlined when you use CICSplex SM BAS. The ability to associate resources with a given environment becomes a flexible solution without the restrictions and limitations of current resource control.

Your current environment may consist of numerous systems, built for specified regions within your geographical scope, or based on individual business units. Each of these CICS environments might be an individual CICSplex. This approach provides an isolated, but somewhat restrictive structure. CICSplex SM manages such environments and at the same time enables you to change the dynamics of your environment, to branch into a more open system structure, and to maximize and optimize data and resource usage.

Basing your environment on one CICSplex means that there are no system barriers between one group of the enterprise CICS systems and another. A single CICSplex enables you to maximize the opportunity to share and reuse BAS definitions.

The decisions relating to your enterprise management philosophy will have been based on business unit functions, geographical considerations, and business application guidelines. Evaluation of the reasons for your current enterprise design may still prove to be the most effective structure for your business requirements, but CICSplex SM BAS enables you to rethink your current structure and shift the focus to global application management in line with your business goals rather than CICS region management.

2.2 Understanding Your Applications

Although a relatively simple concept, understanding your applications is something that can become slightly clouded during the evolution of your CICS environments. Program names, mapset names, and transaction definitions that were once application specific can become more generic, and clearly defined relationships between application functions and resources can become a little more difficult to conceptualize.

Using a simplistic example, let us assume that Group(PAYAPPN) would identify all resources required by the payroll application. Unfortunately, resources

related to the payroll application are most likely also included in another group or groups. Which entry, from which group is being used? Are these definitions in a number of group lists? BAS allows numerous versions of a definition but does not allow a duplicate entry. This is where it is important to understand how your application is running and what resources it is using. If the definitions are grouped in an application-specific way, their inclusion into the CICSplex SM BAS-managed environment will be simple.

A business application can be any set of resources that represent a meaningful entity to the users in an enterprise, and these resources can exist in any CICS system in the CICSplex. If the resources are defined to CICSplex SM, BAS can locate them and manage them regardless of the platform or release of CICS in which they are defined. (It should be noted that the concept of business application grouping is independent of CICSplex SM resource installation capabilities.)

Understanding your applications, and all the resources required by each application, will enable a smooth transition to the CICSplex SM BAS-managed system. The migration process, when performed at an application level (which is the preferred method), allows for a controlled and managed migration.

Two IBM utilities can assist you with the planning and understanding of your individual application resource flow:

- CICS Interdependencies Utility

This utility is available as a Category 1 SupportPac CS17. SupportPacs in this group provide material to be used by IBM System Specialists as the basis for fee-earning services. Customers interested in obtaining services based on this SupportPac should contact their IBM representative or make an inquiry by e-mail to innovate@uk.ibm.com. For additional information about CICS SupportPacs refer to the following URL:

<http://www.software.ibm.com/ts/cics/txppacs>

- CICS Transaction Affinities Utility

This utility is an exclusive element of CICS TS for OS/390 and is therefore supplied with this product.

2.2.1 CICS Interdependencies Utility

As CICS systems and the application environments evolve, many installations find that they can no longer fully describe their applications in terms of their dependencies and consequently cannot describe the interdependencies that the applications have.

The existence of many unknown dependencies and interdependencies can act as a barrier to application development, product migration, and systems planning and operations. The CICS Interdependencies Utility (CIU) describes applications in terms of their dependencies by intercepting the EXEC CICS commands that they issue.

The CIU is designed to detect potential dependencies between transactions and resources, to enable a user to understand where applications have common dependencies.

The CIU has three main components:

- Scanner
 - A batch program that scans the load module libraries and reports instances of EXEC CICS commands that cause dependencies. The scanner operation is independent of the language in which the scanned program was written and the release of CICS under which the program was translated.
- Detector
 - A run-time CICS utility that records the occurrence of CICS commands that cause dependencies as they occur within a working CICS region. The detector runs on CICS 2.1.2, CICS 3.x, and CICS 4.1, but not on CICS TS 1.1 or CICS TS 1.2.
- Reporter
 - A batch program that formats and prints the data captured by the detector

The CIU determines the dependencies that apply to a single CICS region; that is, a single, pure AOR, or a single, combined TOR and AOR. To ensure that you detect as many potential dependencies as possible, use the CIU against all parts of your workload.

Table 1 identifies the commands detected by the CIU.

ALLOCATE	READNEXT FILE
CONNECT PROCESS	READPREV FILE
CONVERSE CONVID/SESSION	RECEIVE MAP
DELETE FILE	RESETBR FILE
DELETEQ TD	RETURN TRANSID
DELETEQ TS	REWRITE FILE
ENDBR FILE	SEND MAP
INQUIRE/SET FILE	SEND CONVID/SESSION
INQUIRE/SET PROGRAM	START
INQUIRE/SET TRANSACTION	STARTBR FILE
LINK	UNLOCK FILE
LOAD	WRITE FILE
READ FILE	WRITEQ TD
READQ TD	WRITEQ TS
READ TS	XCTL

When an EXEC CICS command is translated and compiled, the result is an encoded parameter list to be used with the call statement. The first parameter in this list is a constant known as the CICS *argument zero*. The first two bytes of this constant identify the command; for example, X'0A04' identifies a READQ TS command. Argument zero is presented to an application program in the EIBFN field of its EXEC Interface Block (EIB). The CIU scanner component detects the use of EXEC CICS commands as identified in Table 1.

The report produced by the scanner only indicates that potential dependencies may exist, as it only identifies the programs that issue the commands. The scanner does not obtain dynamic information about the transactions that use the

program, or the related resources. These details can be identified by using the detector component of the CIU. Using the reports generated by the scanner and the reports generated by the detector, you can make valid judgments comparing the static and dynamic reports.

Figure 1 is an example of the CIU summary listing that is produced when the CIU scans a load module library. The CIU Scanner Summary procedure not only produces a summary listing of the specified library but creates a data set that can be used as input to the CIU Scanner Detail report shown in Figure 2 on page 11. The Detail report identifies the EXEC CICS commands located in each load module within the specified data set. The identified statements indicate that possible dependencies could exist.

```

***** TOP OF DATA *****
CICS INTERDEPENDENCIES UTILITY Version 1.03
LOAD MODULE SCANNER - SUMMARY LISTING OF PROD.COBOLOAD

Module      Module      Module      Dependency
Name        Length      Language    Statements
-----
DSW0E1VV    0000C590    COBOL II    13
DSW0X1VV    0000C4D8    COBOL II    12
DSWSUBLX    000047A8    COBOL II    41
DSWSUBLZ    000047E0    COBOL II    41
DSWVSMXLX   0000C4D8    COBOL II    12
DSWVSMMLZ   0000C590    COBOL II    13
CICS INTERDEPENDENCIES UTILITY Version 1.03
LOAD MODULE SCANNER - SUMMARY LISTING OF PROD.COBOLOAD

                                LOAD LIBRARY STATISTICS
=====
Total modules in library          =      6
Total modules scanned             =      6
Total CICS modules/tables (not scanned) =      0
Total modules in error (not scanned) =      0
Total modules containing possible dependency cmds =      6
  Total ASSEMBLER modules         =      0
  Total C/370 modules              =      0
  Total COBOL modules              =      0
  Total COBOL II modules           =      6
  Total PL/I modules               =      0

```

Figure 1. CICS Interdependencies Utility Scan: Summary

CICS INTERDEPENDENCIES UTILITY Version 1.03
 LOAD MODULE SCANNER - DETAILED LISTING OF PROD.COBO.LOAD

Module Name - DSWOE1VV / Load Module Length		Module Entry Point
0000C590		00000020
Offset	Storage Content (HEX)	EDF DEBUG Possible Command
000002A8	1802C0000700000000040900000020	04145 RECEIVE MAP
000002ED	1804E0000700000000046204000020	03897 SEND MAP
00000349	1804E000070000000004E204000020	02861 SEND MAP
00000377	1804E000070000000004E282000020	02857 SEND MAP
0000038E	1804E000070000000004E204000020	02847 SEND MAP
000003BC	1802C0000700000000040900000020	02409 RECEIVE MAP
00000417	0E08E0000700001000	03939 RETURN TRANSID
00000428	0E0880000700001000	03926 RETURN TRANSID
0000045B	0A02E8000700004500	03093 WRITEQ TS
0000046C	1008A0000700004000	02829 START
0000047D	0802E0000700004000	02822 WRITEQ TD
0000048E	0804E0000700008000	02389 READQ TD
0000049F	0802E0000700004000	02357 WRITEQ TD
Total possible dependency cmds =		13

Figure 2. CICS Interdependencies Utility Scan: Detail

2.2.2 CICS Transaction Affinities Utility

CICS transactions use many different techniques to pass data from and to one another. Some techniques require that the transactions exchanging data execute in the same CICS region and therefore impose restrictions on the dynamic routing of transactions. If transactions exchange data in ways that impose such restrictions, there is said to be an *affinity* between them.

There are two categories of affinity: intertransaction and transaction-system. The intertransaction affinity is an affinity between two or more CICS transactions. It is caused by transactions using techniques to pass information or to synchronize activity between each other, such that they must execute in the same CICS region. The transaction-system affinity is an affinity between a transaction and a specific CICS region. Transactions with an affinity to a specific CICS region are not eligible for dynamic transaction routing.

In a dynamic transaction routing environment, to route transactions effectively, your dynamic transaction routing program must take into account transaction affinity. Where possible, avoid creating application programs that cause affinity. However, for existing applications, it is important that you determine whether they are affected by transaction affinity before using them in a dynamic transaction routing environment. The CICS Transaction Affinities Utility is designed to help you with this task.

The CICS Transaction Affinities Utility has four main components:

- Scanner
 - A batch program that scans the load module libraries and reports instances of EXEC CICS commands that can cause affinities. The scanner operation is independent of the language in which the scanned program was written and the release of CICS under which the program was translated.

- Detector
 - A run-time CICS utility that records the occurrence of CICS transaction affinities in a CICS system
- Reporter
 - A batch program that formats and prints the data captured by the detector
- Builder
 - A batch utility that you can run against a set of files containing the basic affinity transaction group definitions as created by the reporter. The builder produces a file containing combined affinity transaction group definitions suitable for input to CICSplex SM.

Table 2 identifies the commands detected by the CICS Transaction Affinities Utility.

<i>Table 2. Commands Detected by CICS Transaction Affinities Utility</i>	
ADDRESS CWA	INQUIRE
CANCEL	LOAD
COLLECT STATISTICS	PERFORM
CREATE	POST
DELAY	READQ TS
DELETEQ TS	RELEASE
DEQ	RESYNC
DISABLE PROGRAM	RETRIEVE WAIT
DISCARD	SET
ENABLE PROGRAM	START
ENQ	WAITCICS
EXTRACT EXIT	WAIT EVENT
FREEMAIN	WAIT EXTERNAL
GETMAIN SHARED	WRITEQ TS

The CICS Transaction Affinities Utility report has two main purposes: to help you understand the affinities present in the CICS region concerned, and to help you modify the affinity transaction group definitions before they are input to the builder, if such modifications are required.

You will want to investigate whether any application changes will enable you to reduce the affinity requirements. If you understand the affinities present in your CICS environment, you can determine which affinities are most pervasive. If you decide it is worth changing your application programs, it is generally more cost effective to remove the most pervasive affinities, as they are the most restrictive with regard to optimal dynamic transaction routing. Figure 3 on page 13 shows an example of a summary report produced by the utility.

```

CICS TRANSACTION AFFINITIES UTILITY
LOAD MODULE SCANNER - SUMMARY LISTING OF PROD.COBO.LOAD

Module      Module      Module      Affinity      MVS      Comment
Name        Length      Language    Statements    POSTs
-----
DSW0E1VV   0000C590   COBOL II    3             0        Possible affinity cmd
DSW0X1VV   0000C4D8   COBOL II    2             0        Possible affinity cmd
DSWSUBLX   000047A8                   0           0
DSWSUBLZ   000047E0                   0           0
DSWVXMLX   0000C4D8   COBOL II    2             0        Possible affinity cmd
DSWVXMLZ   0000C590   COBOL II    3             0        Possible affinity cmd
CICS TRANSACTION AFFINITIES UTILITY
LOAD MODULE SCANNER - SUMMARY LISTING OF PROD.COBO.LOAD

                                LOAD LIBRARY STATISTICS
=====
Total modules in library                = 6
Total modules scanned                   = 6
Total CICS modules/tables (not scanned) = 0
Total modules in error (not scanned)    = 0
Total modules containing possible MVS POSTs = 0
Total modules containing possible Affinity commands = 4
  Total ASSEMBLER modules                = 0
  Total C/370 modules                    = 0
  Total COBOL modules                   = 0
  Total COBOL II modules                 = 4
  Total PL/I modules                     = 0

```

Figure 3. CICS Transaction Affinities Utility Scan: Summary

Figure 4 shows an example of a detailed report produced by the utility.

```

CICS TRANSACTION AFFINITIES UTILITY
LOAD MODULE SCANNER - DETAILED LISTING OF PROD.COBO.LOAD

Module Name - DSW0E1VV / Load Module Length - 0000C590
Module Entry Point - 00000020
Offset      Storage Content (HEX)      EDF DEBUG Possible Afinity
           Command
-----
0000028A   0202800007020000000000.          02346  ADDRESS CWA  Trans
0000045B   0A02E8000700004500                03093  WRITEQ TS   Trans
0000046C   1008A0000700004000                02829  START       Trans
Total possible Affinity commands = 3
Total possible MVS POSTs         = 0

```

Figure 4. CICS Transaction Affinities Utility Scan: Detail

2.3 Cleaning Up Obsolete CSD Entries

Migration to a CICSplex SM BAS-managed enterprise is dependent on the data supplied from the current CSD-based CICS environments. Now is the time to clean up the CSD and the accumulated definitions relating to both current and not so current applications. The propagation of obsolete definitions from your current environment to the new BAS-managed environment would be counterproductive and would make the migration process imprecise and not tightly controlled.

The end result of a successful migration of all application definitions is a skeleton CSD file that contains only the DFHLIST definitions and a list containing a group of CICSplex SM-supplied definitions for a MAS. As each application is successfully migrated to BAS, you should delete its definitions from the related CSD files. The cleanup of the CSD is *your* responsibility.

If you do not want to delete resource definitions from the CSD for a period of time after migrating to BAS, ensure that the group lists relating to the migrated resources are removed from the GRPLIST system initialization table (SIT) parameter. If you fail to remove these entries, during an initial or cold start the resources will be installed from the CSD through the GRPLIST and then deleted and reinstalled by CICSplex SM, thereby increasing CICS startup time.

2.4 Regression and Fallback Planning

When migration from the CSD to the BAS data repository has completed and the CSD cleanup process has taken place, you must understand the process required to reinstate your CSD-based system, should the need arise. Although this regression and fallback scenario is highly unlikely, an option to reinstate the deleted CSD definitions exists. You could use a premigration backup of your CSD to do this, but you would lose all resource updates performed since the BAS environment was implemented, as any new definitions would only reside in the data repository, not the CSD.

The most reliable way to repopulate your CSD and ensure that your resource definitions are current is to extract the BAS definitions from the data repository and use that data as input to the DFHCSDUP utility. The DFHCSDUP utility will reinstall these resource definitions into the CSD.

The data repository definitions are formatted differently from those of the CSD, and a program to reformat the BAS data repository definitions into a format acceptable as input to the DFHCSDUP utility is required.

For the procedures and sample code to perform the fallback to a CSD-based environment, see Chapter 7, "Housekeeping" on page 127.

Chapter 3. BAS Terminology

In this chapter we introduce BAS terminology, discuss BAS commands and views and follow some common resource definition actions.

3.1 BAS Resource Management

CICSplex SM must know about your CICS resources in order to manage them. Defining your resources to CICSplex SM is similar to using RDO to define them to CICS; you specify the attributes that describe the resource in one or more input panels. However, in your CICSplex SM environment it is not necessary to define manually every instance of every resource. With CICSplex SM you can use templates for defining a large number of resources.

You can create a resource definition that describes many similar, if not identical, resources by specifying those attributes that are common to all resources. CICSplex SM allows the specification of attributes that apply to remote instances of a resource along with the local attributes. CICSplex SM uses the appropriate subset of attributes as it assigns the local and remote resources to various CICS systems.

3.2 Introduction to BAS Function

All CICS users are familiar with CICS RDO model. There is a SIT for each CICS region, having one or more GRPLIST parameters that specify a set of resources to be installed through associated RDO groups.

The equivalent mechanism in CICSplex SM (the *as is* model) is based on a CICS region being associated with a resource description (RESDESC), which in turn is associated with resource groups (RESGROUPs) associated with resource definitions.

A more advanced BAS model (the *full BAS* model) uses resource assignments (RASGNDEFs) that identify resources of a given type to be assigned to different CICS systems as either local or remote.

3.2.1 Resource Groups

A resource group (RESGROUP) can be any set of definitions that you want to manage as a unit. The resources in a group usually have something in common. They might be logically related by their use in a given application or communications network or geographically related by their use at a given site.

A resource group can contain definitions of all types of resources (for example, connections, files, and journals). There is no real limit to the number of combinations of resource definitions that can make up a group. However, only one version of a given resource can be included in a resource group at one time. You can maintain multiple versions of a resource definition in different resource groups, but not in the same group.

3.2.2 Resource Descriptions

A resource description (REDESC) represents a set of logically related resources. You can associate whole resource groups with a resource description to create a larger set of resources that can be managed more efficiently.

A resource description represents the largest set of resources that CICSplex SM can manage as a unit. It might consist of all resources in several resource groups or resource assignments (much like a CSD group list) or the set of resources that make up a given application on various CICS systems.

The set of resources that can be identified in a resource description can be:

- Treated as a logical scope (such as an application) for use in subsequent CICSplex SM requests
- Automatically or dynamically installed in systems running CICS/ESA 4.1 or later

Figure 5 compares RDO and BAS resource definition structures when the *as is* model is used.

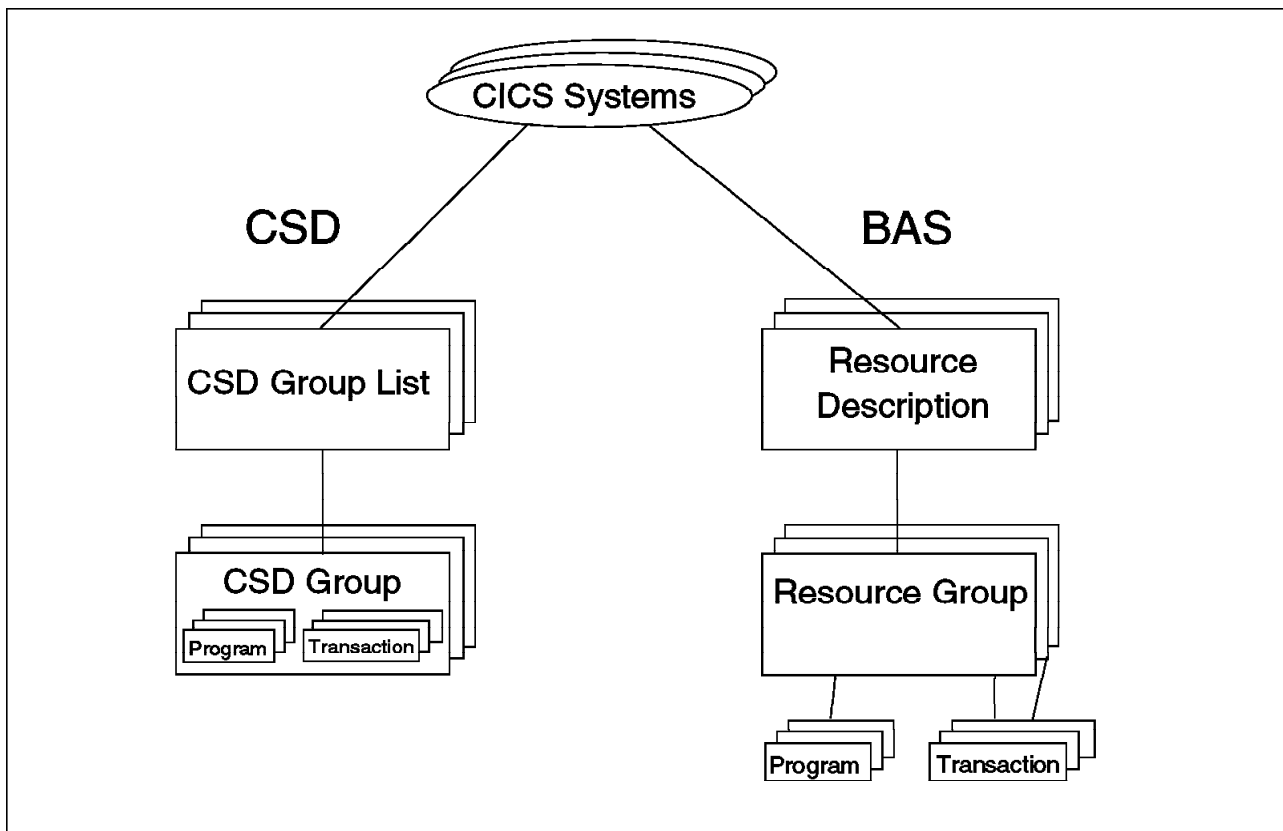


Figure 5. Comparison of RDO and BAS Resource Definitions: As Is Model

3.2.3 Resource Assignments

A resource assignment (RASGNDEF) identifies resources of a given type that are to be assigned to one or more CICS systems as either local or remote. Rather than representing a whole set of resources, as resource groups and descriptions do, the purpose of a resource assignment is to selectively process the resource set.

With a single resource assignment, you can:

- Select specific resources from a resource group.
- Modify resource attributes for specific uses in specific CICS systems.
- Identify the CICS systems where local and remote instances of resources should be assigned.

The resources selected by a RASGNDEF cannot be managed independently. They must be members of a RESGROUP, and the RASGNDEF must be associated with at least one RESDESC.

The utilization of resource assignments moves the management of your CICSplex environment away from the *as is* philosophy, where the RDO group and group list are effectively replaced by RESGROUP and RESDESC, to full BAS functionality. Figure 6 shows the resource definition structure when the *full BAS* model is used.

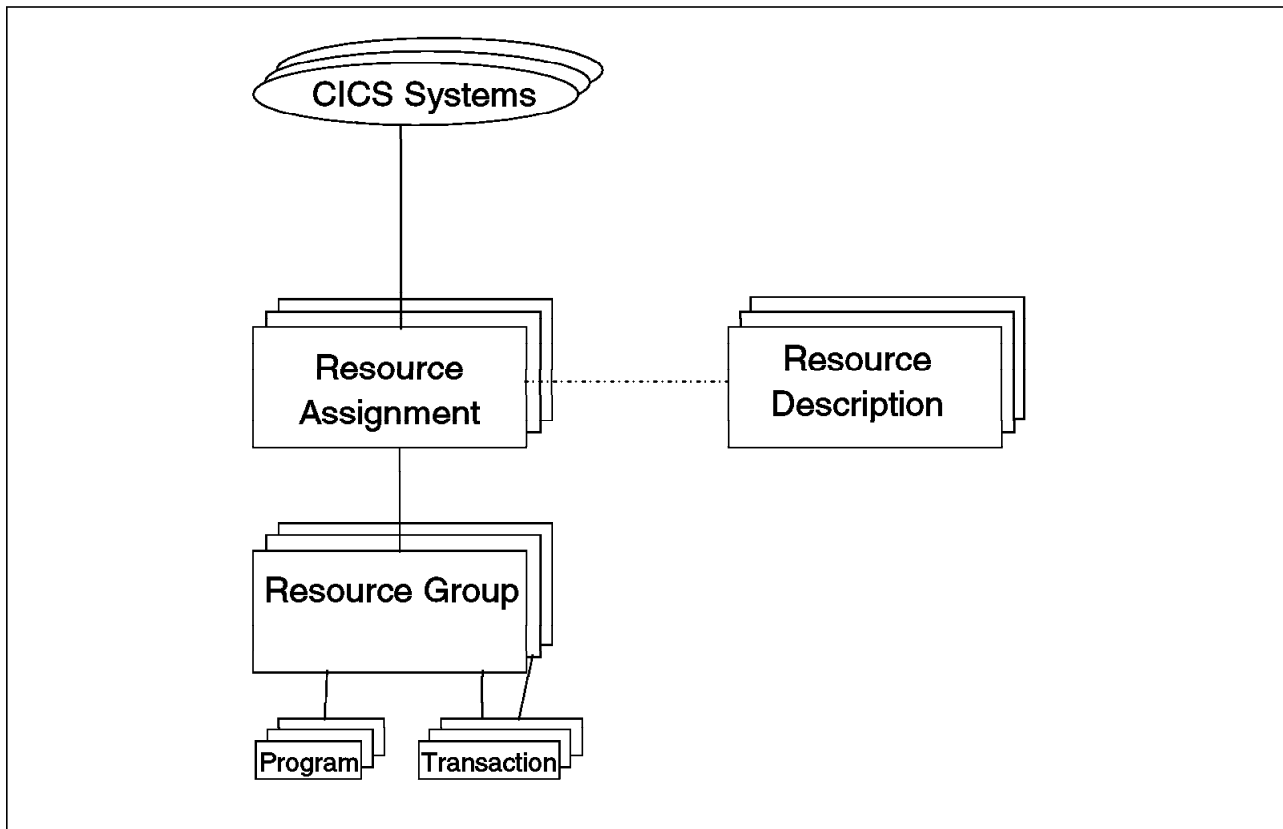


Figure 6. Resource Definition Structure: Full BAS Model

3.3 Managing Your CICS Resources

With BAS, the most important decision you have to make is how to manage the sets of resources you create:

- By resource description alone
- By resource assignments in conjunction with resource descriptions

You can control CICS resources, using either of the above approaches, and the decision you make is primarily based on the precision with which you want to manage resources in your CICSplex. Resource descriptions alone provide the simplest approach to managing resources, but using resource assignment function provides access to the full range of BAS features.

3.3.1 Controlling Resources by Resource Description (RESEDESC)

The simplest way to manage sets of resources is to associate resource groups directly with a resource description. To do this you would:

1. Create resource groups and add resource definitions to them.
2. Create a resource description (or identify an existing one) with which you want to associate the resource groups.
3. Use the ResGroup Scope field on the resource description to identify a CICS system or CICS system group where all resources in the groups should be assigned.
4. Use the ADD action command from the RESGROUP view to associate one or more resource groups with the description. This creates a resource-group-in-description link record (RESINDSC).

The result is that all of the resources in the resource groups are assigned to the specified CICS systems exactly as they were defined to CICSplex SM. This is similar to the way in which RDO processes the definitions in a CSD group list.

As with RDO, this simple approach to managing your resources requires separate resource definitions for each element of a resource. Therefore, assigning a resource that is local to one CICS system and remote to another would require two resource definitions, and the resources represented by a resource description are more likely to be specifically related to the CICS system where they reside than by any logical functions, such as an application.

This approach is sufficient to enable BAS to function in a way that is similar to RDO. However, it should be viewed as an interim stage, on the way to full CICS resource management using resource assignments.

3.4 Controlling Resources by Resource Assignment (RASGNDEF)

Resource assignments are a departure from the basic CICSplex SM object model of definitions, groups, and descriptions. RASGNDEFs add a significant degree of flexibility and control to the resource definition deployment process and increase the precision with which you can manage the resources in your CICSplex.

Once you have gathered resource definitions into resource groups, you can use resource assignments to:

- Control resources of a given type in a given group. Each resource assignment applies to one type of resource (for example, files) in one resource group.
- Identify resources as either local or remote and assign them to various CICS systems with a single resource definition.
- Process selected resources from a group by specifying a filter expression.
- Modify resource attributes for a particular use by specifying override expressions.

To take full advantage of BAS, associate your resource groups with resource assignments, and your assignments with a resource description.

3.4.1 Validation of Resource Definitions

CICSplex SM performs many of the same resource definition checks as RDO. However, CICSplex SM attempts to validate whole sets of resources associated with the CICS systems in your CICSplex:

Individual attributes of a resource

Each attribute of each resource definition is validated independently according to the CICS RDO guidelines for valid values.

Interdependent resource attributes

Attributes of a resource definition that may depend on each other, as per CICS RDO guidelines. CICSplex SM reports attribute combination errors during resource definition. These errors must be resolved before definition creation and data repository update.

Release-specific resource attributes

CICSplex SM validates all release-specific attributes.

Resource consistency checking

Maintaining resource consistency in all managed systems in a CICSplex is an integral part of CICSplex SM functionality.

Whenever CICSplex SM is instructed to perform the following functions, it checks the requested changes against the existing resource set for each affected CICS system:

- Add or update a resource in a definition group
- Add a resource group in a description
- Update a resource description
- Update a resource assignment
- Add or update a resource assignment in a description
- Add a CICS system to a CICS system group

CICSplex SM flags a resource set as inconsistent if a resource being added or updated is in conflict with a resource definition that is already associated with the CICS system.

3.5 Introduction to BAS Commands

CICSplex SM BAS does not use the same primary commands that you have been using with RDO. There are some completely new commands to facilitate CICSplex SM BAS functions, and the RDO commands have been replaced by CICSplex SM BAS equivalent commands. Definition attributes are input in a similar way to RDO, and the attributes available in the CICSplex SM resource definitions are the same as CICS RDO resource definitions.

The CICSplex SM ISPF interface is used to perform BAS tasks, and BAS *views* display information about definitions that exist in the CMAS directory.

Figure 7 on page 21 shows the first panel displayed when you invoke the CICSplex SM EUI from ISPF. You have to select Option 2, CPSM, to get to the main menu, but before you can do that you have to correctly specify values for the Context and Scope fields.

3.5.1 Setting the Context

The context is a named part of the CICSplex environment that is currently being acted upon by CICSplex SM.

The information that appears in a view is based on the context currently in effect for the window in which the view is displayed. For configuration tasks, the context is a CMAS; for BAS administration and resource definition tasks, the context must be a CICSplex.

3.5.2 Setting the Scope

The scope is a named part of the CICSplex SM environment that qualifies the context of a CICSplex SM request.

The Scope field identifies a CICS system, CICS system group, the CICSplex, or a BAS-application-related logical scope and ensures that BAS resource administrative functions affect only the systems that are related to the specified scope.

For example, your CICSplex might contain three BAS-maintained environments, payroll (PAYSYS), accounts (ACCTSYS), and audits (AUDSYS). You are about to define a new application component of the payroll system, and you only want the changes to be implemented in the PAYSYS environment. You set the scope that is defined as part of the resource description (RESDESC) to PAYSYS, to ensure that the changes are propagated only across the payroll environment. Alternatively, you may want to install a new transaction into all CICS systems within the CICSplex. In this case, setting the scope to identify the CICSplex ensures that all changes are propagated throughout the CICSplex.

Scopes are discussed in detail in Chapter 6, “Change Management” on page 97.

The panel displayed in Figure 7 on page 21 is used to set the scope and the context for the actions you want to perform.

```

-----CICSplex System Manager-----
OPTION  ==>

0 PROFILE      - User Session Parameters
1 PLEXMGR      - List of Service Points
2 CPSM         - CICSplex SM

          Default Criteria for CPSM:

Context          ==> SCSPLEX
Scope            ==> *
Warning Record Count ==> 0          0 for no checking
Require Set      ==> NO            YES, NO
-----

```

Figure 7. CICSplex System Manager Main Menu

If you do not remember the names of your service points, Select Option 1, PLEXMGR, to display a list (see Figure 8) that can assist you in identifying the relevant values to be used in the context field.

The value to specify in the Context field, in this case, would be SCSPLEX, the CICSplex Service Point. Now you can use Option 2, CPSM, to display the main MENU view (see Figure 9 on page 22).

Note: When you select option 0, PROFILE, or option 1, PLEXMGR, on the panel displayed in Figure 7, you can ignore any context and scope values because they have no effect.

```

22JUN1998 12:44:17 ----- INFORMATION DISPLAY -----
COMMAND  ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =PLEXOVER=====SC61=====*=====22JUN1998==12:44:17====PLEXMGR=====
C Context  Product  Description          Status  Server  System
-----
SCSCPCA1  CPSM      CMAS Service Point   Active  SCSCPCA1 SC61
SCSCPCB1  CPSM      CMAS Service Point   Active  SCSCPCB1 SC62
SCSPLEX   CPSM      CICSplex Service Point Active  SCSCPC** SC6*****
SC61      PLEXMGR   Target Manager       Active  PLEXMGR  SC61
SC62      PLEXMGR   Target Manager       Active  PLEXMGR  SC62
-----

```

Figure 8. PLEXMGR View: List of Service Points

3.5.3 Displaying a View

To display a CICSplex SM view from the MENU view (Figure 9 on page 22) do one of the following:

- Type an S (for Select) next to the view name and press Enter.
- Place the cursor anywhere on the line containing the view name and description and press Enter.
- Type the view name on the COMMAND line and press Enter.

You can use the MENU + command from the COMMAND line to display a list of all CICSplex SM views. For a complete list of these views, see Appendix A, "MENU + CICSplex SM Command" on page 159.

```

22JUN1998 12:59:57 ----- INFORMATION DISPLAY -----
COMMAND ===>                                     SCROLL ===>
CURR WIN ===> 1          ALT WIN ===>
W1 =MENU=====SCSPLEX==*=====22JUN1998==12:59:57====CPSM=====
CMD View Name          Description
-----
ANALYSIS  Real Time Analysis Operations Views
CONFIG    CMAS Configuration Operations Views
MONITOR   Monitoring Views
OPERATE   Operations Views
TOPOLOGY  Topology Operations Views
WORKLOAD  Workload Operations Views
=====
ADMSAM    RTA System Availability Monitoring Administration Views
ADMMRM    RTA MAS Resource Monitoring Administration Views
ADMAMP    RTA Analysis Point Monitoring Administration Views
ADMCONFG  CMAS Configuration Administration Views
ADMMON    Monitor Administration Views
ADMTOPOL  Topology Administration Views
ADMWLM    Workload Manager Administration Views
S  ADMBAS  Business Application Services Administration Views
ADMRES    Business Application Services Resource Views

```

Figure 9. CICSplex SM: Menu

The MENU command has parameters that can be used to qualify the list of views from which you can select. For the BAS views that we discuss in this chapter, you can use the following parameters with the MENU command:

- **ADMBAS** for a menu of the BAS administration views (see Figure 10)
- **ADMRES** for a menu of the BAS resource views (see Figure 11 on page 23)

```

22JUN1998 13:02:12 ----- INFORMATION DISPLAY -----
COMMAND ===>                                     SCROLL ===>
CURR WIN ===> 1          ALT WIN ===>
W1 =MENU=====SCSPLEX==*=====22JUN1998==13:02:12====CPSM=====
CMD View Name          Description
-----
ADMBAS    Business Application Services Administration Views
RESDESC   Resource Descriptions
RASINDSC  Resource Assignments in Description
RESINDSC  Resource Groups in Description
RASGNDEF  Resource Assignment
RDSCPROC  Resource Description Process
SYSRES    CICS System Resources
SYSLINK   CICS System Links
RASPROC   Resource Assignment Process
RESGROUP  Resource Groups
RESINGRP  Resources in Resource Group
-----

```

Figure 10. ADMBAS: Business Application Services Administration Views

```

22JUN1998 13:05:16 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
W1 =MENU=====SCSPLEX=*=====22JUN1998==13:05:16====CPSM=====
CMD View Name           Description
-----
ADMRES      Business Application Services Resource Views
CONNDEF     Connection Definitions
DB2CDEF     DB2 Connection Definitions
DB2EDEF     DB2 Entry Definitions
DB2TDEF     DB2 Transaction Definitions
FILEDEF     File Definitions
FSEGDEF     File Key Segment Definitions
JRNLEDEF    Journal Definitions
JRNMDEF     Journal Model Definitions
LSRDEF      LSR Pool Definitions
MAPDEF      Map Set Definitions
PARTDEF     Partner Definitions
PRTNDEF     Partition Set Definitions
PROFDEF     Profile Definitions
PROGDEF     Program Definitions
SESSDEF     Session Definitions
TDQDEF      Transient Data Queue Definitions
TERMDEF     Terminal Definitions
TRANDEF     Transaction Definitions
TRNCLDEF    Transaction Class Definitions
TYPTMDEF    Typeterm Definitions
-----

```

Figure 11. ADMRES: Business Application Services Resource Views

To display a transaction definition view, type *S* on the TRANDEF line (Figure 12 on page 24). You get the screen shown in Figure 13 on page 24.

```

22JUN1998 17:37:40 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==>
CURR WIN ==> 1 ALT WIN ==>
W1 =MENU=====SCSPLEX==*=====22JUN1998==17:37:40====CPSM=====
CMD View Name Description
-----
ADMRES Business Application Services Resource Views
CONNDEF Connection Definitions
DB2CDEF DB2 Connection Definitions
DB2EDEF DB2 Entry Definitions
DB2TDEF DB2 Transaction Definitions
FILEDEF File Definitions
FSEGDEF File Key Segment Definitions
JRNLEDEF Journal Definitions
JRNMDEF Journal Model Definitions
LSRDEF LSR Pool Definitions
MAPDEF Map Set Definitions
PARTDEF Partner Definitions
PRTNDEF Partition Set Definitions
PROFDEF Profile Definitions
PROGDEF Program Definitions
SESSDEF Session Definitions
TDQDEF Transient Data Queue Definitions
TERMDEF Terminal Definitions
S TRANDEF Transaction Definitions
TRNCLDEF Transaction Class Definitions
TYPTMDEF Typeterm Definitions

```

Figure 12. Selecting a Transaction Definition (TRANDEF) View

```

22JUN1998 17:43:54 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==>
CURR WIN ==> 1 ALT WIN ==>
W1 =TRANDEF=====SCSPLEX==*=====22JUN1998==17:43:54====CPSM=====
CMD Name Ver Created Changed Description
-----
HR1 1 6/17/98 11:39 6/17/98 11:39
HR2 1 6/17/98 11:39 6/17/98 11:39

```

Figure 13. Transaction Definition (TRANDEF) View

The Transaction Definition view displays a list of defined transactions. To display the transaction definition, issue the BROWse command in the CMD field next to the desired transaction (Figure 14).

```

22JUN1998 17:43:54 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==>
CURR WIN ==> 1 ALT WIN ==>
W1 =TRANDEF=====SCSPLEX==*=====22JUN1998==17:43:54====CPSM=====
CMD Name Ver Created Changed Description
-----
bro HR1 1 6/17/98 11:39 6/17/98 11:39
HR2 1 6/17/98 11:39 6/17/98 11:39

```

Figure 14. Transaction Definition View: BROWse Command

Issuing the BROWse command as shown in Figure 14 presents the transaction definition views related to transaction HR1. Scroll through these views to see

the resource definition attributes with which you are familiar (see Figure 15 on page 25, Figure 16 on page 25, Figure 17 on page 26, and Figure 18 on page 26).

```

----- Browse Transaction Definition for SCSPLEX Page 1 -----
COMMAND ==>
Name           HR1           Version      1
Description
Created        6/17/98  11:39      Changed     6/17/98  11:39
User Data

Program        DSWHR1VV   Name program to process transaction
Twasize        0          Transaction work area size (0-32767, blank)
Profile        DFHCICST   Profile definition name
Partitionset   Application partition set (name, KEEP, OWN)
Status         ENABLED    Transaction status (ENABLED, DISABLED)
Taskdataloc    BELOW     Task storage location (BELOW, ANY)
Taskdatakey    USER     Task storage key (USER, CICS)
Storageclear   NO        Clear task life-time storage (YES, NO)
Runaway        SYSTEM    Max tasktime (SYSTEM, 0-2700000, blank)
Shutdown       DISABLED  Status during shutdown (DISABLED, ENABLED)
Isolate        YES       Isolate user storage (YES, NO)

Press UP or DOWN to view other screens.
Type END or CANCEL to cancel browse.

```

Figure 15. Browse Transaction Definition for SCSPLEX: Page 1

```

----- Browse Transaction Definition for SCSPLEX Page 2 -----
COMMAND ==>
Name           HR1           Version      1

Dynamic        YES          Dynamic route to remote region (NO, YES)
Remotename     HR1          Transaction name in remote system
Remote Sysid   SYSIDENT for Remote System
Trprof         DFHCICSS    Transaction routing profile name
Localq         N/A         Queueing on local system (NO, YES, N/A)
Priority        1           Transaction priority (0-255, blank)
Tranclass      DFHTCLOO   Transaction class (DFHTCLOO, name)
Alias          Alias name for transaction
Taskreq        Transactions initiation
Xtrandid       Alternate name for initiating transaction
Ressec         NO          Resource security checking (NO, YES)
Cmdsec         NO          Sec checking for sys prog cmds (NO, YES)
Action         BACKOUT     Recovery action (BACKOUT, COMMIT)
Wait           YES         In-doubt unit of work wait (YES, NO)
Waittime       0 , 0 , 0  In-doubt unit of work wait time (blank,
                                     DD (0-93), HH (0-23), MM (0-59))

Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel browse.

```

Figure 16. Browse Transaction Definition for SCSPLEX: Page 2

```

----- Browse Transaction Definition for SCSPLEX Page 3 -----
COMMAND ==>
Name           HR1      Version  1

Dtimeout       10      Apply deadlock time-out (NO, 1-6800, blank)
Indoubt        BACKOUT  Abend action (BACKOUT, COMMIT, WAIT)
Restart        NO      Transaction restart facility (NO, YES)
Spurge         YES     System purgeable (NO, YES)
Tpurge         NO      Purged for terminal error (NO, YES)
Dump           YES     Produce transaction dump (YES, NO)
Trace          YES     Trace transaction activity (YES, NO)
Confdata       NO      User data trace suppression (YES, NO)
TPname         TPname   Transaction name for APPC partner

XTPname        XTPname  Alternative TPname

Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel browse.

```

Figure 17. Browse Transaction Definition for SCSPLEX: Page 3

```

----- Browse Transaction Definition for SCSPLEX Page 4 -----
COMMAND ==>
Name           HR1      Version  1

Brexid         Brexid   Name of bridge exit

Tclass         Tclass   Task class (NO, 1-10, blank)
PrimedSize     PrimedSize Primed storage allocation size (0-65520,blank)
Extsec         N/A     External security manager used (NO, YES,
Transec        Transec   Transaction security value (1-64, blank)
Rs1            Rs1     Resource security value (0-24, PUBLIC, blank)

Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel browse.

```

Figure 18. Browse Transaction Definition for SCSPLEX: Page 4

As an alternative to using the BROWse command, you could issue the CREate command, which would enable you to use the HR1 transaction definition as a template (see Figure 19 on page 27 and Figure 20 on page 27), or you could issue the CREate command from the COMMAND line, which would enable you to define the transaction with only the CICS defaults set in the TRANDEF view (see Figure 21 on page 27 and Figure 22 on page 28). You can execute any of the resource definition actions from either the COMMAND line or the CMD field.

```

22JUN1998 17:43:54 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==>
CURR WIN ==> 1 ALT WIN ==>
W1 =TRANDEF=====SCSPLEX==*=====22JUN1998==17:43:54====CPSM=====
CMD Name Ver Created Changed Description
-----
cre HR1 1 6/17/98 11:39 6/17/98 11:39
HR2 1 6/17/98 11:39 6/17/98 11:39

```

Figure 19. Transaction Definition View CREate Action: Using HR1

```

----- Create Transaction Definition for SCSPLEX Page 1 -----
COMMAND ==>
Name ==> Version ==> 1
Description ==>
RESGROUP ==>
User Data ==>

Program ==> DSWHR1VV Name program to process transaction
Twasize ==> 0 Transaction work area size (0-32767,blank)
Profile ==> DFHCICST Profile definition name
Partitionset ==> Application partition set (name, KEEP,
Status ==> ENABLED Transaction status (ENABLED, DISABLED)
Taskdataloc ==> BELOW Task storage location (BELOW, ANY)
Taskdatakey ==> USER Task storage key (USER, CICS)
Storageclear ==> NO Clear task life-time storage (YES, NO)
Runaway ==> SYSTEM Max tasktime (SYSTEM, 0-2700000, blank)
Shutdown ==> DISABLED Status during shutdown (DISABLED, ENABLED)
Isolate ==> YES Isolate user storage (YES, NO)

Press ENTER to create TRANDEF.
Press UP or DOWN to view other screens.
Type END or CANCEL to cancel without creating.

```

Figure 20. Transaction Definition CREate Panel: Using HR1

```

22JUN1998 17:43:54 ----- INFORMATION DISPLAY -----
COMMAND ==> CREate SCROLL ==>
CURR WIN ==> 1 ALT WIN ==>
W1 =TRANDEF=====SCSPLEX==*=====22JUN1998==17:43:54====CPSM=====
CMD Name Ver Created Changed Description
-----
HR1 1 6/17/98 11:39 6/17/98 11:39
HR2 1 6/17/98 11:39 6/17/98 11:39

```

Figure 21. Transaction Definition CREate Issued from COMMAND Line

```

----- Create Transaction Definition for SCSPLEX Page 1 -----
COMMAND ==>
Name      ==>          Version   ==> 0
Description ==>
RESGROUP  ==>
User Data  ==>

Program    ==>          Name program to process transaction
Twasize    ==> 0          Transaction work area size (0-32767,blank)
Profile    ==> DFHCICST  Profile definition name
Partitionset ==>        Application partition set (name, KEEP,
Status      ==> ENABLED  Transaction status (ENABLED, DISABLED)
Taskdataloc ==> BELOW    Task storage location (BELOW, ANY)
Taskdatakey ==> USER     Task storage key (USER, CICS)
Storageclear ==> NO      Clear task life-time storage (YES, NO)
Runaway    ==> SYSTEM   Max tasktime (SYSTEM, 0-2700000, blank)
Shutdown   ==> DISABLED Status during shutdown (DISABLED, ENABLED)
Isolate    ==> YES      Isolate user storage (YES, NO)

Press ENTER to create TRANDEF.
Press UP or DOWN to view other screens.
Type END or CANCEL to cancel without creating.

```

Figure 22. Create Transaction Definition Panel

3.6 Common Resource Definition Action Commands and Views

Table 3 lists the action commands supported by each resource definition view for creating and maintaining resources.

<i>Table 3. Common Resource Definition Action Commands</i>	
	Function
ADD	Add a resource definition to a resource group.
ALTER	Alter the attributes of multiple resource definitions of a given group.
BROWse	Browse a resource definition in the data repository.
CREate	Create a resource definition and add it to the data repository.
INStall	Install a resource in one or more active systems running CICS/ESA 4.1 or later.
MAP	Display a visual map of map definitions using the specified definition as a starting point.
REMOve	Remove a resource definition from the data repository.
UPDate	Update a resource definition in the data repository.

Table 4 lists the common resource definition views.

<i>Table 4 (Page 1 of 2). Common Resource Definition Views</i>		
Resource	View	Description
Connections	CONNDEF	Connection
DB2 connections	DB2CDEF	DB2 connection
DB2 entries	DB2EDEF	DB2 entry
DB2 transactions	DB2TDEF	DB2 transaction
Files	FILEDEF	File
File key segments	FSEGDEF	File key segment
Journals	JRNLEDEF	Journal

<i>Table 4 (Page 2 of 2). Common Resource Definition Views</i>		
Resource	View	Description
Journal models	JRNMDEF	Journal model
LSR pools	LSRDEF	LSR pool
Mapsets	MAPDEF	Map set
Partition sets	PRTNDEF	Partition set
Partners	PARTDEF	Partner
Profiles	PROFDEF	Profile
Programs	PROGDEF	Program
Sessions	SESSDEF	Session
Terminals	TERMDEF	Terminal
Transactions	TRANDEF	Transaction
Transaction class	TRNCLDEF	Transaction class
Transient data	TDQDEF	Transient data queue
Typeterms	TYPTMDEF	Typeterm definitions

3.7 BAS Administration Actions

Table 5 lists the action commands for BAS administration views.

<i>Table 5. BAS Administration Action Commands</i>	
	Function
ADD	Add an association between two BAS definitions.
BROwse	View a resource definition in read-only mode.
CREate	Create a BAS definition and add it to the data repository.
INStall	Install resource definitions associated with either a RESDESC or RESGROUP into one or more CICS regions.
MAP	Display a visual map of BAS definitions, using the specified definition as a starting point.
REMOve	Remove a BAS definition from the data repository.
REPlace	Replace the resources associated with one RESDESC with those associated with another RESDESC.
RES	Add multiple resource definitions of the same type to a RESGROUP.
UPDate	Update a resource definition in the data repository.

All of the BAS administration actions listed in Table 5 can also be performed by an API program or the batched repository-update facility. For more information about the CICSplex SM API, refer to *CICSplex SM Application Programming Interface*. For more information about using the batched repository-update facility, refer to *CICSplex SM Setup*.

3.7.1 Views for BAS Administration

Table 6 lists the common resource definition views for BAS administration.

<i>Table 6 (Page 1 of 2). Common Resource Definition Views for BAS Administration</i>		
Display	View	Actions
Resource assignments	RASGNDEF	Create, browse, update, and remove. Add an association between a resource assignment and a resource description.

<i>Table 6 (Page 2 of 2). Common Resource Definition Views for BAS Administration</i>		
Display	View	Actions
Resource descriptions	REDESC	Create, browse, update, and remove. Install or replace the resources associated with a resource description.
Resource descriptions with their resource assignments	RASINDSC	Browse, update, and remove associations between resources.
Resource descriptions with their resource groups	RESINDSC	Browse, update, and remove associations between resource descriptions and resource groups.
Resource groups	RESGROUP	Create, browse, and update. Add resource definitions to a resource group. Add an association between resource groups and a resource description. Install the resources associated with a resource group.
Resource groups with their resource definitions	RESINGRP	Remove associations between resource groups and resource definitions.
Resources selected by resource assignment	RASPROC	None
Resources selected by resource description	RDSCPROC	None
Resources selected for a CICS system	SYSRES	None

3.7.2 CEDA and BAS Administrative Functions

Table 7 compares the CEDA/RDO administrative functions with the BAS administrative functions.

<i>Table 7. CEDA and BAS Administrative Functions</i>	
CICS CEDA	CICSplex SM BAS
DEFINE resource	RESDEF CREATE
USERDEFINE resource	RESDEF CREATE against model
INSTALL resource	RESDEF INSTALL
VIEW resource	RESDEF BROWSE
ALTER resource	RESDEF ALTER
COPY group	RESGROUP CREATE members
MOVE group	RESGROUP CREATE association
INSTALL group	RESGROUP INSTALL
DISPLAY group	RESGROUP
CHECK group/list	Implicit - consistent set processing
DISPLAY list	REDESC
No equivalent	MAP
ADD group to list	RESGROUP ADD
APPEND list to list	REDESC CREATE model
EXPAND group/list	RESINGRP/RASINGRP
DELETE	REMOVE
LOCK/UNLOCK	No equivalent (use security)

As you can see from Table 7, CICSplex SM provides the same functions as the CICS CEDA transactions, with a few minor differences. CICSplex SM automatically performs a function similar to CEDA CHECK when certain ADD or UPDATE functions are carried out.

Chapter 4. Preparation of Migration Data

In this chapter we describe the process of extracting information from the CSD file and migrating data records to the data repository.

4.1 Data Repository Space Requirements

Migration of data records from the CSD to the data repository does not represent a one-to-one copy. New BAS records are created during the migration process. For example, if RESGROUP is specified as input to the EXTRACT process (see 4.2.1, "EXTRACT Routine" on page 34), one RESGROUP record is created for every new resource group and on every repository. The RESGROUP record is 118 bytes long. If RESINGRP is specified, one RESINGRP and two referential integrity records are created on every repository. The lengths are 97 bytes for RESINGRP and 146 bytes for referential integrity records.

One internal record, with a length of 189 bytes, is created for each RESINGRP record and is written to the maintenance point repository only. An internal record is not created to correspond to referential integrity records.

Table 8 lists the resource definition space requirements for the data repository.

Resource Name	Resource Type	BAS Length (bytes)	MPSYNCCR Length (bytes)	CSD Length (bytes)
CONNDEF	Connection	417	509	184
FILEDEF	File	448	540	264
JRNDEF	Journal	234	326	
JRNMDEF	Journalmodel	192	284	166
LSRDEF	LSR pool	474	566	182
MAPDEF	Mapset	178	270	146
PARTDEF	Partner	370	462	
PRTNDEF	Partitionset	178	270	146
PROFDEF	Profile	230	322	156
PROGDEF	Program	222	314	144
SESSDEF	Session	512	604	260
TDQDEF	Transient data	414	506	150
TERMDEF	Terminal	588	680	313
TRANDEF	Transaction	574	666	168
TRNCLDEF	Transaction class	166	258	
TYPTMDEF	Typeterm	507	599	336
DB2CDEF	DB2 connection	274	366	
DB2EDEF	DB2 entry	214	306	
DB2TDEF	DB2 transaction	170	262	

Note: The resource definition record lengths specified are valid for CICSplex SM Release 1.3. These records lengths may be modified in future releases.

All lengths include the 64-byte key. The MPSYNCCRs are always 92 bytes longer than the corresponding resource record.

To evaluate your data repository space requirements, multiply the number of current CSD resource definitions, for each resource type, by the new length. A 25% cushion for expansion is advisable.

To reallocate, use the IDCAMS REPRO utility to back up the current data repository, redefine the data repository with IDCAMS DEFINE, and then REPRO the backed up data into the new data repository. Rename the current data repository file with an alternative name and then rename the newly created data repository file to correspond to the DDname required by the CMAS. Perform reallocation with the CMAS shut down, to ensure that updates do not occur during the backup process.

Alternatively, you can develop a CICSplex SM API program that would extract the definitions and could then redefine them to a new repository. Refer to *CICSplex/SM Application Programming Interface* for a description of the CICSplex SM API. Sample CICSplex SM API programs are available on the World Wide Web at:

<http://www.software.ibm.com/ts/cicsplex>

Sample JCL to perform the REPRO, redefine, and rename process can be found in the SEYUSAMP(EYUJXDRP) and is shown in Figure 23 on page 33.


```

/*
/* Sample JCL - Expand CICSPlex SM Data Repository
/*
/* The following values need to be edited:
/* -----
/* dsindex   - CMAS DSN High Level Qualifier
/* dsvol     - Volume for the created data sets
/* cmasname  - CMAS Name for this repository
/* (xx,yy)   - Primary and secondary space values
/*
/*-----
/*
/* This sample JCL expands the CICSPlex SM data repository
/* using the following technique:
/*
/* - Allocates the new Data Repository data set.
/* - Copies the existing Data Repository data set.
/* - Renames original repository to dsindex.OLDDREP.cmasname.
/*-----
//DREPALLOC EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DEFINE CLUSTER -
  (NAME(dsindex.NEWDREP.cmasname) -
  RECORDS(xx,yy) -
  VOLUMES(dsvol) -
  CISZ(8192) -
  RECSZ(200,6550) -
  KEYS(64,0) -
  SHR(2) -
  INDEXED -
  SPEED -
  REUSE -
  ERASE)
  REPRO -
  INDATASET(dsindex.EYUDREP.cmasname) -
  OUTDATASET(dsindex.NEWDREP.cmasname)
/*
//RENAME EXEC PGM=IDCAMS,
// COND=(0,NE)
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
ALTER -
  dsindex.EYUDREP.cmasname -
  NEWNAME(' dsindex.OLDDREP.cmasname')
ALTER -
  dsindex.NEWDREP.cmasname -
  NEWNAME(' dsindex.EYUDREP.cmasname')
/*

```

Figure 23. Sample JCL to Expand the CICSPlex SM Data Repository

4.2 Extraction of Data from the CSD File

To enable you to migrate resource definitions from your CSD file, CICSplex SM provides an exit routine that can extract records from an existing CSD. The exit routine uses the EXTRACT command of the CICS DFHCSDUP utility to read the CSD records. The name of this routine is specified through the USERPROGRAM parameter of the DFHCSDUP utility. The extracted CSD records are processed to generate equivalent CICSplex SM resource definition records that you can use as input to the batched repository-update facility.

4.2.1 EXTRACT Routine

The EXTRACT routine, EYU9BCSD, is supplied in the CPSM130.SEYUAUTH library. You must run the routine on an MVS/ESA system. It enables the extraction of records from CSD files on CICS 3.3 systems and higher.

For each CSD record identified in your input file, EYU9BCSD generates an equivalent CICSplex SM resource definition record. For example, a CSD PROGRAM record is used to build a PROGDEF resource definition. Each field in the CSD record is used to assign the appropriate attribute value to the resource definition.

In addition to generating individual resource definitions, EYU9BCSD also generates CICSplex SM resource group (RESGROUP) definitions. It uses the RESGROUP keyword of the xxxxDEF resource definition to maintain the relationship with the resource group, ensuring that resource definitions will be automatically associated with the appropriate resource group. You can choose to create a resource group for each CSD group presented to the exit, using the existing GROUP names. Alternatively, you can name a single resource group to be created from all CSD groups that EYU9BCSD is processing.

Output generated by EYU9BCSD is in the form of batched repository-update facility CREATE commands. When the batched repository-update facility processes this data as input, it creates the appropriate definition records in the data repository.

Figure 24 on page 35 shows the processing of resource definitions in the CSD associated with group(NEWDSW). The DFHCSDUP EXTRACT process formats entries to be used by the CICSplex SM Batchrep update utility and stores this data in an intermediate file. The intermediate file contains reformatted data for selected entries in the CSD, and each resource definition is represented by a CICSplex SM BAS CREATE command. In Figure 24 on page 35, a RESGROUP is created for CSD group NEWDSW. TRANDEFs are created for transactions, and entries are built for all resources that are to be extracted from the CSD. This input data is then used to build resource definitions that will reside in the data repository.

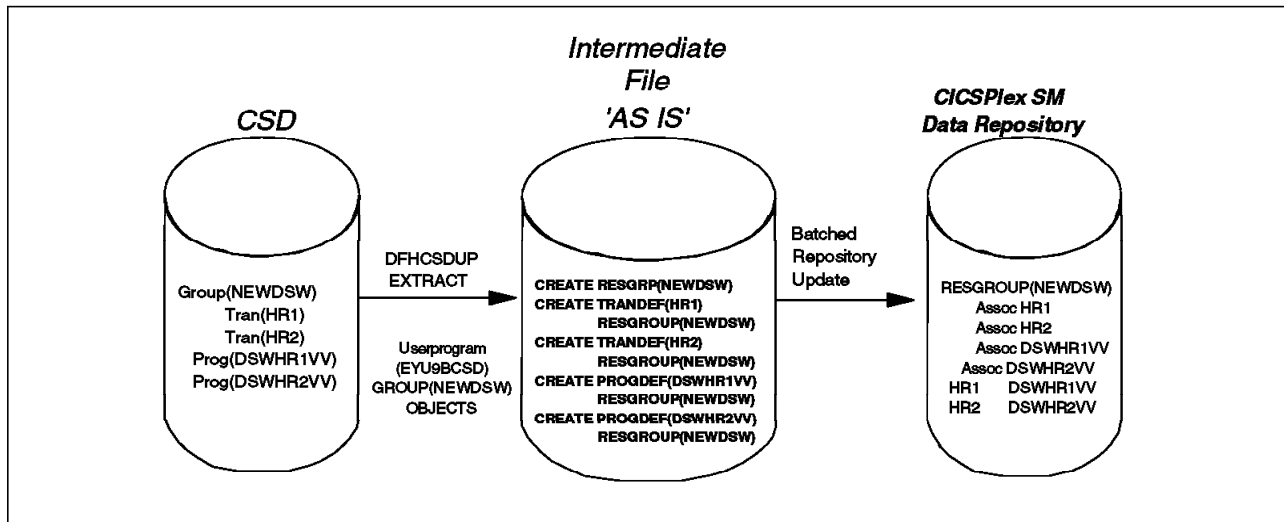


Figure 24. CSD to Data Repository Migration Process

4.2.2 EXTRACT Routine Control Statements

The input control statements for the CICSPlex SM EXTRACT routine enable you to selectively extract CSD records and associate them with a nominated resource group. Figure 25 shows the sample JCL to process the EXTRACT request. This sample JCL is supplied in member EYUJCLEX in the CPSM130.SEYUSAMP library. (Figure 29 on page 46 shows the modifications we made to the JCL to run it on our system.)

```

/*****
/**
/** Edit and run this job to extract a group of CICS resource
/** definitions from a CICS System Definition file.
/**
/** The file created by this job can be used as input to the
/** SUBMIT command of the BATCHREP view within the EUI.
/**
/** The BATCHREP processing will load the resource definitions
/** into the CICSPlex SM data repository.
/**
/** Variables you must edit are:
/** -----
/** cics.index. - High level DSN qualifier for CICS.
/**
/** cpsm.index. - High level DSN qualifier for CPSM.
/**
/** cics.dfhcscd - DSN of CICS CSD to be accessed.
/**
/** group_name - CICS group name being extracted.
/** This can be a group list name.
/** To process a group list edit:
/** GROUP(group_name) to LIST(group_name)

```

Figure 25 (Part 1 of 2). Sample JCL to Run EYU9BCSD for a CSD Group

```

/**
/** The control statements following the EYUIN statement can be
/** edited to select specific resource definitions.
/**
/** The RESINGRP(CSDGROUP) statement can be edited to assign a
/** new group name to the extracted resource definitions.
/**-----
//CSDXTRCT EXEC PGM=DFHCSDUP,
//          COND=(0,NE),
//          PARM='CSD(READONLY)'
//STEPLIB  DD DISP=SHR,DSN=cics.index.SDFHLOAD
//          DD DISP=SHR,DSN=cpsm.index.SEYUAUTH
//DFHCSD   DD DISP=SHR,DSN=cics.dfhcsd
//EYUOUT   DD DISP=(,CATLG,DELETE),
//          DSN=cpsm.index.EYUOUT.group_name,
//          SPACE=(TRK,(1,5)),
//          UNIT=SYSDA
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(group_name)
/*
//EYUIN    DD *
RESGROUP(group_name)
RESINGRP(CSDGROUP)
DB2CONN(*)
DB2ENTRY(*)
DB2TRAN(*)
CONNECTION(*)
FILE(*)
JOURNAL(*)
JOURNALMODEL(*)
LSRPOOL(*)
MAPSET(*)
PARTITIONSET(*)
PARTNER(*)
PROFILE(*)
PROGRAM(*)
SESSIONS(*)
TDQUEUE(*)
TERMINAL(*)
TRANCLASS(*)
TRANSACTION(*)
TYPETERM(*)
/*

```

Figure 25 (Part 2 of 2). Sample JCL to Run EYU9BCSD for a CSD Group

The sample JCL extracts resource definitions of all resource types from a specified CSD group (group_name). At the same time, a CICSplex SM resource group (RESGROUP) is generated for that CSD group, and associations are generated between the group and the resource definitions.

Modify the sample JCL to provide the following information:

EYUOUT

Identify `cpsm.index.EYUOUT.group_name` as a sequential data set where the batched repository-update facility commands generated by the EXTRACT routine can be written.

STEPLIB

Identify:

- `cics.index.SDFHLOAD` as the CICS load library containing the DFHCSDUP module
- `cpsm.index.SEYUAUTH` as the CICSplex SM load library containing EYU9BCSD

DFHCSD

Identify `cics.dfhcscd` as the VSAM data set that serves as the CSD file.

SYSIN

Identify `group_name` as the CSD group from which definitions are to be extracted.

To extract definitions from all groups in a CSD group list:

1. Change `GROUP(group_name)` to `LIST(list_name)`.
2. Identify a CSD group list.
3. Change all other occurrences of `group_name` to the appropriate `list_name`.

EYUIN

If you specify `LIST(list_name)` in the SYSIN statement, change the RESGROUP value from `group_name` to `CSDGROUP`. Specifying `CSDGROUP` generates a resource group for each CSD group in the group list.

4.2.3 EXTRACT Routine Output

When you use the DFHCSDUP EXTRACT options and the CICSplex SM EXTRACT routine, the following batched repository-update facility commands are generated:

- `CREATE RESGROUP NAME(resgroup)`
- `CREATE xxxxDEF RESGROUP(resgroup)`

where `xxxxDEF` is the type of resource definition being created (for example, `PROGDEF`, for a program definition).

Note: If you did not specify a `RESINGRP` statement in your EXTRACT routine input, the `CREATE xxxxDEF` command is generated without a `RESGROUP` operand. Therefore the resource definition will not be associated with any resource group.

If multiple CSD records are found for the same resource type and name, multiple `CREATE` commands are generated, each with a different version number. The batched repository-update facility `CREATE` commands are written to the EYUOUT output file that you identified in the DFHCSDUP JCL.

The CREATE commands are generated in the proper form and the proper sequence for use by the batched repository-update facility. However, before you use the EXTRACT output as input to the batched repository-update facility, you must edit the EYUOUT file as follows:

Context

The batched repository-update facility needs to know the CICSplex SM context for the resource definitions being processed. You must insert a CONTEXT statement at the beginning of the file to identify the CICSplex to which the updates apply.

Passwords

The CSD records extracted by DFHCSDUP do not include passwords. Any resource definitions that include passwords are generated with blanks (X'40') in the password fields, unless you add the passwords manually. You can edit individual CREATE commands in the file to add the appropriate password fields. The passwords are then included in the resource definitions that CICSplex SM generates in the data repository. Be aware, however, that the batched repository-update facility output will include a visible record of the passwords that you entered.

Obsolete fields

The CSD records extracted by DFHCSDUP do not include fields that are considered obsolete but which are retained for compatibility (such as RSL in a map set, partition set program, or transaction definition). You can edit individual CREATE commands in the file to add the appropriate fields. The additional fields are then included in the resource definitions that CICSplex SM generates in the data repository.

Once you have made the necessary changes to the EXTRACT routine output file, you can use it as input to the batched repository-update facility.

Chapter 5. Cookbook Approach to BAS Migration

In this chapter we describe the ITSO CICSplex environment, the sample Hotel Reservation application and its related resource definitions, and the steps that we executed to migrate the application from an RDO/CSD environment to a CICSplex SM BAS environment.

The procedures we describe in this chapter are one way of performing a migration. You might find another set of procedures more appropriate for your environment.

5.1 ITSO CICSplex Environment

Our CICSplex ran in a Parallel Sysplex of two MVS images and two coupling facilities.

Our environment consisted of a CICS TOR and two AORs in each MVS image. The TORs had SYSIDs of PTA1 and PTA2. We used the VTAM generic resource facility to balance the workload between the TORs. In each MVS image, one AOR ran CICS TS 1.2 and one ran CICS/ESA 4.1. As CICS/ESA 4.1 cannot access VSAM data sets in RLS mode, we provided an FOR running CICS TS 1.2 on one MVS image to allow the applications in the CICS/ESA 4.1 regions to access RLS mode data sets. An SMSVSAM server address space was run on each MVS image to support RLS access. Figure 26 on page 40 shows the CICS view of our environment.

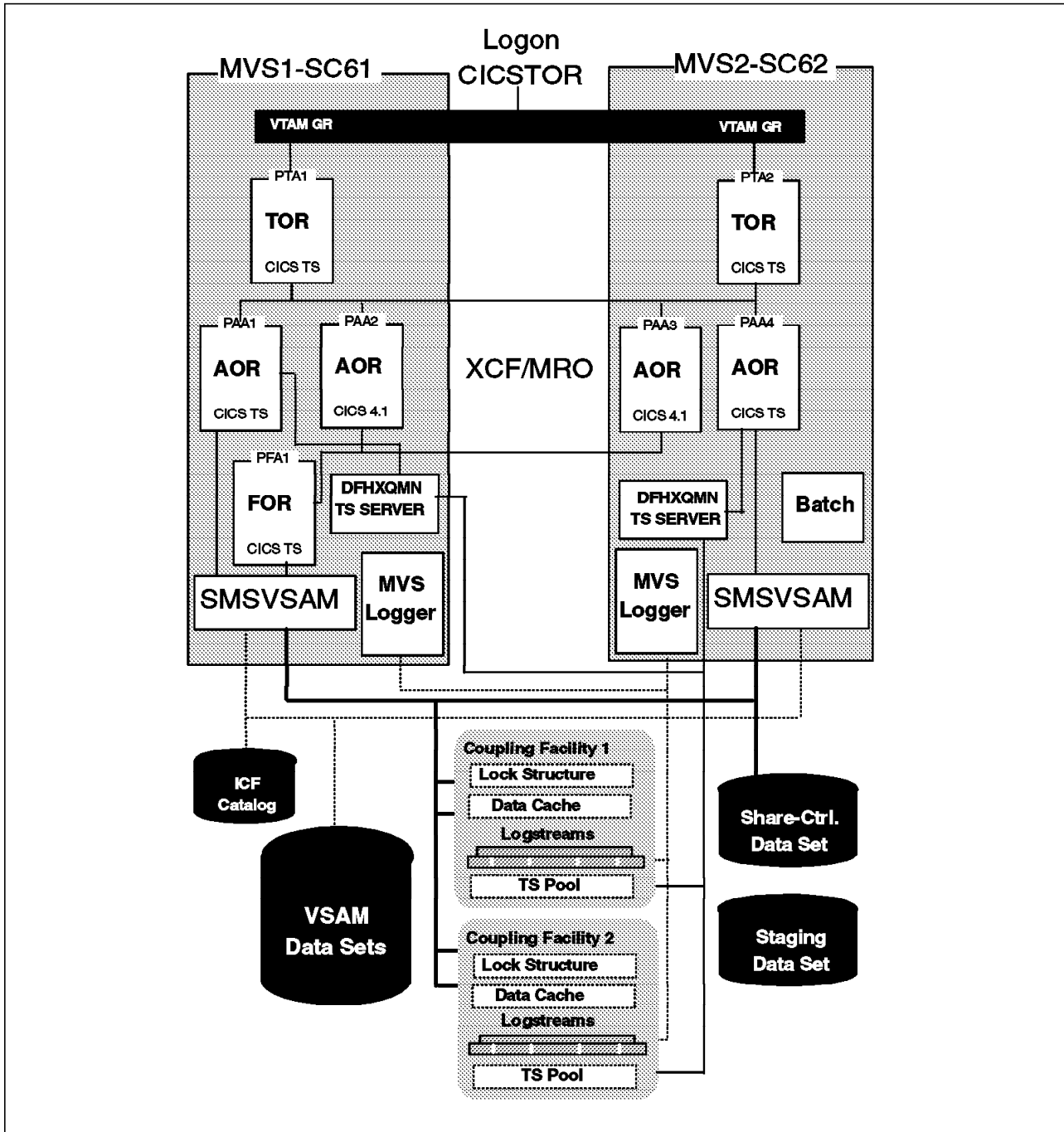


Figure 26. CICS View of ITSO Configuration

The following CICS and CICSplex SM regions ran in MVS image SC61:

- TOR PTA1, APPLID = SCSCPTA1, SYSID = PTA1, CICS TS 1.2
- AOR PAA1, APPLID = SCSCPAA1, SYSID = PAA1, CICS TS 1.2
- AOR PAA2, APPLID = SCSCPAA2, SYSID = PAA2, CICS/ESA 4.1
- FOR PFA1, APPLID = SCSCPFA1, SYSID = PFA1, CICS TS 1.2
- CMAS PCA1, APPLID = SCSCPCA1, SYSID = PCA1, CICS TS 1.2

The following CICS and CICSplex SM regions ran in MVS image SC62:

- TOR PTA2, APPLID = SCSCPAA3, SYSID = PAA3, CICS TS 1.2
- AOR PAA3, APPLID = SCSCPAA3, SYSID = PAA3, CICS/ESA 4.1
- AOR PAA4, APPLID = SCSCPAA4, SYSID = PAA4, CICS TS 1.2
- CMAS PCB1, APPLID = SCSCPAA4, SYSID = PAA4, CICS TS 1.2

We used CICSplex SM 1.3 to manage our CICSplex, SCSPLEX. There was one CAS and one CMAS in each MVS image, and a CAS-to-CAS and a CMAS-to-CMAS communication link between the two sides. Each CMAS managed all of the CICS regions (MASs) running in the same MVS image. Figure 27 shows the CICSplex SM view of our environment.

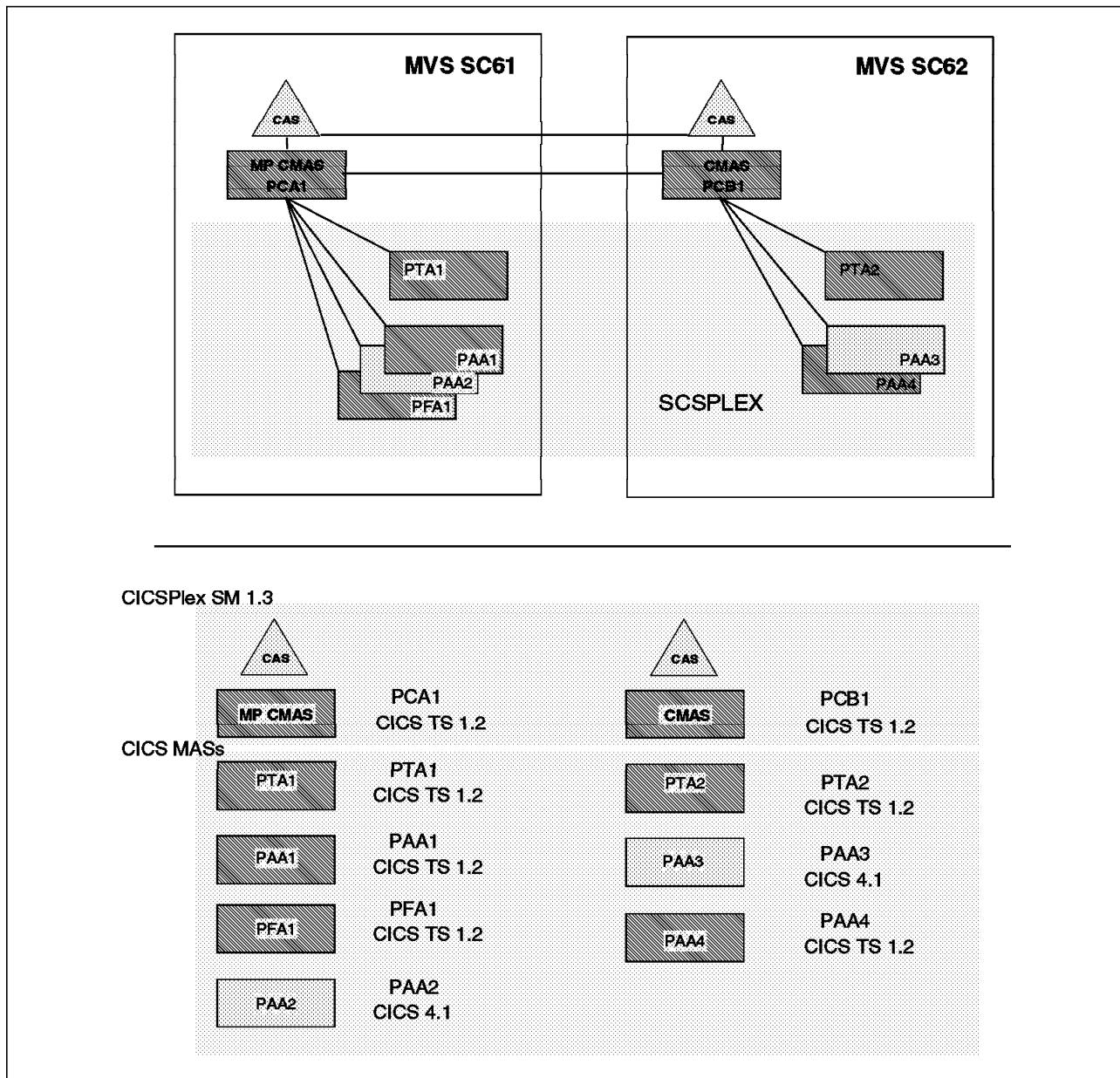


Figure 27. CICSplex SM View of ITSO Configuration

The BAS migration process we describe here is not based on the structure of your CICSplex, but on the structure of your business applications. Therefore, the

processes described can be used in extremely large CICSplex environments, as well as fairly simple environments as in our case.

The prerequisites for BAS are CICSplex SM 1.3 and CICS regions that support the EXEC CICS CREATE SPI command (CICS TS 1.1 and 1.2, CICS/ESA 4.1 with PTF UQ05148). You do not need a coupling facility, VSAM RLS, or VTAM generic resources to implement BAS.

5.2 ITSO Application

To simulate a real environment we used a teleprocessing network simulator (TPNS) tool. We executed a TPNS-initiated VSAM workload while we were performing the migration steps. Our environment included five applications:

- HOTELRES - Hotel Reservation
- INVENTOR - Inventory Tracking
- SPECIFIC - Production Specification
- STOCK - Stock Control
- TELLER - Teller System

We decided that the migration process would initially be for a single application and chose the Hotel Reservation application (Figure 28 on page 43).

The Hotel Reservation application included the following resources:

- Two transactions
 - HR1
 - HR2
- Two programs
 - DSWHR1VV
 - DSWHR2VV
- Three maps
 - MAPHR1I
 - MAPHR1O
 - MAPHR2O
- A file, HOTEL1

Our goal was to manage these CICS resources with BAS. We used CEDF to single-step through each program so that you could understand the basic program flow. Only CICS commands related to I/O are shown for the Hotel Reservation application in Figure 28 on page 43.

The same application could be invoked using another set of definitions: HX1 and HX2 transaction definitions, DSWHX1VV and DSWHX2VV program definitions, MAPHX1I, MAPHX1O, and MAPHX2O map definitions, and a HOTEL1X file definition. In this section we show only the migration of the first set of definitions, but Figure 172 on page 167 shows both sets.

```

Hotel Reservation Application.
=====

Hotel Reservation Processing - HR1 (HX1)

EXEC CICS RECEIVE MAP
MAP ('MAPHR1I')

EXEC CICS READ
FILE ('HOTEL1 ')
INTO ('.....')
LENGTH (30)
RIDFLD ('007300A0200C0100')
KEYLENGTH (16)
UPDATE

EXEC CICS REWRITE
FILE ('HOTEL1 ')
FROM ('007300A0200C0100*..%000000%*..')
LENGTH (30)

EXEC CICS SEND MAP
MAP ('MAPHR1O')
FROM ('.....HR1 ...DATA
LENGTH (1200)

Reservation Segment Create - HR2 (HX2)

EXEC CICS RECEIVE MAP
MAP ('MAPHR1O')

EXEC CICS READ
FILE ('HOTEL1 ')
INTO ('.....')
LENGTH (30)
RIDFLD ('019300A0300')
KEYLENGTH (11)

EXEC CICS WRITE FILE
FILE ('HOTEL1 ')
FROM ('019300A0300B0068*..%000000%..%')
LENGTH (30)
RIDFLD ('019300A0300B0068')
KEYLENGTH (16)

EXEC CICS SEND MAP
MAP ('MAPHR2O')
FROM ('.....HR2 ...DATA
LENGTH (1200)

```

Figure 28. Hotel Reservation Application

After the successful migration of the Hotel Reservation application, we migrated the other four applications to the *as is* stage and then to a *full BAS* environment.

5.3 Step-by-Step Analysis of the Migration Process

Migration to the BAS environment consists of two stages:

1. Movement of resource definitions from the CSD to the CICSplex SM data repository, using the EXTRACT routine provided by BAS. The EXTRACT routine is discussed in Chapter 4. The process generates a data repository version of the CSD. This stage is known as the *as is* phase.
2. Migration to a *full BAS* environment, using resource assignments (RASGNDEFs) and logical scoping. RASGNDEFs are discussed in detail in Chapter 3, “BAS Terminology” on page 15. Logical scoping is discussed in Chapter 6, “Change Management” on page 97.

5.3.1 As Is Migration: CSD to Data Repository

The *as is* migration process gives you a resource hierarchy similar to the RDO/CSD structure. Each resource definition is in a resource group, and each resource group is associated with a resource description, which is similar to a group list. There are no resource assignments, and although you could run your CICSplex SM environment satisfactorily, you would not be taking advantage of the special functions offered by CICSplex SM BAS.

5.3.1.1 Step 1: EXTRACT Application Resource Definitions from the CSD

To migrate resource definitions from a CSD file, CICSplex SM provides an exit routine, EYU9BCSD, in the CPSM130.SEYUAUTH library. We used the sample JCL in Appendix A of *CICSplex SM: Managing Business Applications*.

We made the following changes:

- The name of our CSD was CICSSYSF.CICSTS12.DFHCSDD.
- The name of our intermediate file was CICSSYSF.EYUOUT.groupname.
- Our list was PAALIST for the transaction, program, and map definitions.
 - The group name was NEWDSW.
 - Figure 29 on page 46 shows the DFHCSDDUP EXTRACT JCL, and Figure 30 on page 48 shows the output created by this job for the mapset, program, and transaction definitions in group NEWDSW.
- Our file definition list for the CICS TS 1.2 AOR regions was RLSSLIST, and these files were defined as local resources. These files can alternatively be open for RLS or non-RLS access.
 - The group name was DSWRLSU.
 - Figure 31 on page 51 shows the SYSIN statement for the DFHCSDDUP EXTRACT JCL, and Figure 32 on page 52 shows the output created by this job for the file definitions in group DSWRLSU.
- Our file definition list for the CICS/ESA 4.1 regions was LSRLIST, and these files were defined as remote resources belonging to an FOR. These files can be opened by an FOR in either RLS or non-RLS mode.
 - The group name was DSWLSRU.
 - Figure 33 on page 53 shows the SYSIN statements for the DFHCSDDUP EXTRACT JCL, and Figure 34 on page 54 shows the output created by this job for the file definitions in group DSWLSRU.

Our resource definitions were associated with three groups. We used generic names for the definitions in our EXTRACT job, which produced an exact match of the CSD resource definitions. The intermediate file created by the EXTRACT process contains all CSD entries, some current, some obsolete, depending on the cleanup process that you have implemented for maintaining your CSD.

You can edit the generated output from the EXTRACT process and remove obsolete entries, or alternatively you could move all of the definitions for a complete application into one group, if your group lists are application specific. If that is the case, the EXTRACT output would contain all definitions for that group, which would encompass a complete application. Migrating on a group/application basis also helps with the later CSD cleanup process, when migrated application resource definitions must be removed from the CSD.

Figure 29 on page 46 shows the JCL we used to extract definitions of resources in the Hotel Reservation application.

```

//C13EXTRA JOB (999,POK),NOTIFY=&SYSUID,
//      CLASS=A,MSGCLASS=T,MSGLEVEL=(1,1),TIME=1440
//*****
/** LAST LIST : PAALIST
//*****
/**
/** Edit and run this job to extract a group of CICS resource
/** definitions from a CICS System Definition file.
/**
/** The file created by this job can be used as input to the
/** SUBMIT command of the BATCHREP view within the EUI.
/**
/** The BATCHREP procesing will load the resource definitions
/** into the CICSplex SM data repository.
/**
/** Variables you must edit are:
/** -----
/**
/** cics.index. - High level DSN qualifier for CICS.
/**
/** cpsm.index. - High level DSN qualifier for CPSM.
/**
/** cics.dfhcscd - DSN of CICS CSD to be accessed.
/**
/** group_name - CICS group name being extracted.
/**              This can be a group list name.
/**              To process a group list edit:
/**              GROUP(group_name) to LIST(group_name)
/**
/** The control statements following the EYUIN statement can be
/** edited to select specific resource definitions.
/**
/** The RESINGRP(CSDGROUP) statement can be edited to assign a
/** new group name to the extracted resource definitions.
/**
/**-----
/**
/** Delete the extract output file for a rerun of this job
/**
/**-----
//BR14OUT EXEC PGM=IEFBR14
//EYUOUT DD DISP=(MOD,DELETE,DELETE),
//        DSN=CICSSYSF.EYUOUT.NEWDSW,
//        SPACE=(TRK,(1,1)),
//        UNIT=SYSDA

```

Figure 29 (Part 1 of 2). DFHCSDUP Extract JCL for Mapsets, Programs, and Transactions

```

/*-----
/*
/* Extract the CSD Resource Definitions
/*
/*-----
//CSDXTRCT EXEC PGM=DFHCSDUP,
//          COND=(0,NE),
//          PARM=' CSD(READONLY)'
//STEPLIB  DD DISP=SHR,DSN=CICSTS12.CICS.SDFHLOAD
//          DD DISP=SHR,DSN=CICSTS12.CPSM.SEYUAUTH
//DFHCSD   DD DISP=SHR,DSN=CICSSYSF.CICSTS12.DFHCSD
//EYUOUT   DD DISP=(,CATLG,DELETE),
//          DSN=CICSSYSF.EYUOUT.NEWDSW,
//          SPACE=(TRK,(1,5)),
//          UNIT=SYSDA
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(NEWDSW)
/*
//EYUIN    DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
MAPSET(MAPHR*)
PROGRAM(DSWHR+VV)
TRANSACTION(HR*)
/*
/*-----
/*
/* List EYUOUT to view errors
/*
/*-----
//LISTOUT EXEC PGM=IEBGENER
//SYSUT1   DD DISP=OLD,DSN=CICSSYSF.EYUOUT.NEWDSW
//SYSUT2   DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSIN    DD DUMMY

```

Figure 29 (Part 2 of 2). DFHCSDUP Extract JCL for Mapsets, Programs, and Transactions

Figure 30 on page 48 shows the output statements created by the EXTRACT utility run for mapsets, programs, and transactions that are used as input by the batched repository-update facility.

```

/*
  RESGROUP(CSDGROUP)
  RESINGRP(CSDGROUP)
  MAPSET(MAPHR*)
  PROGRAM(DSWHR+VV)
  TRANSACTION(HR*)
*/
CREATE RESGROUP      RESGROUP(NEWDSW)
                     DESCRIPTION( )
                     ;
CREATE MAPDEF        NAME(MAPHR1I)
                     DESCRIPTION( )
                     RESIDENT(NO)
                     USAGE(NORMAL)
                     USELPACOPY(NO)
                     STATUS(ENABLED)
                     RESGROUP(NEWDSW)
                     ;
CREATE MAPDEF        NAME(MAPHR10)
                     DESCRIPTION( )
                     RESIDENT(NO)
                     USAGE(NORMAL)
                     USELPACOPY(NO)
                     STATUS(ENABLED)
                     RESGROUP(NEWDSW)
                     ;
CREATE MAPDEF        NAME(MAPHR20)
                     DESCRIPTION( )
                     RESIDENT(NO)
                     USAGE(NORMAL)
                     USELPACOPY(NO)
                     STATUS(ENABLED)
                     RESGROUP(NEWDSW)
                     ;
CREATE PROGDEF       NAME(DSWHR1VV)
                     DESCRIPTION( )
                     LANGUAGE(COBOL)
                     RELOAD(NO)
                     RESIDENT(NO)
                     USAGE(NORMAL)
                     USELPACOPY(NO)
                     STATUS(ENABLED)
                     CEDF(YES)
                     DATALOCATION(BELOW)
                     EXECKEY(USER)
                     REMOTESYSTEM( )
                     REMOTENAME( )
                     TRANSID( )
                     EXECUTIONSET(FULLAPI)
                     RESGROUP(NEWDSW)
                     ;

```

Figure 30 (Part 1 of 3). DFHCSDUP Extract Run Output for Mapsets, Programs, and Transactions


```

CREATE PROGDEF          NAME(DSWHR2VV)
                        DESCRIPTION( )
                        LANGUAGE(COBOL)
                        RELOAD(NO)
                        RESIDENT(NO)
                        USAGE(NORMAL)
                        USELPACOPY(NO)
                        STATUS(ENABLED)
                        CEDF(YES)
                        DATALOCATION(BELOW)
                        EXECKEY(USER)
                        REMOTESYSTEM( )
                        REMOTENAME( )
                        TRANSID( )
                        EXECUTIONSET(FULLAPI)
                        RESGROUP(NEWD SW)
                        ;
CREATE TRANDEF          NAME(HR1)
                        DESCRIPTION( )
                        PROGRAM(DSWHR1VV)
                        TWASIZE(0)
                        PROFILE(DFHICST)
                        PARTITIONSET( )
                        STATUS(ENABLED)
                        TASKDATALOC(BELOW)
                        TASKDATAKEY(USER)
                        STORAGECLEAR(NO)
                        RUNAWAY(SYSTEM)
                        SHUTDOWN(DISABLED)
                        ISOLATE(YES)
                        BREXIT( )
                        DYNAMIC(YES)
                        REMOTESYSTEM( )
                        REMOTENAME(HR1)
                        TRPROF(DFHICSS)
                        LOCALQ( )
                        PRIORITY(1)
                        TRANCLASS(DFHTCLO0)
                        ALIAS( )
                        TASKREQ( )
                        XTRANID( )
                        TPNAME( )
                        XTPNAME( )
                        DTIMOUT(10)
                        RESTART(NO)
                        SPURGE(YES)
                        TPURGE(NO)
                        DUMP(YES)
                        TRACE(YES)
                        CONFDATA(NO)
                        FAILACTION(BACKOUT)

```

Figure 30 (Part 2 of 3). DFHCSDUP Extract Run Output for Mapsets, Programs, and Transactions

```

        WAIT(YES)
        WAITTIMEDD(0)
        WAITTIMEHH(0)
        WAITTIMEMM(0)
        RESSEC(NO)
        CMDSEC(NO)
        RESGROUP(NEWDSW)
        ;
CREATE TRANDEF      NAME(HR2)
        DESCRIPTION( )
        PROGRAM(DSWHR2VV)
        TWASIZE(0)
        PROFILE(DFHICST)
PARTITIONSET( )
        STATUS(ENABLED)
        TASKDATALOC(BELOW)
        TASKDATAKEY(USER)
STORAGECLEAR(NO)
        RUNAWAY(SYSTEM)
        SHUTDOWN(DISABLED)
        ISOLATE(YES)
        BREXIT( )
        DYNAMIC(YES)
REMOTESYSTEM( )
        REMOTENAME(HR2)
        TRPROF(DFHICSS)
        LOCALQ( )
        PRIORITY(1)
        TRANCLASS(DFHTCLO0)
        ALIAS( )
        TASKREQ( )
        XTRANID( )
        TPNAME( )
        XTPNAME( )
        DTIMOUT(10)
        RESTART(NO)
        SPURGE(YES)
        TPURGE(NO)
        DUMP(YES)
        TRACE(YES)
        CONFDATA(NO)
        FAILACTION(BACKOUT)
        WAIT(YES)
        WAITTIMEDD(0)
        WAITTIMEHH(0)
        WAITTIMEMM(0)
        RESSEC(NO)
        CMDSEC(NO)
        RESGROUP(NEWDSW)
        ;

```

Figure 30 (Part 3 of 3). DFHCSDUP Extract Run Output for Mapsets, Programs, and Transactions

Figure 33 on page 53 shows the SYSIN and EYUIN statements from the EXTRACT JCL for CICS TS 1.2 file definitions.

```
//SYSIN DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(DSWRLSU)
/*
//EYUIN DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
FILE(HOTEL1*)
/*
```

Figure 31. SYSIN and EYUIN Statements from the EXTRACT JCL for the CICS TS 1.2 File Definitions

Figure 32 on page 52 shows the output statements created by the EXTRACT utility run for files to be opened in RLS mode and used as input by the batched repository-update facility.

```

/*
  RESGROUP(CSDGROUP)
  RESINGRP(CSDGROUP)
  FILE(HOTEL1*)
*/
CREATE RESGROUP      RESGROUP(DSWRLSU)
                     DESCRIPTION( )
                     ;
CREATE FILEDEF       NAME(HOTEL1)
                     DESCRIPTION( )
                     DSNAME(CICSDSW.VSAMU.HOTEL1)
                     PASSWORD( )
                     RLSACCESS(YES)
                     LSRPOOLID(2)
                     READINTEG(REPEATABLE)
                     DSNSHARING(ALLREQS)
                     STRINGS(10)
                     NSRGROUP( )
                     REMOTESYSTEM( )
                     REMOTENAME( )
                     RECORDSIZE( )
                     KEYLENGTH( )
                     STATUS(ENABLED)
                     OPENTIME(STARTUP)
                     DISPOSITION(SHARE)
                     DATABUFFERS(11)
                     INDEXBUFFERS(10)
                     TABLE(NO)
                     MAXNUMRECS( )
                     RECORDFORMAT(FIXED)
                     ADD(YES)
                     BROWSE(NO)
                     DELETE(YES)
                     READ(YES)
                     UPDATE(YES)
                     JOURNAL(NO)
                     JNLREAD(NONE)
                     JNLSYNCREAD(NO)
                     JNLUPDATE(NO)
                     JNLADD(NONE)
                     JNLSYNCWRITE(YES)
                     RECOVERY(ALL)
                     FWDRECOVLOG(90)
                     BACKUPTYPE(STATIC)
                     RESGROUP(DSWRLSU)
                     ;

```

Figure 32. EXTRACT Run Output for CICS TS 1.2 File Definitions

Figure 33 on page 53 shows the SYSIN and EYUIN statements from the EXTRACT JCL for CICS/ESA 4.1 file definitions.

```
//SYSIN      DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(DSWLSRU)
/*
//EYUIN      DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
FILE(HOTEL1*)
/*
```

Figure 33. SYSIN and EYUIN Statements from the EXTRACT JCL for the CICS/ESA 4.1 File Definitions

Figure 34 on page 54 shows the output statements created by the EXTRACT routine run for files to be defined as remote and belonging to an FOR that are used as input by the batched repository-update facility.

```

/*
  RESGROUP(CSDGROUP)
  RESINGRP(CSDGROUP)
  FILE(HOTEL1*)
*/
CREATE RESGROUP      RESGROUP(DSWLSRU)
                    DESCRIPTION( )
                    ;
CREATE FILEDEF       NAME(HOTEL1)
                    DESCRIPTION( )
                    DSNAME(CICSDSW.VSAMU.HOTEL1)
                    PASSWORD( )
                    RLSACCESS(NO)
                    LSRPOOLID(3)
                    READINTEG(UNCOMMITTED)
                    DSNSHARING(ALLREQS)
                    STRINGS(10)
                    NSRGROUP( )
                    REMOTESYSTEM(PFA1)
                    REMOTENAME(HOTEL1)
                    RECORDSIZE(30)
                    KEYLENGTH(16)
                    STATUS(ENABLED)
                    OPENTIME(STARTUP)
                    DISPOSITION(SHARE)
                    DATABUFFERS(11)
                    INDEXBUFFERS(10)
                    TABLE(NO)
                    MAXNUMRECS( )
                    RECORDFORMAT(FIXED)
                    ADD(YES)
                    BROWSE(NO)
                    DELETE(YES)
                    READ(YES)
                    UPDATE(YES)
                    JOURNAL(NO)
                    JNLREAD(NONE)
                    JNLSYNCREAD(NO)
                    JNLUPDATE(NO)
                    JNLADD(NONE)
                    JNLSYNCWRITE(YES)
                    RECOVERY(ALL)
                    FWDRECOVLOG(90)
                    BACKUPTYPE(STATIC)
                    RESGROUP(DSWLSRU)
                    ;

```

Figure 34. EXTRACT Run Output for CICS/ESA 4.1 File Definitions

5.3.1.2 Step 2: Back up the Data Repository

At this stage nothing has changed. We have just prepared the input data to be used by the CICSplex SM batched repository-update facility. Now we have to update the data repository.

To prepare for the data repository update, we backed up the current data repository for the maintenance point CMAS in MVS image SC61 and the data

repository for the CMAS in MVS image SC62. Figure 35 on page 55 shows the REPRO JCL that we used for the backup.

```
//C13BKUP JOB (999,POK),NOTIFY=&SYSUID,
//      CLASS=A,MSGCLASS=T,MSGLEVEL=(1,1),TIME=1440
//*
//*-----
//*
//* Copy the R130 MP data repository to a backup
//*
//*-----
//DREPALOC EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
DELETE  CICSSYSF.CPSM130.EYUDREP.BKUPPCA1
DEFINE CLUSTER -
      (NAME(CICSSYSF.CPSM130.EYUDREP.BKUPPCA1) -
      RECORDS(500,3000) -
      VOLUMES(TOTC13) -
      CISZ(8192) -
      RECSZ(200,6550) -
      KEYS(64,0) -
      SHR(2) -
      INDEXED -
      SPEED -
      REUSE -
      ERASE)
/*
//DREPRPRO EXEC PGM=IDCAMS
//IN      DD DSN=CICSSYSF.CPSM130.EYUDREP.SCSCPCA1,DISP=SHR
//TEMP    DD DISP=SHR,
//          DSN=CICSSYSF.CPSM130.EYUDREP.BKUPPCA1
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
      REPRO INFILE(IN) OUTFILE(TEMP)
/*
//*-----
```

Figure 35. REPRO JCL to Back Up the Data Repository

After we performed the backups, we were ready to update the data repository with our new definitions.

5.3.1.3 Step 3: Update the Data Repository

We used the following three files with the CREATE definitions data as input to the batch run:

- CICSSYSF.EYUOUT.NEWD SW
- CICSSYSF.EYUOUT.DSWRLSU
- CICSSYSF.EYUOUT.DSWLSRU

The batched repository-update facility needs to know the CICSplex SM context for the resource definitions being processed. Our updates applied to the whole CICSplex, so the context in the input file was the CICSplex name, SCSPLEX. Because the context name is not generated automatically, we inserted the following CONTEXT statement at the beginning of each file:

- CONTEXT SCSPLEX;

When you interact with CICSplex SM, you must set the maintenance point CMAS as the context for the batched repository-update facility. This is the CMAS whose data repository is to be updated. We used the CICSplex SM ISPF EUI and changed the context to our maintenance point CMAS, SCSCPCA1.

Figure 36 shows the CICSplex SM entry panel. Choosing option 1 displays a list of CMASs within the CICSplex SM environment. Current values in the Context and Scope fields are ignored when Option 0 or 1 is selected.

```

-----CICSplex System Manager-----
OPTION  ==> 1

0 PROFILE      - User Session Parameters
1 PLEXMGR      - List of Service Points
2 CPSM         - CICSplex SM

      Default Criteria for CPSM:

Context          ==> SCSPLEX
Scope            ==> SCSPLEX
Warning Record Count ==> 0           0 for no checking
Require Set      ==> NO             YES, NO
  
```

Figure 36. CICSplex SM Entry Panel

Figure 37 shows the PLEXOVER view. We placed the cursor at the maintenance point CMAS and pressed Enter. Alternatively we could have selected (S) the appropriate CMAS.

```

17JUN1998 12:31:34 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1      ALT WIN ==>
>W1 =PLEXOVER=====SC61=====*=====17JUN1998==12:31:34====PLEXMGR=====
C Context  Product  Description              Status  Server  System
-----
S SCSCPCA1 CPSM    CMAS Service Point      Active  SCSCPCA1 SC61
  SCSCPCB1 CPSM    CMAS Service Point      Active  SCSCPCB1 SC62
  SCSPLEX  CPSM    CICSplex Service Point  Active  SCSCPC** SC6*****
  SC61     PLEXMGR Target Manager          Active  PLEXMGR  SC61
  SC62     PLEXMGR Target Manager          Active  PLEXMGR  SC62
  
```

Figure 37. PLEXOVER View

Figure 38 on page 57 shows the MENU view. We issued the ADMCONFG command from the COMMAND line. Alternatively we could have selected (S) ADMCONFG.


```

17JUN1998 12:34:22 ----- INFORMATION DISPLAY -----
COMMAND ==> ADMCONFG                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =MENU=====SCSCPCA1=*=====17JUN1998==12:34:22====CPSM=====
CMD View Name          Description
-----
ANALYSIS  Real Time Analysis Operations Views
CONFIG    CMAS Configuration Operations Views
MONITOR   Monitoring Views
OPERATE   Operations Views
TOPOLOGY  Topology Operations Views
WORKLOAD  Workload Operations Views
=====
ADMSAM    RTA System Availability Monitoring Administration Views
ADMMRM    RTA MAS Resource Monitoring Administration Views
ADMAPM    RTA Analysis Point Monitoring Administration Views
ADMCONFG  CMAS Configuration Administration Views
ADMMON    Monitor Administration Views
ADMTOPOL  Topology Administration Views
ADMWLM    Workload Manager Administration Views
ADMBAS    Business Application Services Administration Views
ADMRES    Business Application Services Resource Views

```

Figure 38. MENU View

The batch run is executed from the CMAS Configuration Administration view. Figure 39 shows the ADMCONFG view. We chose BATCHREP from this view.

```

17JUN1998 12:36:06 ----- INFORMATION DISPLAY -----
COMMAND ==> BATCHREP                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =ADMCONFG=====SCSCPCA1=*=====17JUN1998==12:36:06====CPSM=====
CMD Name              Description
-----
ADMCONFG  CMAS Configuration Administration Views
BATCHREP  Batched Repository Updates
CPLEXDEF  CICSplex Definitions
CPLXCMAS  CMAS in CICSplex Definitions
CMTCMDEF  CMAS-to-CMAS Link Definitions
CMTPMDEF  CMAS-to-RMAS Link Definitions

```

Figure 39. ADMCONFG View

Figure 40 shows the BATCHREP view. We typed *submit* at the COMMAND line and pressed Enter.

```

17JUN1998 12:40:59 ----- INFORMATION DISPLAY -----
COMMAND ==> SUBMIT                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =BATCHREP=====SCSCPCA1=*=====17JUN1998==12:40:59====CPSM=====
BBMXBD15I There is no data that satisfies your request
-Related:BBMXBD23I 0 records presented by the product

```

Figure 40. BATCHREP View

Figure 41 on page 58 shows the Start Batch Run panel. We updated the Data Set Name field with the name of the data set that was created during the extract phase. This is the input to the batch run. You can either execute the job or run a check. The other fields relate to your batch environment standards. We pressed Enter to execute the BATCHREP job.

```

----- Start Batch Run for SCSCPCA1 -----
COMMAND ==>

Data Set Name   ==> CICSSYSF.EYUOUT.NEWD SW
Data Set Member ==>
Print Class     ==> A
Print Node      ==> LOCAL
Output Userid   ==> CICSRS5
Run Type        ==> EXECUTE                (CHECK or EXECUTE)

Press ENTER to Run the Job.
Type END or CANCEL to cancel without Running.

```

Figure 41. Start Batch Run Panel

Figure 42 shows the BATCHREP view and the batched repository-update facility tasks that are executing.

```

17JUN1998 12:41:30 ----- INFORMATION DISPLAY -----
COMMAND ==>                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =BATCHREP=====SCSCPCA1=*=====17JUN1998==12:41:30====CPSM=====
CMD Input  Run   Prt Print  Output  Input DSN
--- Member-- Type--- Cls Node---- User-----
              EXECUTE A   LOCAL   CICSRS5  CICSSYSF.EYUOUT.NEWD SW

```

Figure 42. BATCHREP View: Tasks Executing

We reviewed the generated output and checked for errors. Our BATCHREP job ran without errors. At this point our resource definitions, resource groups, and their associations are in the data repository.

5.3.1.4 Step 4: Create BAS Resource Descriptions

All resource definitions for the Hotel Reservation application have been applied to the data repository. The resource definitions have been placed in resource groups. We wanted to have the same structure and names in the data repository as we had in the CSD. The CSD had three groups that belonged to three lists. We associated these groups with resource descriptions that are similar to RDO lists.

To build the appropriate resource descriptions, we used the following procedure:

1. Logged on to CICSplex SM.
2. Chose option 2 from the CICSplex SM Menu. We checked that our context was the CICSplex.

- Selected the ADMBAS option to display the BAS administration view. Figure 43 on page 59 shows the ADMBAS view.
- Chose RESDESC from the view.

```

BBMDHA00  14:41:56 ----- INFORMATION DISPLAY -----
COMMAND  ===> RESDESC                                     SCROLL ===>
CURR WIN  ===> 1           ALT WIN  ===>
+W1 =ADMBAS=====SCSPLEX==SCSPLEX==18JUN1998==14:41:56====CPSM=====
CMD View Name          Description
-----
  ADMBAS      Business Application Services Administration Views
  RESDESC     Resource Descriptions
  RASINDSC    Resource Assignments in Description
  RESINDSC    Resource Groups in Description
  RASGNDEF    Resource Assignment
  RDSCPROC    Resource Description Process
  SYSRES      CICS System Resources
  SYSLINK     CICS System Links
  RASPROC     Resource Assignment Process
  RESGROUP    Resource Groups
  RESINGRP    Resources in Resource Group

```

Figure 43. ADMBAS View

Figure 44 shows the RESDESC view.

- Typed *create* on the COMMAND line and pressed Enter.

```

BBMDHA00  14:54:57 ----- INFORMATION DISPLAY -----
COMMAND  ===> create                                     SCROLL ===>
CURR WIN  ===> 1           ALT WIN  ===>
W1 =RESDESC=====SCSPLEX==SCSPLEX==18JUN1998==14:54:57====CPSM=====
BBMXBD15I There is no data that satisfies your request
-Related:BBMXBD23I   0 records presented by the product

```

Figure 44. RESDESC View

Figure 45 on page 60 shows the first page of the create action on the RESDESC view.

- Chose a name for the new RESDESC.
 We wanted a one-to-one relationship with the CSD entries, so our RESDESC name reflected the CSD list name, PAALIST. You could give your resource description a name that is perhaps more meaningful than the current CSD equivalent, or more application specific, but in this case we wanted to illustrate a one-to-one comparison between the CSD and BAS definitions. We used the default value of NO for the Valid Scope and Scope Name fields.
- The Auto Install field defaults to NO, which indicates that resources are not installed at CICS initialization. Set this field to YES if you are going to auto install resources related to this RESDESC at CICS startup.
- Specified the scope applied to associated resource groups.
 The Hotel Reservation application has to run in all AORs. The ResGroup Scope field identifies the target CICS system or group of CICS systems. We set this field to SCSC*.

```

EYUDEE01 ---- Create Resource Description for SCSPLEX Page 1 -----
COMMAND ==>
Name          ==> PAALIST
Description    ==> Hotel Reservation AORs

Valid Scope   ==> NO      Add to Topology Scope Set (YES,NO)
Scope Name    ==>         Name to be used as Scope

Model         ==>         Resource Description copy model

ResGroup Scope ==> SCSC*   Scope applied to associated ResGroups

Auto Install  ==> NO      Add Description Resources to Scope(YES,NO)

Press ENTER to create Resource Description.
Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel without creating.

```

Figure 45. RESDESC Create Action

Figure 46 displays the CICSGRP view, which identifies the CICS systems or CICS system groups that you have defined. This view is displayed when you leave the Scope Name field blank or use a generic value. If you do not have the appropriate CICS system or system group defined, you have to define one.

- 9. Selected the appropriate CICS system or CICS system group that is the target for our definitions. We pressed Enter to update the ResGroup Scope field. We pressed Enter to create our RESDESC.

```

EYUDESFO ----- List of CICSplex Resources----- Row 1 to 12
COMMAND ==>                                         Scroll ==>
Resource Group Scope name requires a specific resource.
Select a single entry, change the key, or enter END or CANCEL to terminate

Resources matching key: SCSC*

C Name      Description                               Type      Status
- - - - -
_ SCSCGLSR  4.1 AORs for non-RLS                          CSYSGRP   N/A
_ SCSCGRLS  CICS TS AORs + FOR                                RLS CSYSGRP   N/A
s SCSCG001  All AORs                                           CSYSGRP   N/A
_ SCSCG002  All TORs                                           CSYSGRP   N/A
_ SCSCPAA1  AOR1 for plex SCSPLEX                             CSYSDEF   ACTIVE
_ SCSCPAA2  AOR2 for plex SCSPLEX                             CSYSDEF   ACTIVE
_ SCSCPAA3  AOR3 for plex SCSPLEX                             CSYSDEF   ACTIVE
_ SCSCPAA4  AOR4 for plex SCSPLEX                             CSYSDEF   ACTIVE
_ SCSCPFA1  FOR for plex SCSPLEX                              CSYSDEF   ACTIVE
_ SCSCPFA1  TOR for plex SCSPLEX                              CSYSDEF   ACTIVE
_ SCSCPFA1  Second TOR for Plex SCSPLEX                       CSYSDEF   ACTIVE

```

Figure 46. RESDESC Create Action ResGroup Scope

- 10. Issued the RESGROUP command from the COMMAND line to obtain a list of our defined RESGROUPs. We added the appropriate resource group to the newly defined resource description, as shown in Figure 47 on page 61.

```

BBMDHA00 18:38:36 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =RESGROUP=====SCSPLEX==SCSPLEX==18JUN1998==18:38:36====CPSM=====
CMD NAME      Description                               Restype  ResVer  Pattern
-----
      DSWLSRU
      DSWRLSU
add NEWDSW

```

Figure 47. RESGROUP View

The ADD action associates your resource group with the resource description.

- Identified our newly created RESDESC in the Resource Description field and pressed Enter. Figure 48 shows the Associate Resource Group view.

```

EYUDEEC3 -- Associate Resource Group with Description for SCSPLEX
COMMAND ==>

Resource Group      ==> NEWDSW
Resource Description ==> PAALIST

Description         ==>

Press ENTER to add Group to Description
Enter END or CANCEL to cancel without adding

```

Figure 48. Associate RESGROUP with RESDESC

The set of definitions was ready to be installed at this point.

- Issued the RESDESC command to display the resource description view.
- Issued the MAP command. Figure 49 shows the map of RESDESC PAALIST and the associations among resources, resource groups, and descriptions.

```

EYUDESFM ----- MAP of RESDESC PAALIST ----- Row 1 of 7
COMMAND ==>
RESDESC      RASINDSC      RASGNDEF      RESGROUP      RESTYPE      RESDEF
-----
PAALIST ----- NEWDSW  +- MAPDEF  +- MAPHR1I  1
                                     |  MAPHR10  1
                                     +  MAPHR20  1
                                     -  PROGDEF  +- DSWHR1VV  1
                                     +- DSWHR2VV  1
                                     +- TRANDEF +- HR1      1
                                     +  HR2      1
----- End Of Map -----

```

Figure 49. Map of Resource Description PAALIST

- Created these resource descriptions:

- RLSLIST
- LSRLIST

- Added resource group DSWRLSU to resource description RLRLIST and resource group DSWLSRU to resource description LSRLIST by repeating the above process.

Figure 50 shows the map of RESDESC RLRLIST. Figure 51 shows the map of RESDESC LSRLIST.

```

EYUDESFM ----- MAP of RESDESC RLRLIST ----- Row 1 of 1
COMMAND ===>                                     Scroll ===>
RESDESC      RASINDSC      RASGNDEF      RESGROUP      RESTYPE      RESDEF
-----
RLRLIST ----- DSWRLSU --- FILEDEF --- HOTEL1  1
----- End Of Map -----

```

Figure 50. Map of Resource Description RLRLIST

```

EYUDESFM ----- MAP of RESDESC LSRLIST ----- Row 1 of 1
COMMAND ===>                                     Scroll ===>
RESDESC      RASINDSC      RASGNDEF      RESGROUP      RESTYPE      RESDEF
-----
LSRLIST ----- DSWLSRU --- FILEDEF --- HOTEL1  1
----- End Of Map -----

```

Figure 51. Map of Resource Description LSRLIST

5.3.1.5 Step 5: RDO Changes before Install

The resource definitions have now been migrated to the CICSplex SM data repository and are therefore ready for install. Be sure not to use the RDO process for resource definition for resources related to the application you have just migrated. Any RDO definitions, or CSD updates, will not be reflected in the data repository.

The best way to ensure that the migrated group is not updated in the CSD is to append your list to a backup list and then remove the group from your list and lock the group.

This approach prevents anyone from updating the group in the CSD and ensures that the group will not be installed from the list. If you have to move back to an RDO/CSD environment from BAS, you can unlock the group and use the backup list. Note that if changes have been implemented in the BAS environment, special regression procedures are required, as documented in Chapter 7, “Housekeeping” on page 127.

If your application definitions are spread across multiple groups and lists, the situation becomes more complex. You do not want to delete any of your definitions from your CSD groups, but you want to ensure that the resource definitions are installed and updated from one place. The easiest approach is to move to a new group all of the definitions that relate to the application you are going to migrate and lock that group. You must ensure that the resources that have been moved are thoroughly documented, to facilitate the fallback to the original group structure.

Be sure that the new group does not belong to any list and that the groups in the lists do not include definitions relating to your BAS-managed application.

5.3.1.6 Step 6: Install BAS-Controlled Application Resource Definitions

We installed the BAS-controlled application resource definitions manually using BAS panels and then changed the RESDESC and CICSSYS views so that the definitions would be installed during a cold start.

We installed the resources by issuing the RESDESC command, which displays a list of resource descriptions, and then issuing the INStall command next to the RESDESC entry associated with the resources we wanted to install. Figure 52 shows the RESDESC Install panel.

```
----- Install Resource Description for SCSPLEX -----
COMMAND ==>
Name                PAALIST                Description to be installed

Notify              ==> INACTIVE          Precheck (INACTIVE, RELEASE, FULL, NO)
State Check         ==> YES                Consistent State (YES, NO)
Force Install       ==> NO                Unconditional Install (YES, NO)

Press ENTER to Install Resource Description
Enter END or CANCEL to cancel without installing.
```

Figure 52. Install Resource Description Panel

Use the Install Resource Description panel to check the following:

- Notify
 - INACTIVE - CICS region not active?
 - RELEASE - EXEC CICS CREATE capable?
 - FULL - both of the above
 - NO - neither of the above

If Notify is set to INACTIVE, RELEASE or FULL, CICSplex SM returns a list of CICS systems where resources cannot be installed.

- State Check
 - YES - Check status of all resources before installation
 - NO - Just install the resources if possible
- Force Install
 - YES - Install even though unchanged
 - NO - Install only if changed

Resource description PAALIST was installed successfully to all of the AORs. We also installed resource descriptions RLSTLIST and LSRLIST. If you get errors during the EXEC CICS CREATE phase, you can find the related response codes in the *CICS System Programming Reference* and examine the EYULOG for the relevant messages.

During our install process, we experienced a problem installing resource description RLSTLIST. The related EYULOG message indicated that the HOTEL1 file was open, so we closed the file, attempted the install again, and it was successful.

To specify whether your definitions will be automatically installed at either a cold or warm start, you have to modify the RESDESC and CICSSYS definitions. Issue the UPDate command against the relevant resource description displayed in the RESDESC view and change the Auto Install field to YES. Figure 53 on page 64 shows the RESDESC Update panel.

```

----- Update Resource Description for SCSPLEX Page 1 -----
COMMAND ==>
Name          PAALIST
Description   ==> HOTEL RESERVATION AORs

Valid Scope   ==> NO          Add to Topology Scope Set (YES,NO)
Scope Name    ==>           Name to be used as Scope

ResGroup Scope ==> SCSCG001   Scope applied to associated ResGroups

Auto Install  ==> YES        Add Description Resources to Scope (YES,NO)

Press ENTER to update Resource Description.
Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel without updating.

```

Figure 53. Update Resource Description Panel

We also updated resource descriptions RLSLIST and LSRLIST to ensure that all of the definitions they reference are automatically installed when a target MAS connects to a CMAS. The MAS also has to be told when to install the definitions.

Our target CICS systems for resource description PAALIST were grouped in CICS system group SCSCG001. The SYSGRPC view shows the CICS system groups and the CICS systems belonging to these groups. We needed to update all CICS systems included in CICS system group SCSCG001.

To update all CICS systems in SCSCG001, we used the CICSSYS view and entered the UPDate command next to the relevant CICS system group. We scrolled down four times to get to Install Resources CICSSYS Update panel. Figure 54 on page 65 shows the last page of the CICSSYS Update panel. The following install options are available:

- **NEVER**
 - Never automatically install resources in this CICS system.
- **ALWAYS**
 - Install resources every time the MAS connects after a CICS startup.
- **COLDONLY**
 - Install resources only when the MAS connects after a CICS initial or cold start.
- **WARMONLY**
 - Install resources only when the MAS connects after a CICS warm start or emergency restart (AUTO).

The Recovery Action field indicates the action to be taken when automatic resource installation errors occur. We specified CONTINUE at this point.


```

----- Update System - BAS Attributes - for SCSPLEX -----
COMMAND ==>

System name      SCSCPAA1
Description      AOR1 for plex SCSPLEX

Install Resources ==> COLDONLY  (NEVER,ALWAYS,COLDONLY,WARMONLY)
Recovery Action  ==> CONTINUE  (CONTINUE,PROMPT,TERMINATE,IMMEDIATE,NORMAL)
Model System     ==>           System whose SYSLINKS are to be copied

Type DOWN or UP to view other System screens.
Press ENTER to update the System.
Type END or CANCEL to cancel without updating.

```

Figure 54. Update of CICSSYS SCSCPAA1

The following CICS systems were updated, due to their inclusion in CICS system group SCSCG001:

- SCSCPAA1
- SCSCPAA2
- SCSCPAA3
- SCSCPAA4
- SCSCPFA1

Notice that there is no need to update definitions for TORs because we use dynamic transaction routing.

Our definitions were dynamically installed, and a trial run of our Hotel Reservation application was successful. The resources were also automatically installed during both a cold and an initial start.

There are few things you should understand regarding the resource installation options in BAS:

- CICS initialization takes longer because resources are installed during the program list table (PLT) phase.
- EYUPARMS has parameters (MASPLTWAIT and MASINITTIME) that tell CICSplex SM to suspend all PLT processing until the MAS is fully initialized and connected to CMAS and to identify the maximum time to wait. Valid values for MASPLTWAIT are YES and NO. If you specify YES, you can additionally supply a value for MASINITTIME as the number of minutes (from 5 to 59) that CICSplex SM should wait for the MAS to initialize. The default value is 10 minutes.

If you are using BAS to automatically install resources during CICS initialization, you have to specify MASPLTWAIT(YES) (see 6.2.1, “Automatic Installation” on page 98).

- COLDONLY is the preferred option. This option ensures that BAS does not duplicate the resource installation process performed during a warm or emergency start, where resources are installed using data in the CICS Global Catalog. If WARMONLY or ALWAYS is used, resources that have

been installed using data in the CICS Global Catalog will be deleted and then reinstalled by BAS during PLT phase 2 processing.

At this stage we have a similar data repository structure to RDO/CSD. Figure 55 shows the CICSplex SM *as is* resource definition structure, which identifies the CICS systems, referred to as *target scopes*, into which the resources will be installed, and the resource definition, resource group, and resource description relationship.

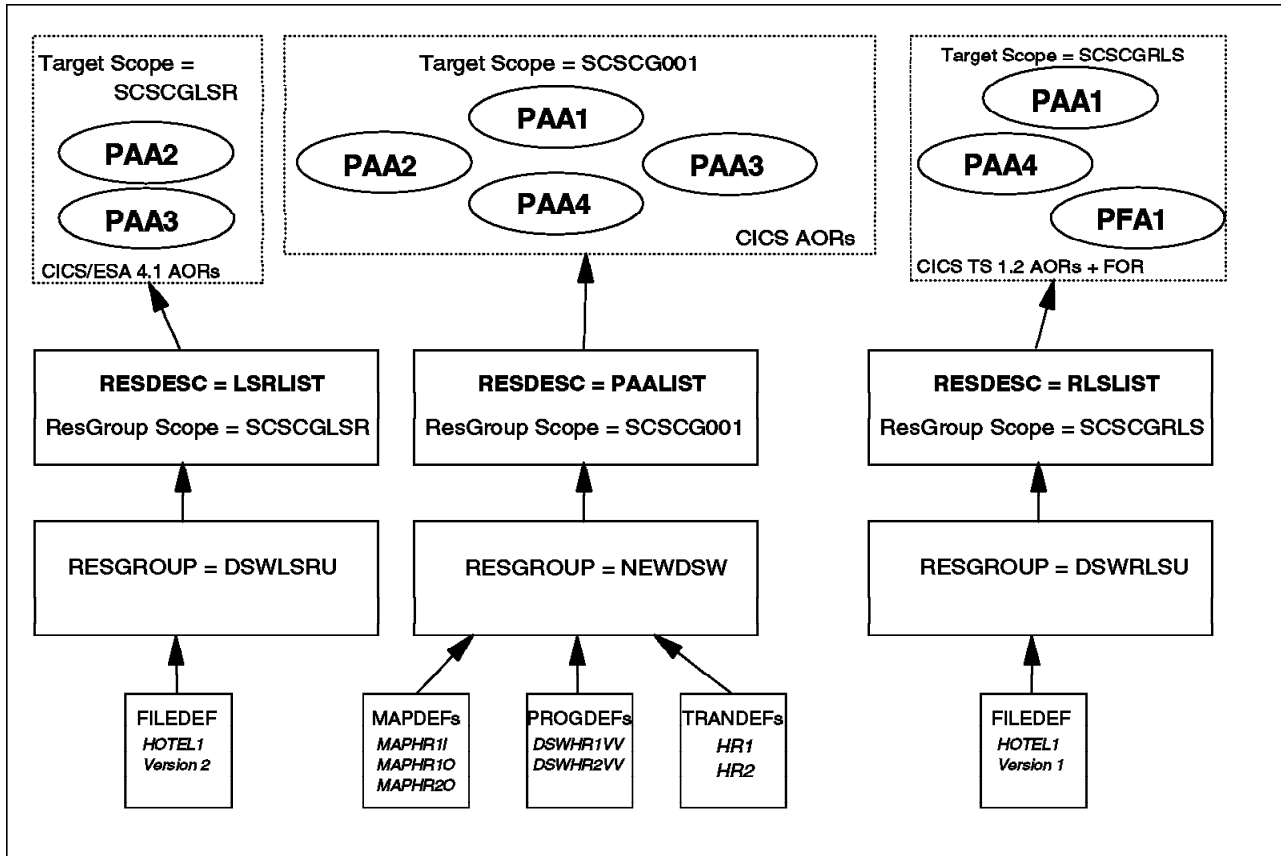


Figure 55. As Is Resource Definition Structure

The RESGROUP's role is similar to that of a CSD group. The RESDESC's role is similar to that of a CSD list. At this point you can fall back to a CSD-based environment if required. This process is discussed in detail in Chapter 7, "Housekeeping" on page 127.

5.3.2 Implement Full BAS-Controlled Application

Our aim was to have the application definitions installed under one resource description to all the CICS systems needed for our Hotel Reservation application. We also wanted to have only one definition for the remote and local resources. We created a resource description, HOTELRES, that had a logical scope of HOTELRES. All of our application definitions were under this scope. We created a resource group, HOTELRES, and all definitions were added to this group. We created resource assignments (RASGNDEFs) for every resource. The resource assignment related the resource definitions (as part of a resource group) to the target and related CICS systems and enabled us to override parameters if required. Figure 56 on page 67 shows the CICSplex SM BAS resource definition structure. The RASGNDEF creation process is described in 5.3.2.4, "Step 4:

Create a Resource Assignment” on page 70. Figure 67 on page 74 displays the RASGNDEF view.

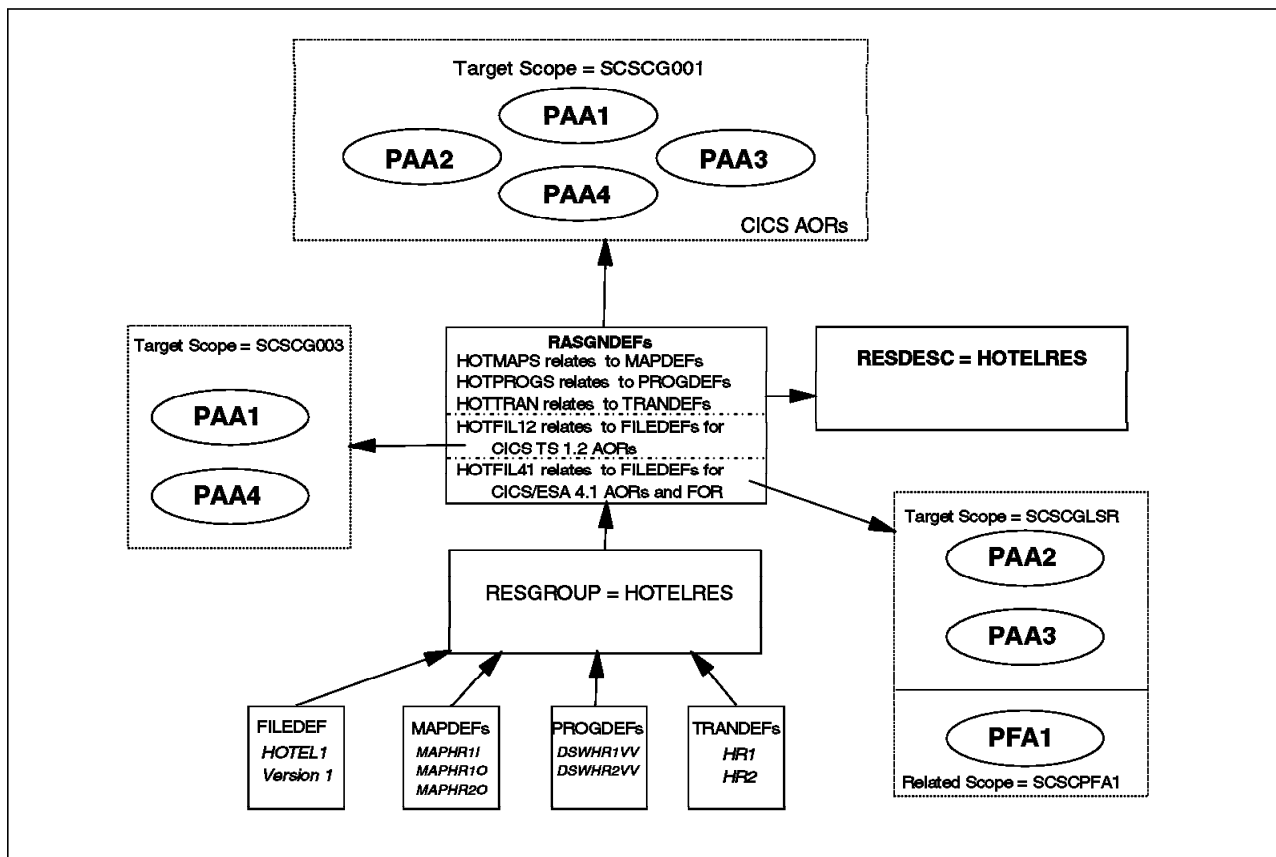


Figure 56. Full BAS Resource Definition Structure

5.3.2.1 Step 1: Create a Resource Description

From the RESDESC view, we issued the CREate command. Figure 57 on page 68 shows the RESDESC Create view. Complete the panel with the name of your resource description. Update the Valid Scope field with YES and give the scope a name. You use this scope to keep your application as one entity. ResGroup Scope is not used because resources are associated with the resource description within a resource assignment definition.

```

----- Create Resource Description for SCSPLEX Page 1 -----
COMMAND ==>
Name          ==> HOTELRES
Description   ==> HOTEL RESERVATION APPLICATION

Valid Scope   ==> YES          Add to Topology Scope Set (YES,NO)
Scope Name    ==> HOTELRES     Name to be used as Scope

Model         ==>              Resource Description copy model

ResGroup Scope ==>              Scope applied to associated ResGroups

Auto Install  ==> YES          Add Description Resources to Scope (YES,NO)

Press ENTER to create Resource Description.
Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel without creating.

```

Figure 57. Creation of RESDESC HOTELRES

5.3.2.2 Step 2: Create a Resource Group

From the RESGROUP view, we issued the CREate command. Figure 58 shows the RESGROUP Create view. We completed the panel with the name of our resource group. We pressed Enter to define our RESGROUP. At this point RESGROUP HOTELRES was empty. We added resource definitions to it later.

```

----- Create Resgroup Definition for SCSPLEX -----
COMMAND ==>

Name          ==> HOTELRES
Description   ==> HOTEL RESERVATION RESOURCES

Model Group   ==>

Copy Resources ==> NO          (ASSOCIATIONS, MEMBERS, NO)

Press ENTER to create RESGROUP.
Enter END or CANCEL to cancel without creating.

```

Figure 58. Creation of RESGROUP HOTELRES

Our definitions were associated with three resource groups:

- NEWDSW
- DSWLSRU
- DSWRLSU

At this point we removed the associations between the definitions and resource groups, which ensured that definitions were not related to any group and therefore would not be installed dynamically, or automatically during CICS startup. Figure 59 on page 69 shows some of the resources in RESGROUP NEWDSW. From the RESINGRP view, we issued the line command REMove against the resources we wanted to remove and pressed Enter.

```

22JUN1998 17:01:15 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =RESINGRP=====SCSPLEX==SCSPLEX==22JUN1998==17:01:15====CPSM=====
CMD Resource Resource Ver Restype
--- Group--- Name-----
REM NEWDSW  DSWHR2VV  1  PROGDEF
REM NEWDSW  HR1      1  TRANDEF
REM NEWDSW  HR2      1  TRANDEF
REM NEWDSW  MAPHR1I  1  MAPDEF
REM NEWDSW  MAPHR1O  1  MAPDEF
REM NEWDSW  MAPHR2O  1  MAPDEF

```

Figure 59. RESINGRP View

5.3.2.3 Step 3: Update RESDESCs with Auto Install Option NO

Figure 60 shows the update of RESDESC PAALIST. From the RESDESC view, we issued line command UPDate. We updated the Auto Install option to NO and pressed Enter.

The RESDESCs will not be auto installed at CICS startup. The following RESDESCs were updated: PAALIST, RLSLIST, and LSRLIST.

```

----- Update Resource Description for SCSPLEX Page 1 -----
COMMAND ==>
Name          PAALIST
Description   ==> HOTEL RESERVATION AORs

Valid Scope   ==> NO          Add to Topology Scope Set (YES,NO)
Scope Name    ==>           Name to be used as Scope

ResGroup Scope ==> SCSCG001  Scope applied to associated ResGroups

Auto Install  ==> NO          Add Description Resources to Scope (YES,NO)

Press ENTER to update Resource Description.
Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel without updating.

```

Figure 60. Update of RESDESC PAALIST

We added the following resource definitions to RESGROUP HOTELRES:

- FILEDEF HOTEL1 VERSION 1
- MAPDEF MAPHR1I VERSION 1
- MAPDEF MAPHR1O VERSION 1
- MAPDEF MAPHR2O VERSION 1
- PROGDEF DSWHR1VV VERSION 1
- PROGDEF DSWHR2VV VERSION 1
- TRANDEF HR1 VERSION 1
- TRANDEF HR2 VERSION 1

We also had a FILEDEF HOTEL1 version 2 which was used in the non-RLS CICS systems. We decided that we would use one definition for the local and remote definitions, so we used FILEDEF HOTEL1 version 1 in all AORs and the FOR.

We added our resource definitions to the new RESGROUP. Figure 61 shows the FILEDEF view. From the FILEDEF view we issued line command ADD against the relevant FILEDEFs. Figure 62 shows the FILEDEF Associate Resource panel. We updated the Resource Group field with our RESGROUP name and pressed Enter to associate our FILEDEF with the RESGROUP. We performed this same process for TRANDEFs, MAPDEFs, and PROGDEFs.

```

22JUN1998 17:13:54 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =FILEDEF=====SCSPLEX==SCSPLEX==22JUN1998==17:13:54====CPSM=====
CMD NAME      Ver      Created      Changed      Description
-----
ADD HOTEL1    1    6/17/98 14:15  6/19/98 14:12
HOTEL1        2    6/17/98 14:25  6/17/98 14:25

```

Figure 61. FILEDEF View

```

----- Associate Resource to Resource Group for SCSPLEX -
COMMAND ==>

Resource Group ==> HOTELRES  Group or Generic

Resource Type   ==> FILEDEF   Resource Type
ResourceName    ==> HOTEL1    Resource or Generic
Resource Version ==> 1        Resource Version

Press ENTER to add Resource to Group.
Type END or CANCEL to cancel without adding.

```

Figure 62. Adding FILEDEF HOTEL1 to RESGROUP HOTELRES

5.3.2.4 Step 4: Create a Resource Assignment

We associated the resources to our Hotel Reservation application through a RASGNDEF. You need at least one RASGNDEF for every resource type you have. Resource assignment selects the resources from a specified resource group according to your filter criteria, and you can modify the attributes of the resources with override values. The target scope is also given here. We had four resource types:

- FILEDEF
- MAPDEF
- PROGDEF
- TRANDEF

The MAPDEF, PROGDEF, and TRANDEF resources had only local definitions defined. The FILEDEF was used for both local and remote. We used all the definitions from our group, so filter criteria were not needed to establish a subset of definitions from the group. We used override parameters to modify the FILEDEF to establish a remote definition.

Figure 63 on page 71 shows the RASGNDEF Create panel. We followed these steps to create a resource assignment (RASGNDEF):

1. From the RASGNDEF view, issued the CREate command.
2. Assigned a RASGNDEF name.
3. Updated the Target Scope with the CICS System or System Group name to associate our TRANDEFs with the Target Scope specified.
4. Identified a RESGROUP name containing our TRANDEFs.
5. Typed TRANDEF in the Resource Type field.
6. Pressed Enter to create a RASGNDEF for TRANDEFs.

```

----- Create Resource Assignment for SCSPLEX Page 1 -----
COMMAND ==>>

Name           ==>> HOTTRAN
Description    ==>> HOTEL RESERVATION TRANSACTIONS

Target Scope   ==>> SCSCG001   CICS System or System Group
Related Scope ==>>             CICS System or System Group

Resource Group ==>> HOTELRES   RESGROUP Containing Definitions
Resource Type  ==>> TRANDEF   Resource Definition Type

Usage          ==>> LOCAL     Assignment Type (LOCAL, REMOTE)
Mode           ==>> N/A       Usage Qualifier by Resource Type
Referenced Assign ==>>       Resource Assignment Definition name
Override       ==>> NONE     Scope of Override (TARGET, RELATED, BOTH,
                               NONE)

Press ENTER to create Resource Assignment.

```

Figure 63. RASGNDEF Create View for TRANDEFs

We also created resource assignments for MAPDEFs and PROGDEFs. The target scope and resource group were the same as those used for the TRANDEFs.

We created a resource assignment for the FILEDEFs in CICS TS AORs. This resource assignment was local, and the target scope was CICS system group SCSCG003 containing PAA1 and PAA4.

Figure 64 on page 72 shows the RASGNDEF Create panel for CICS TS AORs. We followed these steps to create a RASGNDEF by using an existing model:

1. From the RASGNDEF view, issued the CREate line command against any of the RASGNDEFs.
2. Assigned a RASGNDEF name.
3. Updated the Target Scope with the CICS System or System Group name with which we wanted our FILEDEFs to be associated.
4. Identified a RESGROUP name containing our FILEDEFs.
5. Typed FILEDEF in the Resource Type field.
6. Pressed Enter to create a RASGNDEF for CICS TS AOR FILEDEFs.

```

----- Create Resource Assignment for SCSPLEX Page 1 -----
COMMAND ==>

Name           ==> HOTFIL12
Description    ==> HOTEL RESERVATION FILE 1.2 AOR

Target Scope   ==> SCSCG003   CICS System or System Group
Related Scope  ==>           CICS System or System Group

Resource Group ==> HOTELRES   RESGROUP Containing Definitions
Resource Type  ==> FILEDEF   Resource Definition Type

Usage          ==> LOCAL     Assignment Type (LOCAL, REMOTE)
Mode           ==> N/A      Usage Qualifier by Resource Type
Referenced Assign ==>      Resource Assignment Definition name
Override       ==> NONE     Scope of Override (TARGET, RELATED, BOTH,
                           NONE)

Press ENTER to create Resource Assignment.

```

Figure 64. RASGNDEF Create Panel for FILEDEFs in CICS TS AORs

We created a resource assignment for the FILEDEFs in the CICS/ESA 4.1 AORs (PAA2 and PAA3) and the CICS TS FOR (PFA1). This resource assignment was local in the FOR and remote in the AORs.

Figure 65 on page 73 shows the first page of the RASGNDEF Create panel for a remote FILEDEF. To create remote RASGNDEFs, we followed these steps:

1. From the RASGNDEF view, we issued the CREate line command against any of the RASGNDEFs.
2. Assigned a RASGNDEF name.
3. Updated the Target Scope field with the CICS System or System Group name with which we wanted our remote FILEDEFs to be associated.
4. Updated the Related Scope field with the CICS System or System Group name with which we wanted the local FILEDEFs to be associated.
5. Identified a RESGROUP name containing our FILEDEFs.
6. Typed FILEDEF in the Resource Type field.
7. Typed REMOTE in the Usage field to use these definitions for local and remote FILEDEFs.
8. Updated the Override field with the desired scope. We entered TARGET because we wanted to override the remote FILEDEFs.
9. Pressed PF8 to display the second page of the RASGNDEF Create panel.


```

----- Create Resource Assignment for SCSPLEX Page 1 -----
COMMAND ==>

Name           ==> HOTFIL41
Description    ==> HOT RES FILE AOR 4.1 FOR 1.2

Target Scope   ==> SCSCGLSR   CICS System or System Group
Related Scope  ==> SCSCPFA1   CICS System or System Group

Resource Group ==> HOTELRES   RESGROUP Containing Definitions
Resource Type  ==> FILEDEF   Resource Definition Type

Usage          ==> REMOTE    Assignment Type (LOCAL, REMOTE)
Mode           ==> N/A       Usage Qualifier by Resource Type
Referenced Assign ==>       Resource Assignment Definition name
Override       ==> TARGET    Scope of Override (TARGET, RELATED, BOTH,
                               NONE)

Press ENTER to create Resource Assignment.

```

Figure 65. First Page of RASGNDEF Create Panel for Local and Remote FILEDEFs

Figure 66 on page 74 shows the second page of the RASGNDEF Create panel for local and remote FILEDEFs with an option to use filter strings and/or overrides. To process a RASGNDEF request for FILEDEFs by using filter strings, you specify a filter string to select certain FILEDEFs from the given resource group. We selected all FILEDEFs, so we did not use a filter string.

To process a RASGNDEF request for FILEDEFs by using overrides, we:

1. Provided the override attributes for the FILEDEFs in the override scope. We overrode the remote FILEDEFs because our override scope was TARGET.
2. Pressed Enter to create a RASGNDEF for local and remote FILEDEFs in the specified scopes.

```

----- Create Resource Assignment for SCSPLEX Page 2 -----
COMMAND ==>
  Name                HOTFIL41
Filter string expression: (Type FILTER to list columns)
==>
==>
==>
==>
==>
==>
==>
==>
==>
==>
Override string expression: (Type MODIFY to list modifiable columns)
==> RLSACCESS=NO,LSRPOOLID=3,READINTEGRITY=UNCOMMITTED,
==> KEYLENGTH=16.
==>
==>
Press ENTER to create Resource Assignment.
Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel without creating.

```

Figure 66. Second Page of RASGNDEF Create Panel with Override Attributes for Remote FILEDEFs

All of the resource assignments were created, but they were not associated with a resource description. We added all of the RASGNDEFs to our HOTELRES resource description.

Figure 67 shows the RASGNDEF view. To add the RASGNDEFs to our RESDESC we:

1. Issued the line command ADD against all of the RASGNDEFs.
2. Pressed Enter to set the RASGNDEF Associate Assignment panel.

```

23JUN1998 14:55:58 ----- INFORMATION DISPLAY -----
COMMAND ==>                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =RASGNDEF=====SCSPLEX==SCSPLEX==23JUN1998==14:55:58====CPSM=====
CMD Name      ResGroup ResType  Target  Usage Related  Description
-----
HOTFIL12 HOTELRES FILEDEF  SCSCG003 LOCAL      HOTEL RESERVATION
HOTFIL41 HOTELRES FILEDEF  SCSCGLSR REMOT SCSCPFA1 HOT RES FILE AOR 4.1
HOTMAPS HOTELRES MAPDEF  SCSCG001 LOCAL      HOTEL RESERVATION
HOTPROGS HOTELRES PROFDEF SCSCG001 LOCAL      HOTEL RESERVATION
ADD HOTTRAN HOTELRES TRANDEF SCSCG001 LOCAL      HOTEL RESERVATION

```

Figure 67. RASGNDEF View

Figure 68 on page 75 shows the RASGNDEF Associate Assignment panel.

3. Entered the RESDESC name in the Description Name field. We did not have to complete the other fields because we supplied them in the RASGNDEF Create view.
4. Pressed Enter to associate the RASGNDEF with the specified RESDESC.

```

----- Associate Assignment to Description for SCSPLEX Page
COMMAND ==>
Assignment Name   ==> HOTTRAN

Description Name  ==> HOTELRES

Description       ==> ASSIGN TRANDEFS TO HOTELRESERV

Group Name       ==>

Target Scope     ==>

Related Scope    ==>

Press ENTER to add Assignment to Description
Enter END or CANCEL to cancel without adding

```

Figure 68. RASGNDEF Associate Assignment Panel

Figure 69 shows the map of RESDESC HOTELRES. To display a MAP of the RESDESC resources, we followed these steps:

1. From the RESDESC view, issued the line command MAP against our RESDESC.
2. Pressed Enter to display the RESDESC map panel.

```

----- MAP of RESDESC HOTELRES ----- Row 1 of 9
COMMAND ==>                               Scroll ==>
RESDESC   RASINDSC   RASGNDEF   RESGROUP   RESTYPE   RESDEF
-----
HOTELRES  --- <-----> +- HOTFIL12 --- HOTELRES --- FILEDEF --- HOTEL1  1
                | - HOTFIL41 --- HOTELRES --- FILEDEF --- HOTEL1  1
                | - HOTMAPS  --- HOTELRES --- MAPDEF  +- MAPHR1I  1
                |                | - MAPHR10  1
                |                +- MAPHR20  1
                | - HOTPROGS --- HOTELRES --- PROGDEF +- DSWHR1VV  1
                |                +- DSWHR2VV  1
                +- HOTTRAN  --- HOTELRES --- TRANDEF +- HR1    1
                |                +- HR2    1

```

Figure 69. Map Panel of RESDESC HOTELRES

All of the definitions under resource description HOTELRES were installed dynamically by entering the line command INStall in the RESDESC view. In 5.3.1.5, “Step 5: RDO Changes before Install” on page 62 we explain what you have to do with your RDO definitions, if they still exist. In 5.3.1.6, “Step 6: Install BAS-Controlled Application Resource Definitions” on page 63 we explain the install process in detail. You have to check the CICSSYS view for the autoinstall and recovery options.

Figure 70 on page 76 shows the RESDESC Install panel. To install all resources associated with a RESDESC we:

1. From the RESDESC view, issued the line command INStall against our RESDESC.
2. Pressed Enter to get all resource definitions installed for our application.

```

----- Install Resource Description for SCSPLEX -----
COMMAND ==>
Name                HOTELRES          Description to be installed

Notify              ==> INACTIVE        Precheck (INACTIVE, RELEASE, FULL, NO)
State Check         ==> YES              Consistent State (YES, NO)
Force Install       ==> NO              Unconditional Install (YES, NO)

Press ENTER to Install Resource Description
Enter END or CANCEL to cancel without installing.

```

Figure 70. RESDESC Install Panel

5.4 Connections, Sessions, and SYSLINKs

First, we migrated our connection and session definitions from the CSD to BAS just as they were. We then started to use SYSLINKs, but every link had unique connections and sessions. At the last stage we used SYSLINKs and utilized only one pair of connection and session definitions for all the links.

You do not have to use the staged approach to migration of connection and session definitions the way we did. You can migrate to use of SYSLINKs directly without the *as is* migration step for connections and sessions.

Our CSD environment had the following groups and lists:

- The definitions from AOR to TOR were in group ATA0 and list PAALIST.
- The definitions from AOR to FOR were in group AFA0 and list PAALIST.
- The definitions from TOR to AOR were in group TAA0 and list PTALIST.
- The definitions from FOR to AOR were in group FAA0 and list PFALIST.

Figure 71 on page 77 shows the CONNECT view of the connections between our CICS systems.

Conn ID--	CICS System--	Conn Type	Netname -----	Connect Status----	Service Status----	Pending Status----
PAA1	SCSCPFA1	MRO	SCSCPAA1	ACQUIRED	INSERVICE	NOTPENDING
PAA1	SCSCPFA1	MRO	SCSCPAA1	ACQUIRED	INSERVICE	NOTPENDING
PAA1	SCSCPFA1	MRO	SCSCPAA1	ACQUIRED	INSERVICE	NOTPENDING
PAA2	SCSCPFA1	MRO	SCSCPAA2	ACQUIRED	INSERVICE	NOTPENDING
PAA2	SCSCPFA1	MRO	SCSCPAA2	ACQUIRED	INSERVICE	NOTPENDING
PAA2	SCSCPFA1	MRO	SCSCPAA2	ACQUIRED	INSERVICE	NOTPENDING
PAA3	SCSCPFA1	MRO	SCSCPAA3	ACQUIRED	INSERVICE	NOTPENDING
PAA3	SCSCPFA1	MRO	SCSCPAA3	ACQUIRED	INSERVICE	NOTPENDING
PAA3	SCSCPFA1	MRO	SCSCPAA3	ACQUIRED	INSERVICE	NOTPENDING
PAA4	SCSCPFA1	MRO	SCSCPAA4	ACQUIRED	INSERVICE	NOTPENDING
PAA4	SCSCPFA1	MRO	SCSCPAA4	ACQUIRED	INSERVICE	NOTPENDING
PAA4	SCSCPFA1	MRO	SCSCPAA4	ACQUIRED	INSERVICE	NOTPENDING
PFA1	SCSCPAA1	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTPENDING
PFA1	SCSCPAA2	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTAPPLIC
PFA1	SCSCPAA3	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTAPPLIC
PFA1	SCSCPAA4	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTPENDING
PTA1	SCSCPAA1	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTPENDING
PTA1	SCSCPAA2	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTAPPLIC
PTA1	SCSCPAA3	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTAPPLIC
PTA1	SCSCPAA4	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTPENDING
PTA2	SCSCPAA1	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTPENDING
PTA2	SCSCPAA2	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTAPPLIC
PTA2	SCSCPAA3	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTAPPLIC
PTA2	SCSCPAA4	MRO	SCSCPFA1	ACQUIRED	INSERVICE	NOTPENDING

Figure 71. CONNECT View

5.4.1 As Is Migration for Connections and Sessions

We extracted the definitions from the CSD by group and created BAS resource groups with the same name as the CSD group. We then created resource descriptions that had the same name as the CSD list and added the resource groups to the resource descriptions.

5.4.1.1 Step 1: EXTRACT

We used DFHCSDUP to extract the connection and session definitions from the CSD. See 5.3.1.1, "Step 1: EXTRACT Application Resource Definitions from the CSD" on page 44 for more information about the EXTRACT job.

The connection and session definitions for the FOR (PFA1) were in group FAA0. Figure 72 shows the SYSIN and EYUIN statements from the DFHCSDUP EXTRACT JCL.

```
//SYSIN DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(FAA0)
/*
//EYUIN DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
CONNECTION(*)
SESSIONS(*)
/*
```

Figure 72. SYSIN and EYUIN Statements from the EXTRACT JCL for the FOR Connections and Sessions

The connection and session definitions for the TORs (PTA1 and PTA2) were in group TAA0. Figure 73 on page 78 shows the SYSIN and EYUIN statements from the DFHCSDUP EXTRACT JCL.

```
//SYSIN DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(TAA0)
/*
//EYUIN DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
CONNECTION(*)
SESSIONS(*)
/*
```

Figure 73. SYSIN and EYUIN Statements from the EXTRACT JCL for the TOR Connections and Sessions

The connection and session definitions from the AORs (PAA1, 2, 3, and 4) to the FOR were in group AFA0. Figure 74 shows the SYSIN and EYUIN statements from the DFHCSDUP EXTRACT JCL.

```
//SYSIN DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(AFA0)
/*
//EYUIN DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
CONNECTION(*)
SESSIONS(*)
/*
```

Figure 74. SYSIN and EYUIN Statements from the EXTRACT JCL for AOR to FOR Connections and Sessions

The connection and session definitions from the AORs (PAA1, 2, 3 and 4) to the TORs were in group ATA0. Figure 75 shows the SYSIN and EYUIN statements from the DFHCSDUP EXTRACT JCL.

```
//SYSIN DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS GROUP(ATA0)
/*
//EYUIN DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
CONNECTION(*)
SESSIONS(*)
/*
```

Figure 75. SYSIN and EYUIN Statements from the EXTRACT JCL for AOR to TOR Connections and Sessions

Figure 76 on page 79 shows the output created by the EXTRACT job for the group, connection, and session definitions from GROUP AFA0. We manually added the CONTEXT SCSPLEX statement.

```

CONTEXT SCSPLEX;
/*
  RESGROUP(CSDGROUP)
  RESINGRP(CSDGROUP)
  CONNECTION(*)
  SESSIONS(*)
*/
CREATE RESGROUP      RESGROUP(AFA0)
                    DESCRIPTION( )
                    ;
CREATE CONNDEF      NAME(PFA1)
/*EYUBU0010W - Field value longer than 30 characters - Truncated */
/*  "CONNECTION FROM AOR TO FOR IN SYSTEM A (COMMON)" */
                    DESCRIPTION(CONNECTION FROM AOR TO FOR IN )
                    NETNAME(SCSCPFA1)
                    INDSYS( )
                    REMOTESYSTEM( )
                    REMOTENAME( )
                    REMOTESYSNET( )
                    ACCESSMETHOD(XM)
                    PROTOCOL( )
                    CONNTYPE( )
                    SINGLESESS(NO)
                    DATASTREAM(USER)
                    RECORDFORMAT(U)
                    QUEUELIMIT(NO)
                    MAXQTIME(NO)
                    AUTOCONNECT(YES)
                    INSERVICE(YES)
                    SECURITYNAME( )
                    ATTACHSEC(LOCAL)
                    BINDSECURITY(NO)
                    USEDFLTUSER(NO)
                    PSRECOVERY( )
                    XLNACTION(KEEP)
                    RESGROUP(AFA0)
                    ;

```

Figure 76 (Part 1 of 2). Modified EXTRACT Run Output for GROUP AFA0 Definitions

```

CREATE SESSDEF          NAME(PFA1)
/*EYUBU0010W - Field value longer than 30 characters - Truncated */
/* "SESSIONS FROM AOR TO FOR IN SYSTEM A" */
DESCRIPTION(SESSIONS FROM AOR TO FOR IN SY)
CONNECTION(PFA1)
  SESSNAME( )
  NETNAMEQ( )
  MODENAME( )
  PROTOCOL(LU61)
  MAXINGRP(0)
  MAXCTWIN(0)
  RECEIVEPFX(Z1)
RECEIVECOUNT(99)
  SENDPFX(Y1)
  SENDCOUNT(99)
  SENDSIZE(4096)
RECEIVESIZE(4096)
SESSPRIORITY(0)
  USERID( )
AUTOCONNECT(YES)
BUILDCHAIN(YES)
USERAREALEN(0)
  IOAREALEN(4096)
  IOAREALEN2(4096)
  RELREQ(NO)
  DISCREQ(NO)
  NEPCCLASS(0)
RECOVOPTION(SYSDEFAULT)
  RESGROUP(AFA0)
;

```

Figure 76 (Part 2 of 2). Modified EXTRACT Run Output for GROUP AFA0 Definitions

5.4.1.2 Step 2: Back Up the Data Repository

Before you make any major updates to the data repository, ensure that a backup is performed. 5.3.1.2, “Step 2: Back up the Data Repository” on page 54 has the sample JCL to REPRO your data repository.

5.4.1.3 Step 3: Update the Data Repository

We used the following four files with CREATE commands as input to the batch run:

- CICSSYSF.EYUOUT.AFA0
- CICSSYSF.EYUOUT.ATA0
- CICSSYSF.EYUOUT.FAA0
- CICSSYSF.EYUOUT.TAA0

We updated all of these files with the CONTEXT SCSPLEX statement and ran the BATCHREP job, using them as input. See 5.3.1.3, “Step 3: Update the Data Repository” on page 55 for detailed instructions on how to use the batched repository-update facility. As an example, Figure 77 on page 81 shows the BATCHREP submit panel for the CICSSYSF.EYUOUT.AFA0 input data set. To execute the batched repository-update facility run we:

1. Changed the CONTEXT to our maintenance point CMAS.

2. Issued the BATCHREP command.
3. From the BATCHREP view, issued the SUB command.
4. Updated the Data Set Name field with the output name of our EXTRACT job as it was input to the batched repository-update facility. The values in the other fields of the BATCHREP submit panel depend on your batch environment.
5. Pressed Enter to execute the batch run.

```

----- Start Batch Run for SCSCPCA1 -----
COMMAND ==>

Data Set Name   ==> 'CICSSYSF.EYUOUT.AFA0'

Data Set Member ==>

Print Class     ==> A

Print Node      ==> LOCAL

Output Userid   ==> CICSRS5

Run Type        ==> EXECUTE                (CHECK or EXECUTE)

Press ENTER to Run the Job.
Type END or CANCEL to cancel without Running.

```

Figure 77. Start Batch Run Panel

We created the following resources:

- RESGROUP AFA0 (Figure 78)
- RESGROUP ATA0 (Figure 79 on page 82)
- RESGROUP FAA0 (Figure 80 on page 82)
- RESGROUP TAA0 (Figure 81 on page 82)

To map the resources associated with a RESGROUP we:

1. Issued the RESGROUP command.
2. From the RESGROUP view, issued the line command MAP against the newly created groups.
3. Pressed Enter to display the RESGROUP and its associated resources.

```

----- MAP of RESGROUP AFA0 ---
COMMAND ==>
RESGROUP      RESTYPE      RESDEF
-----
AFA0          +- CONNDEF  --- PFA1      1
              +- SESSDEF  --- PFA1      1
-----
----- End Of Map -

```

Figure 78. Map of RESGROUP AFA0

```

----- MAP of RESGROUP ATAO
COMMAND ==>
RESGROUP      RESTYPE      RESDEF
-----
ATAO      +- CONNDEF  +- PTA1      1
          |           +- PTA2      1
          +- SESSDEF  +- PTA1      1
                      +- PTA2      1

```

Figure 79. Map of RESGROUP ATAO

```

----- MAP of RESGROUP FAAO --
COMMAND ==>
RESGROUP      RESTYPE      RESDEF
-----
FAAO      +- CONNDEF  +- PAA1      2
          |           - PAA2      2
          |           - PAA3      2
          |           +- PAA4      2
          +- SESSDEF  +- PAA1      2
                      - PAA2      2
                      - PAA3      2
                      +- PAA4      2
----- End Of Map

```

Figure 80. Map of RESGROUP FAAO

```

----- MAP of RESGROUP TAAO ---
COMMAND ==>
RESGROUP      RESTYPE      RESDEF
-----
TAAO      +- CONNDEF  +- PAA1      1
          |           - PAA2      1
          |           - PAA3      1
          |           +- PAA4      1
          +- SESSDEF  +- PAA1      1
                      - PAA2      1
                      - PAA3      1
                      +- PAA4      1
----- End Of Map -

```

Figure 81. Map of RESGROUP TAAO

5.4.1.4 Step 4: Create BAS Resource Descriptions

We applied all connection and session definitions to the data repository and associated them with resource groups. We wanted to have the same structure and names that we had in the CSD. In the CSD we had four groups that belonged to three lists. We created three resource descriptions that were similar to the RDO lists. We associated the resource groups with the resource descriptions.

Figure 82 on page 83 shows the RESDESC Create panel. To create resource descriptions we followed these steps:

1. Issued the RESDESC command.
2. From the RESDESC view, issued the CRE command.
3. Updated the panel with the name of the RESDESC and resource group scope. We used the list name PAALIST which was normally installed to all of the AORs, so our ResGroup Scope was a CICS system group, SCSCG003, which included all of the AORs.
4. Pressed Enter to create our RESDESC.

We also created resource descriptions for PFALIST and PTALIST.

```

----- Create Resource Description for SCSPLEX Page 1 -----
COMMAND ===>
Name          ===> PAALIST
Description   ===> HOTEL RESERVATION AORs

Valid Scope   ===> NO          Add to Topology Scope Set (YES,NO)
Scope Name    ===>           Name to be used as Scope

Model         ===>           Resource Description copy model

ResGroup Scope ===> SCSCG001   Scope applied to associated ResGroups

Auto Install  ===> NO          Add Description Resources to Scope (YES,NO)

Press ENTER to create Resource Description.
Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel without creating.

```

Figure 82. RESDESC Create Panel

We added the following resource groups to the following resource descriptions:

- RESGROUPs AFA0 and ATA0 to RESDESC PAALIST
- RESGROUP FAA0 to RESDESC PFALIST
- RESGROUP TAA0 to RESDESC PTALIST

Figure 83 on page 84 shows the RESGROUP Associate Resource panel. To add resource groups we followed these steps:

1. Issued the RESGROUP command.
2. From the RESGROUP view, issued the line command ADD for the valid RESGROUP.
3. Updated the Resource Description field with the appropriate RESDESC name.
4. Pressed Enter to associate a RESGROUP with a RESDESC.

We repeated steps 1 through 4 for the other RESGROUPs.

```
----- Associate Resource Group with Description for SCSPLEX ---  
COMMAND ==>  
  
Resource Group      ==> AFAO  
Resource Description ==> PAALIST  
  
Description        ==> AOR TO FOR CONNS AND SESSIONS  
  
Press ENTER to add Group to Description  
Enter END or CANCEL to cancel without adding
```

Figure 83. RESGROUP Associate Resource Panel

5.4.1.5 Step 5: RDO Changes before Install

Your CONNDEFs and SESSDEFs are ready to be installed, but as with any migrated definition, take care to ensure that the resources are installed from the BAS data repository by removing the definitions from the CSD or excluding the group from the GRPLIST. See 5.3.1.5, “Step 5: RDO Changes before Install” on page 62 for some procedures for handling the CSD before installing definitions from BAS. If for some reason you do not delete your CSD definitions, you must ensure that your connection is put out of service and released and that the IRC communication is closed.

5.4.1.6 Step 6: Install BAS-Controlled Connection and Session Definitions

We installed the definitions dynamically from BAS through the RESDESCs. We also updated the RESDESC and CICSSYS views so that the connections and sessions would be installed at cold or initial start. Review 5.3.1.6, “Step 6: Install BAS-Controlled Application Resource Definitions” on page 63 for details on how to update the RESDESC and CICSSYS. We installed RESDESCs PAALIST, PFALIST, and PTALIST.

Figure 84 on page 85 shows the RESDESC Install panel. To install resources associated with a RESDESC, in this case connection and session definitions, we followed these steps:

1. Issued the RESDESC command.
2. From the RESDESC view, issued the line command INS for the valid RESDESC.
3. Updated the RESDESC install view with the appropriate checks. In 5.3.1.6, “Step 6: Install BAS-Controlled Application Resource Definitions” on page 63 we explain these parameters in detail.
4. Pressed Enter to install the CONNDEFs and SESSDEFs.

We repeated steps 1 through 4 for the other RESDESCs.

```

----- Install Resource Description for SCSPLEX -----
COMMAND ==>
Name                PAALIST                Description to be installed

Notify              ==> inactive          Precheck (INACTIVE, RELEASE, FULL, NO)
State Check         ==> yes                Consistent State (YES, NO)
Force Install       ==> NO                Unconditional Install (YES, NO)

Press ENTER to Install Resource Description
Enter END or CANCEL to cancel without installing.

```

Figure 84. Install of RESDESC PAALIST

We installed the following resources for our links:

- RESDESC PAALIST (Figure 85)
- RESDESC PFALIST (Figure 86)
- RESDESC PTALIST (Figure 87 on page 86)

```

----- MAP of RESDESC PAALIST ----- Row 1 of 6
COMMAND ==>                               Scroll ==>
RESDESC   RASINDSC   RASGNDEF   RESGROUP   RESTYPE   RESDEF
-----
PAALIST   -----+-- AFA0   +- CONNDEF  --- PFA1    1
           |
           +- ATA0   +- CONNDEF  --- PFA1    1
           |
           +- SESSDEF +- PTA1    1
           |
           +- SESSDEF +- PTA2    1
           |
           +- PTA1    1
           +- PTA2    1
----- End Of Map -----

```

Figure 85. Map of RESDESC PAALIST

```

----- MAP of RESDESC PFALIST ----- Row 1 of 8
COMMAND ==>                               Scroll ==>
RESDESC   RASINDSC   RASGNDEF   RESGROUP   RESTYPE   RESDEF
-----
PFALIST   -----FAA0   +- CONNDEF  +- PAA1    2
           |
           |
           |
           +- SESSDEF +- PAA2    2
           |
           |
           |
           +- PAA3    2
           |
           |
           |
           +- PAA4    2
           |
           |
           |
           +- PAA1    2
           |
           |
           |
           +- PAA2    2
           |
           |
           |
           +- PAA3    2
           |
           |
           |
           +- PAA4    2
----- End Of Map -----

```

Figure 86. Map of RESDESC PFALIST

```

----- MAP of RESEDESC PTALIST ----- Row 1 of 8
COMMAND ==>                               Scroll ==>
RESEDESC      RASINDSC      RASGNDEF      RESGROUP      RESTYPE      RESDEF
-----
PTALIST ----- TAAO      +- CONNDEF +- PAA1      1
                                     |          | - PAA2      1
                                     |          | - PAA3      1
                                     |          +- PAA4      1
                                     +- SESSDEF +- PAA1      1
                                     |          | - PAA2      1
                                     |          | - PAA3      1
                                     |          +- PAA4      1
----- End Of Map -----

```

Figure 87. Map of RESEDESC PTALIST

Figure 88 shows the CONNECT view.

The CONNECT view shows our links and they look the same as if they were installed from the CSD. The CONN ID field still has the connection name, but it will show the SYSID when you move to SYSLINKS.

```

30JUN1998 20:06:26 ----- INFORMATION DISPLAY -----
COMMAND ==>                               SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =CONNECT=====SCSPLEX==SCSPLEX==30JUN1998==20:06:26===CPSM=====
CMD Conn CICS      Conn Netname Connect      Service      Pending
--- ID-- System-- Type ----- Status----- Status----- Status-----
PAA1 SCSCPFA1 MRO SCSCPAA1 ACQUIRED     INSERVICE   NOTPENDING
PAA1 SCSCPTA1 MRO SCSCPAA1 ACQUIRED     INSERVICE   NOTPENDING
PAA1 SCSCPFA1 MRO SCSCPAA1 ACQUIRED     INSERVICE   NOTPENDING
PAA2 SCSCPFA1 MRO SCSCPAA2 ACQUIRED     INSERVICE   NOTPENDING
PAA2 SCSCPTA1 MRO SCSCPAA2 ACQUIRED     INSERVICE   NOTPENDING
PAA2 SCSCPTA2 MRO SCSCPAA2 ACQUIRED     INSERVICE   NOTPENDING
PAA3 SCSCPFA1 MRO SCSCPAA3 ACQUIRED     INSERVICE   NOTPENDING
PAA3 SCSCPTA1 MRO SCSCPAA3 ACQUIRED     INSERVICE   NOTPENDING
PAA3 SCSCPTA2 MRO SCSCPAA3 ACQUIRED     INSERVICE   NOTPENDING
PAA4 SCSCPFA1 MRO SCSCPAA4 ACQUIRED     INSERVICE   NOTPENDING
PAA4 SCSCPTA1 MRO SCSCPAA4 ACQUIRED     INSERVICE   NOTPENDING
PAA4 SCSCPTA2 MRO SCSCPAA4 ACQUIRED     INSERVICE   NOTPENDING
PFA1 SCSCPAA1 MRO SCSCPFA1 ACQUIRED     INSERVICE   NOTPENDING
PFA1 SCSCPAA2 MRO SCSCPFA1 ACQUIRED     INSERVICE   NOTAPPLIC
PFA1 SCSCPAA3 MRO SCSCPFA1 ACQUIRED     INSERVICE   NOTAPPLIC
PFA1 SCSCPAA4 MRO SCSCPFA1 ACQUIRED     INSERVICE   NOTPENDING
PTA1 SCSCPAA1 MRO SCSCPTA1 ACQUIRED     INSERVICE   NOTPENDING
PTA1 SCSCPAA2 MRO SCSCPTA1 ACQUIRED     INSERVICE   NOTAPPLIC
PTA1 SCSCPAA3 MRO SCSCPTA1 ACQUIRED     INSERVICE   NOTAPPLIC
PTA1 SCSCPAA4 MRO SCSCPTA1 ACQUIRED     INSERVICE   NOTPENDING
PTA2 SCSCPAA1 MRO SCSCPTA2 ACQUIRED     INSERVICE   NOTPENDING
PTA2 SCSCPAA2 MRO SCSCPTA2 ACQUIRED     INSERVICE   NOTAPPLIC
PTA2 SCSCPAA3 MRO SCSCPTA2 ACQUIRED     INSERVICE   NOTAPPLIC
PTA2 SCSCPAA4 MRO SCSCPTA2 ACQUIRED     INSERVICE   NOTPENDING

```

Figure 88. CONNECT View after BAS-Controlled Install

5.4.2 Implement Full BAS-Controlled Connections and Sessions

It is necessary to look at your connection and session definitions for your various links. You need at least one system link definition for every link type that you have. We only had MRO links, so we could have the same CONNDEF and SESSDEF between every connected CICS system if the connection and session attributes were the same over every link. Review 5.4.2.1, “As Is to Full BAS with Unique Links” for an approach that uses unique connection and session definition over every link, and 5.4.2.3, “As Is to Full BAS with Similar Links” on page 90 for an approach that uses the same connection and session definitions over all links. You can combine the two approaches, depending on your links and their attributes.

Note: When you use SYSLINKs, the connection name has to be the SYSID of the CICS to which you are connecting. If you do not follow this rule, there will be an impact on applications that specify the name of a remote CICS system on CICS API commands that they use. If you have TRANSACTION, TERMINAL, or PROGRAM definitions with a REMOTESYSTEM name that refers to the CONNECTION definition, this is imperative.

5.4.2.1 As Is to Full BAS with Unique Links

We used the RECEIVE and SEND prefixes to control the session names. CICS could give unique prefixes to all of the sessions because our CICS systems were CICS/ESA 4.1 or higher, but we decided to define all attributes in SESSDEFs. We had different values defined for RECEIVE and SEND prefixes in the AOR to TOR sessions, as opposed to the TOR to AOR sessions, but as the SYSLINK defines both sides of the link, we used the same RECEIVE and SEND prefixes for both sides. Other attributes might also require verification. We used different connection and session definitions for the TORs so that duplicate session names at the AOR side would not be a problem. This is also the time for you to check your links and their attributes.

We created new CONNDEFs and SESSDEFs from the old definitions. Previously TORs PTA1 and PTA2 used the same CONNDEFs and SESSDEFs, but now we needed new SESSDEFs for TOR PTA2 to prevent duplicate session names from being detected in the AORs. We used the same names for the CONNDEFs and the SESSDEFs.

5.4.2.2 Session Definition Creation

Figure 89 on page 88 shows the Create panel for SESSDEF T1A3, and Figure 90 on page 88 shows the Create panel for SESSDEF T2A3. To create these session definitions we followed these steps:

1. Issued the SESSDEF command.
2. From the SESSDEF view, issued line command CRE against the SESSDEF that we wanted to use as a model for our new SESSDEF. We used SESSDEF PAA3, which was used for SESSDEFs from TORs PTA1 and PTA2 to AOR PAA3.
3. Updated the Name and Connection fields for SESSDEF T1A3 and the Recv/Send prfx field for T2A3.
4. Pressed Enter to create the SESSDEF.

```

----- Create Session Definition for SCSPLEX Page 1 -----
COMMAND ==>
Name          ==> T1A3          Version   ==> 1
Description   ==> SESSIONS FROM PTA1 TO PAA3
RESGROUP     ==>
User Data    ==>

Protocol      ==> LU61          Intercommunication link protocol
                                   (APPC, EXCI, LU61, NOTAPPLIC)
Maximum       ==> 0 , 0        Maximum sessions (0-999, blank)
Recv/Send count ==> 99 , 99    Receive, Send counts (1-999, blank)
Recv/Send prfx ==> Z3 , Y3    Receive, Send prefixes
Recv/Send size ==> 4096 , 4096 Max Recv,Send VTAM RU size (1-30720,blank)
Modename      ==>              VTAM logmode name
Connection    ==> T1A3        Connection Name
Autoconnect   ==> YES         Session established (NO, YES, ALL)
NetNameQ     ==>              Name known to remote IMS system

```

Figure 89. Create Panel of SESSDEF T1A3

```

----- Create Session Definition for SCSPLEX Page 1 -----
COMMAND ==>
Name          ==> T2A3          Version   ==> 1
Description   ==> SESSIONS FROM PTA2 TO PAA3
RESGROUP     ==>
User Data    ==>

Protocol      ==> LU61          Intercommunication link protocol
                                   (APPC, EXCI, LU61, NOTAPPLIC)
Maximum       ==> 0 , 0        Maximum sessions (0-999, blank)
Recv/Send count ==> 99 , 99    Receive, Send counts (1-999, blank)
Recv/Send prfx ==> U3 , T3    Receive, Send prefixes
Recv/Send size ==> 4096 , 4096 Max Recv,Send VTAM RU size (1-30720,blank)
Modename      ==>              VTAM logmode name
Connection    ==> T2A3        Connection Name
Autoconnect   ==> YES         Session established (NO, YES, ALL)
NetNameQ     ==>              Name known to remote IMS system

```

Figure 90. Create Panel of SESSDEF T2A3

New SESSDEFs and CONNDEFs were created, and in this case, new names were allocated. We also had to check the receive and send prefixes.

Figure 91 on page 89 shows the new CONNDEFs, and Figure 92 on page 89 shows the new SESSDEFs.


```

08JUL1998 14:13:01 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
W1 =CONNDEF=====SCSPLEX==SCSPLEX==08JUL1998==14:13:01====CPSM=====
CMD NAME  Ver   Created      Changed      Description
-----
T1A1     1  6/30/98 23:47  6/30/98 23:47  CONNECTION FROM PTA1 TO PAA1
T1A2     1  6/30/98 23:49  6/30/98 23:49  CONNECTION FROM PTA1 TO PAA2
T1A3     1  6/30/98 23:49  6/30/98 23:49  CONNECTION FROM PTA1 TO PAA3
T1A4     1  6/30/98 23:49  6/30/98 23:49  CONNECTION FROM PTA1 TO PAA4
T2A1     1  6/30/98 23:52  6/30/98 23:52  CONNECTION FROM PTA2 TO PAA1
T2A2     1  6/30/98 23:52  6/30/98 23:52  CONNECTION FROM PTA2 TO PAA2
T2A3     1  6/30/98 23:52  6/30/98 23:52  CONNECTION FROM PTA2 TO PAA3
T2A4     1  6/30/98 23:52  6/30/98 23:52  CONNECTION FROM PTA2 TO PAA4
F1A1     1  7/08/98 11:48  7/08/98 11:48  CONNECTION FROM PFA1 TO PAA1
F1A2     1  7/08/98 11:46  7/08/98 11:46  CONNECTION FROM PFA1 TO PAA2
F1A3     1  7/08/98 11:48  7/08/98 11:48  CONNECTION FROM PFA1 TO PAA3
F1A4     1  7/08/98 11:47  7/08/98 11:47  CONNECTION FROM PFA1 TO PAA4

```

Figure 91. CONNDEF View Showing Only the New CONNDEFs

```

08JUL1998 14:26:36 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
W1 =SESSDEF=====SCSPLEX==SCSPLEX==08JUL1998==14:26:36====CPSM=====
CMD Name  Ver   Created      Changed      Description
-----
T1A1     1  6/30/98 23:22  6/30/98 23:41  SESSIONS FROM PTA1 TO PAA1
T1A2     1  6/30/98 23:29  6/30/98 23:41  SESSIONS FROM PTA1 TO PAA2
T1A3     1  6/30/98 23:30  6/30/98 23:42  SESSIONS FROM PTA1 TO PAA3
T1A4     1  6/30/98 23:32  6/30/98 23:42  SESSIONS FROM PTA1 TO PAA4
T2A1     1  6/30/98 23:36  6/30/98 23:42  SESSIONS FROM PTA2 TO PAA1
T2A2     1  6/30/98 23:37  6/30/98 23:42  SESSIONS FROM PTA2 TO PAA2
T2A3     1  6/30/98 23:38  6/30/98 23:42  SESSIONS FROM PTA2 TO PAA3
T2A4     1  6/30/98 23:41  6/30/98 23:41  SESSIONS FROM PTA2 TO PAA4
F1A1     1  7/08/98 11:41  7/08/98 11:43  SESSIONS FROM PFA1 TO PAA1
F1A2     1  7/08/98 11:49  7/08/98 11:49  SESSIONS FROM PFA1 TO PAA2
F1A3     1  7/08/98 11:49  7/08/98 11:49  SESSIONS FROM PFA1 TO PAA3
F1A4     1  7/08/98 11:50  7/08/98 11:50  SESSIONS FROM PFA1 TO PAA4

```

Figure 92. SESSDEF View Showing Only the New SESSDEFs

You can use either the SYSLINK Create view or the CICSSYS Generate view to create the links between your CICS systems. We used the CICSSYS Generate view.

Figure 93 on page 90 shows the CICSSYS Generate view. To perform a CICSSYS GENERate, we followed these steps:

1. Issued the CICSSYS command.
2. From the CICSSYS view, issued the line command GEN.
3. Updated the Conndef and Sessdef fields and selected a system that is the other side of the link.
4. Pressed Enter to create a SYSLINK.

We repeated steps 1 through 4 for all of the links we required.

```

----- Generate CICS System Connections for SCSPLEX Row 1 to 4
COMMAND ==>                               Scroll ==>

Primary CICS System          SCSCPTA1
ConnDef Name LU61           ==>          Version ==>
SessDef Name LU61           ==>          Version ==>
ConnDef Name LU62           ==>          Version ==>
SessDef Name LU62           ==>          Version ==>
ConnDef Name MRO             ==> T1A1     Version ==> 1
SessDef Name MRO             ==> T1A1     Version ==> 1
ConnDef Name INDIRECT        ==>          Version ==>
SessDef Name INDIRECT        ==>          Version ==>

Sel System  Id  Applid  Type Description                      Result
- - - - -
S SCSCPAA1 PAA1 SCSCPAA1 MRO AOR1 for plex SCSPLEX
- SCSCPAA2 PAA2 SCSCPAA2 MRO AOR2 for plex SCSPLEX
- SCSCPAA3 PAA3 SCSCPAA3 MRO AOR3 for plex SCSPLEX
- SCSCPAA4 PAA4 SCSCPAA4 MRO AOR4 for plex SCSPLEX

```

Figure 93. CICSSYS Generate View

We created 12 bidirectional links. Figure 94 shows the SYSLINK view. We issued the SYSLINK command to display our links.

```

08JUL1998 14:31:41 ----- INFORMATION DISPLAY -----
COMMAND ==>                               SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =SYSLINK=====SCSPLEX==SCSPLEX==08JUL1998==14:31:41====CPSM=====
CMD Primary  Secondar ConnDef Ver SessDef Ver
-----
SCSCPFA1 SCSCPAA1 F1A1      1 F1A1      1
SCSCPFA1 SCSCPAA2 F1A2      1 F1A2      1
SCSCPFA1 SCSCPAA3 F1A3      1 F1A3      1
SCSCPFA1 SCSCPAA4 F1A4      1 F1A4      1
SCSCPTA1 SCSCPAA1 T1A1      1 T1A1      1
SCSCPTA1 SCSCPAA2 T1A2      1 T1A2      1
SCSCPTA1 SCSCPAA3 T1A3      1 T1A3      1
SCSCPTA1 SCSCPAA4 T1A4      1 T1A4      1
SCSCPTA2 SCSCPAA1 T2A1      1 T2A1      1
SCSCPTA2 SCSCPAA2 T2A2      1 T2A2      1
SCSCPTA2 SCSCPAA3 T2A3      1 T2A3      1
SCSCPTA2 SCSCPAA4 T2A4      1 T2A4      1

```

Figure 94. SYSLINK View

We ended up with 12 SYSLINKs, 12 CONNDEFs, and 12 SESSDEFs, because all of our links between CICS systems were unique. The send and receive prefixes made them unique. If you do not need your own prefixes, you can let CICS define the prefixes, which would give you the same CONNDEF and SESSDEF at every SYSLINK.

5.4.2.3 As Is to Full BAS with Similar Links

All of our CICS systems were CICS/ESA 4.1 or higher so CICS could define the prefix and session names. We used the same CONNDEF and SESSDEF at all SYSLINKs. We created a new CONNDEF and SESSDEF from the old definitions. We changed the Name, Recv/Send prfx, and Connection fields in the SESSDEF.

Note: You must specify a value for Recv/Send prfx. BAS does not have a default value for this field.

Figure 95 shows the first page of the SESSDEF Update panel. To create session definitions we followed these steps:

1. Issued the SESSDEF command.
2. From the SESSDEF view, issued the line command CRE against the SESSDEF that is our model.
3. Updated the Name, Version, and Connection fields. Updated the Recv/Send prfx field with the '<' and '>' values. The SESSDEF view has three panels, and you might have to adjust some of the attributes so that they relate to all of the links.
4. Pressed Enter to create our SESSDEF.

```
----- Update Session Definition for SCSPLEX Page 1 -----
COMMAND ===>
Name          SESS          Version      1
Description    ===> MRO SESSDEF TO ALL LINKS
Created        7/01/98  14:33      Changed      7/01/98 14:39
User Data      ===>

Protocol       ===> LU61          Intercommunication link protocol
                (APPC, EXCI, LU61, NOTAPPLIC)
Maximum        ===>          ,          Maximum sessions (0-999, blank)
Recv/Send count ===> 99 , 99      Receive, Send counts (1-999, blank)
Recv/Send prfx ===> < , >      Receive, Send prefixes
Recv/Send size ===> 4096 , 4096  Max Recv,Send VTAM RU size (1-30720, blank)
Modename       ===>          VTAM logmode name
Connection     ===> CONN      Connection Name
Autoconnect    ===> YES       Session established (NO, YES, ALL)
NetNameQ       ===>          Name known to remote IMS system
```

Figure 95. Creating a Common SESSDEF to All Links

Figure 96 on page 92 shows the CONNDEF Create panel. To create connection definitions we followed these steps:

1. Issued the CONNDEF command.
2. From the CONNDEF view, issued the CREate command against a CONNDEF that can be used as a model for this CONNDEF.
3. Updated the Name field and left the NetNameQ field blank. Both ends of the link are defined at the SYSLINK definition.
4. Pressed Enter to create the CONNDEF.

```

----- Create Connection Definition for SCSPLEX Page 1 -----
COMMAND ==>
Name          ==> CONN          Version  ==> 1      Entry version Number
Description   ==> MRO CONNECTION BETWEEN ALL SYS
RESGROUP     ==>
User Data    ==>

AccessMethod ==> XM          Access method (VTAM, INDIRECT, IRC, XCF,
NETBIOS, TCPIP)
Attachsec    ==> LOCAL      Attach-time security
(Local,IDENTIFY,MIXIDPE,PERSISTENT,VERIFY)

AutoConnect  ==> YES        Autoconnect sessions to VTAM (NO,ALL,YES)
ConnType     ==> NOTAPPLIC Nature of connection (GENERIC, SPECIFIC,
APPC, NETBIOS, TCPIP, NOTAPPLIC)
Datastream   ==> USER      Data stream type (USER,LMS,SCS,STRFIELD,3270)

IndirectSys  ==>           Intermediate system name
Inservice    ==> YES        Connection status (YES,NO)
MaxQueTime   ==> NO         Maximum queue time (NO, 0-9999, blank)
NetName      ==>           Network name
Protocol     ==> NOTAPPLIC Protocol (APPC,EXCI,LU61,NOTAPPLIC)

```

Figure 96. Creating a Common CONNDEF to All Links

Next we had to remove the old SYSLINKs before installing the new ones. To remove SYSLINKs we followed these steps:

1. Issued the SYSLINK command.
2. From the SYSLINK view, issued the REMove command against the links we had to remove.
3. Pressed Enter to remove the old SYSLINKs.

Figure 97 on page 93 shows the SYSLINK Create panel. We followed these steps to create SYSLINKs:

1. Issued the SYSLINK command.
2. From the SYSLINK view, issued the CREate command.
3. Updated the fields. There is no difference between the Primary System and the Secondary System because SYSLINK is defining bidirectional links.
4. Pressed Enter to create a SYSLINK.

Follow steps 1 through 4 for all of the links. You can issue the cre command in the CMD column against the newly created SYSLINK. This definition will be used as a model for further definitions.

```

----- Create System Link for SCSPLEX -----
COMMAND ==>

Primary System   ==> SCSCPTA1
Secondary System ==> SCSCPAA1

ConnDef Name     ==> CONN           Version  ==> 1
SessDef Name     ==> SESS           Version  ==> 1

Press ENTER to create SYSLINK.
Type END or CANCEL to cancel without creating.

```

Figure 97. Creating a SYSLINK

Figure 98 shows the newly created SYSLINKs.

```

08JUL1998 18:54:59 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =SYSLINK=====SCSPLEX==SCSPLEX==08JUL1998==18:54:59====CPSM=====
CMD Primary  Secondar ConnDef Ver SessDef Ver
-----
SCSCPFA1 SCSCPAA1 CONN      1 SESS      1
SCSCPFA1 SCSCPAA2 CONN      1 SESS      1
SCSCPFA1 SCSCPAA3 CONN      1 SESS      1
SCSCPFA1 SCSCPAA4 CONN      1 SESS      1
SCSCPTA1 SCSCPAA1 CONN      1 SESS      1
SCSCPTA1 SCSCPAA2 CONN      1 SESS      1
SCSCPTA1 SCSCPAA3 CONN      1 SESS      1
SCSCPTA1 SCSCPAA4 CONN      1 SESS      1
SCSCPTA2 SCSCPAA1 CONN      1 SESS      1
SCSCPTA2 SCSCPAA2 CONN      1 SESS      1
SCSCPTA2 SCSCPAA3 CONN      1 SESS      1
SCSCPTA2 SCSCPAA4 CONN      1 SESS      1

```

Figure 98. SYSLINKs with a Common CONNDEF and SESSDEF

5.4.2.4 Installation of SYSLINKs

You can install SYSLINKs dynamically or automatically at CICS initialization. The autoinstall of SYSLINKs is controlled by the CICSSYS parameters. There is no RESDESC associated with a SYSLINK. Your links have to be released and out of service before you can install them.

Figure 99 on page 94 shows how to put a connection out of service from the CONNECT view. We:

1. Issued the CONNECT command.
2. From the CONNECT view, issued the OUT command for both sides of the link.
3. Pressed Enter to put the link out of service.

```

08JUL1998 19:24:54 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =CONNECT=====SCSPLEX==SCSPLEX==08JUL1998==19:24:54====CPSM=====
CMD Conn CICS      Conn Netname  Connect  Service  Pending
--- ID-- System-- Type  ----- Status---- Status---- Status----
out PAA1 SCSCPFA1 MRO  SCSCPAA1 RELEASED  INSERVICE NOTPENDING

```

Figure 99. Changing the Status of a Connection

Figure 100 shows the dynamic install of a SYSLINK. We followed these steps to dynamically install a SYSLINK:

1. Issued the SYSLINK command.
2. From the SYSLINK view, issued the INStall command.
3. Updated the Notify, State Check, and Force Install fields to the values applicable to us. In 5.3.1.6, “Step 6: Install BAS-Controlled Application Resource Definitions” on page 63 we explain these parameters in detail.
4. Pressed Enter to install the SYSLINK.

```

----- Install System Link for SCSPLEX -----
COMMAND ==>

Primary System      SCSCPTA1
Secondary System    SCSCPAA1

ConnDef Name        T1A1          Version      1
SessDef Name        T1A1          Version      1

Notify              ==> INACTIVE    Precheck (INACTIVE, RELEASE, FULL, NO)
State Check         ==> YES          Consistent State (YES, NO)
Force Install       ==> NO          Unconditional Install (YES, NO)

Press ENTER to Install SYSLINK

```

Figure 100. Dynamic Install of a SYSLINK

Automatic installation is controlled by the CICSSYS Install Resources parameter. SYSLINK is not associated with a RESDESC.

Figure 101 on page 95 shows the CICSSYS Update panel. To update the CICSSYS definition we followed these steps:

1. Issued the CICSSYS command.
2. From the CICSSYS view, issued the UPDate line command.
3. Updated the Install Resources field with the appropriate parameter. In 5.3.1.6, “Step 6: Install BAS-Controlled Application Resource Definitions” on page 63 we explain the parameters in detail.
4. Pressed Enter to use our updated parameters.

```

----- Update System - BAS Attributes - for SCSPLEX -----
COMMAND ==>

System name      SCSCPAA1
Description      AOR1 for plex SCSPLEX

Install Resources ==> COLDDONLY  (NEVER,ALWAYS,COLDDONLY,WARMONLY)

Recovery Action  ==> CONTINUE   (CONTINUE,PROMPT,TERMINATE,IMMEDIATE,
                                NORMAL)

Model System     ==>             System whose SYSLINKS are to be copied

Type DOWN or UP to view other System screens.
Press ENTER to update the System.
Type END or CANCEL to cancel without updating.

```

Figure 101. Updating the Install Resources Parameter for a CICS System

5.5 Migrating All Application Definitions from the CSD to BAS

To migrate the complete set of applications, you must perform the EXTRACT process for each CSD listname. Set the EYUIN DD parameters RESGROUP and RESINGRP to CSDGROUP (Figure 102), to ensure that data repository values for RESGROUP and RESINGRP match the CSD group values.

```

//SYSIN    DD *
EXTRACT USERPROGRAM(EYU9BCSD) OBJECTS LIST(ListName)
/*
//EYUIN    DD *
RESGROUP(CSDGROUP)
RESINGRP(CSDGROUP)
CONNECTION(*)
FILE(*)
JOURNAL(*)
JOURNALMODEL(*)
LSRPOOL(*)
MAPSET(*)
PARTITIONSET(*)
PARTNER(*)
PROFILE(*)
PROGRAM(*)
SESSIONS(*)
TDQUEUE(*)
TERMINAL(*)
TRANCLASS(*)
TRANSACTION(*)
TYPETERM(*)
/*

```

Figure 102. EXTRACT Routine SYSIN and EYUIN Using the LIST Option

Validate and edit the generated output to ensure that a valid CONTEXT statement is included for input into the batched repository-update facility. This process is documented in 5.3.1.1, “Step 1: EXTRACT Application Resource Definitions from

the CSD” on page 44. The *as is* stage has now been reached, and the addition of resource assignments will complete the migration to a *full BAS* environment. Figure 103 on page 96 shows the RESDESC view after all applications have been migrated. Refer to Appendix B, “Full BAS RESDESC Map Panels” on page 167 for the MAP view of all applications after full migration has been completed.

```

15JUL1998 17:11:56 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1      ALT WIN ==>
W1 =RESDESC=====SCSPLEX==SCSPLEX==15JUL1998==17:11:56====CPSM=====
CMD Name      Scope Scope      Description
-----
COMMON  YES  COMMON  NOT SPECIFIC TO ONE APPLICATION
HOTELRES YES  HOTELRES HOTEL RESERVATION APPLICATION
INVENTOR YES  INVENTOR INVENTORY TRACKING APPLICATION
SPECIFIC YES  SPECIFIC PRODUCTION SPECIFICATION APPL
STOCK    YES  STOCK    STOCK CONTROL APPLICATION
TELLER   YES  TELLER   TELLER SYSTEM APPLICATION

```

Figure 103. RESDESC View Showing All Migrated Applications

Chapter 6. Change Management

In this chapter we discuss change management considerations. Changes can occur when your application passes through different phases of the development and deployment cycle, and as a result of adding regions to your CICSplex.

6.1 Multiple Versions of Resource Definitions

Your application development migration cycle might consist of a development phase, a testing phase, and a production phase. In the case of these three phases running under the control of a single CMAS, or even if only two of them are under the control of a single CMAS, the requirement that different versions of the same transaction, program, file, or any other CICS resource definition exist simultaneously, makes the CICSplex SM BAS version function extremely important. Naturally, CICSplex SM allows only one version of a resource to be installed in a given CICS region.

It is imperative that you can define CICS resources that are unique, are associated with the appropriate phase in their development life cycle, and at the same time have the same name across all related environments. Identically named resource definitions can have different attributes that are specific to the evolution phases where they are used.

BAS enables you to assign a version number to a resource and allows up to 15 different versions of a resource definition to exist concurrently. You could, for example, assign all development phase CICS resources a version of 1, testing phase resources a version of 2, and production phase resources a version of 3, or you could use a range of 1 through 5 for development, 6 through 10 for testing, and 11 through 15 for production. This arrangement would enable you to maintain several variations of CICS resource definitions in specific environments.

CICSplex SM performs time-stamping, which provides a chronological record of the date and time a version was created, and it displays the time stamp in the resource definition views. Tracking and maintenance of version data are your responsibility; use the User Data field in the resource definition views to record relevant resource version identifiers.

If the version field is left blank or is 0, when creating a resource definition BAS reuses the available version numbers, from lowest to highest. It is therefore essential, if you plan to use the version number facility, that you ensure that your resource definition procedures are well documented, controlled, and maintained.

6.2 Installing Resources through BAS

You can use BAS to install resources from the data repository into systems that are running CICS 4.1 or later. The installation facility uses the EXEC CICS CREATE command to create resources that are independent of the CSD.

BAS can install resources either automatically at system installation time, or dynamically into an active CICS system. Before installing a resource, CICSplex SM performs checks to determine whether the resource already exists in the CICS system; if the resource exists, a duplicate resource condition prevents the installation. However, during dynamic resource installation, BAS offers the

option of bypassing the duplicate resource checking and allows you to force the unconditional installation of resources.

6.2.1 Automatic Installation

When a CICS system initializes and identifies itself to a CMAS, BAS reviews the resources associated with that system and decides on the set of resources to be installed.

The automatic installation of resources in a CICS system is controlled by the CICS system definition, which tells CICSPlex SM under which conditions resources should be installed and how installation errors should be handled. Installation options can also be assigned at the resource description and resource assignment levels.

To automatically install a set of resources when a CICS system initializes, you must:

1. Update the CICS system definition (CICSSYS) to indicate:
 - Whether resources should be installed every time the system initializes, only during a cold or warm (AUTO) start, or not at all.

The following options can be specified for automatic installation of CICS resources:

- **ALWAYS** Install resources every time the MAS connects after a CICS startup.
- **COLDONLY** Install resources only when the MAS connects after an initial or cold start.
- **NEVER** Never automatically install resources in this CICS system.
- **WARMONLY** Install resources only when the MAS connects after a CICS warm start or emergency restart (AUTO).

CICSPlex SM handles the initial start of a CICS system in the same way it handles a cold start. An emergency restart of CICS is handled in the same way as a warm start.

Note: COLDONLY is the preferred automatic installation option. It ensures that restart times during warm or emergency starts are not extended because of unnecessary reinstallation of resources. The WARMONLY and ALWAYS options install resources from the repository at every auto startup. This would extend CICS startup time because resources installed from the Global Catalog during CICS initialization would be discarded and then reinstalled automatically, which would be an unnecessary overhead.

- How CICSPlex SM should handle any resource installation errors that may occur.
2. Create one or more resource descriptions (RESDESCs) and specify:
 - YES in the Auto Install field to enable automatic resource installation
 - The groups of resources to be installed

If the resource groups are directly associated with a resource description (through RESINDSC), the resources are installed in the CICS systems named in the ResGroup Scope field of the description.

3. Optionally, associate the resource descriptions with resource assignments (RASGNDEFs) to select specific resources and provide usage information and override values.

In this case, the resources are installed in the CICS systems named in the Target Scope and Related Scope fields of the resource assignment, resource description, or the association between them, the RASINDSC.

Notes:

- Resources can be installed in a CICS system automatically even if the maintenance point CMAS for the CICSplex is not active as long as the CMAS to which this particular CICS system is connected is active.
- If you are using BAS to automatically install resources during CICS initialization, specify the CICSplex SM system parameter MASPLTWAIT(YES) to suspend PLT processing until all CICS resources are installed and the MAS is fully initialized. This parameter ensures that CICS applications cannot be started and users cannot sign on until CICSplex SM completes the installation of resources and PLT processing resumes.
- When you activate a DB2 connection using a DB2CDEF definition, ensure that the appropriate DB2 connect program is started after the MAS startup program (EYU9XLM for a local MAS, and EYU9NXRM for a remote MAS).
- Journal definitions (JRNLDEFs) cannot be installed.
- Key file segment definitions (FSEGDEFs) cannot be installed. They are available only for CICS for OS/2 systems, which do not support the EXEC CICS CREATE command.

6.2.2 Error Processing during Automatic Resource Installation

If any defined resources cannot be installed during CICS system initialization, CICSplex SM will:

- Issue EYUBNnnnn messages to the CICS job log and EYULOG. These messages describe the resources and the reasons they could not be installed, including any error codes that may have been returned by CICS. **Note:** The job log also contains CICS messages with detailed information about the installation errors.
- Respond according to the Recovery Action value in the CICSSYS definition:
 - **CONTINUE** Continue installing other resources.
 - **IMMEDIATE** Shut down the CICS system immediately.
 - **NORMAL** Shut down the CICS system normally.
 - **PROMPT** Prompt the operator console for an action. The resource installation process in the CICS system is suspended until the operator responds, but all other MAS processing continues.
 - **TERMINATE** Terminate the resource installation process. No more resources are installed. Any resources that were successfully installed are not removed.

6.2.3 Dynamic Installation

To dynamically install resources into an active CICS system, issue the INStall action command from the appropriate RESDEF, RESGROUP, RESDESC, or SYSLINK.

The maintenance point CMAS for the CICSplex must be active when you attempt to install resources dynamically.

Because SESSDEFs are installed when the associated CONNDEF is installed, they cannot be dynamically installed as individual resources.

Resources can be installed individually, in which case you must identify the target system where the resource is to be installed and identify whether the resource is local or remote. Complete resource groups, or subsets of a resource group, can also be installed dynamically.

Errors during dynamic install processing result in the presentation of two views. The first view (Figure 167 on page 156) shows the systems that relate to the install failure. The second view (Figure 168 on page 157) indicates the nature of the error, and any related data.

6.2.4 Deciding Where Resources Should Be Installed

BAS enables you to install resources throughout the CICSplex by issuing a single request. You can use a single resource definition to install multiple instances of the resource in multiple CICS systems, and you can use the same resource definition to install both local and remote resources.

To install resources either automatically or dynamically, CICSplex SM needs to know in which CICS systems the resources should be installed and how the resources will be used. The Target Scope value identifies the CICS system or systems where the resources should be installed. A Target Scope value is required for all types of resource definitions. These CICS systems are the primary target for resource installation, and you must indicate whether a resource is local or remote to the target CICS systems.

The Related Scope value identifies a single CICS system where resources identified as remote to the target system should be installed as local resources. A Related Scope value is valid only for FILEDEFs, PROGDEFs, TDQDEFs, and TRANDEFs, and only when they have a Usage value of REMOTE.

The Usage value indicates whether resources are local or remote to the target CICS system. Local resources are installed only in those systems identified in the Target Scope. Remote resources are installed as remote resources in the target system, and as local resources in the related CICS system.

To determine which resources to install and where, CICSplex SM checks the Target Scope, Related Scope, and Resource Group values in your resource assignments, resource descriptions, and the related associations.

6.2.5 Understanding Scopes in a CICSplex SM Environment

The scope can be any named part of the CICSplex SM environment that qualifies the context of the CICSplex SM request. The scope can be the CICSplex itself, a CICS system, or a CICS system group. BAS introduces a concept of logical scope (see 6.2.6, “BAS Logical Scopes” on page 105).

The scope identifies how CICS resource installation will be propagated across the CICSplex, as an install into either all CICSplex SM-controlled regions or a subset of the CICSplex SM-controlled environment.

The CICSplex configuration that we use to assist you in understanding scopes (see Chapter 5, “Cookbook Approach to BAS Migration” on page 39) consists of two TORs running CICS TS 1.2; four AORs, two of which run CICS/ESA 4.1, and two of which run CICS TS 1.2; and one FOR running CICS TS 1.2 (see Table 9).

System Name	Region Function and Release
SCSCPTA1	TOR - CICS Transaction Server for OS/390 1.2
SCSCPTA2	TOR - CICS Transaction Server for OS/390 1.2
SCSCPAA1	AOR - CICS Transaction Server for OS/390 1.2
SCSCPAA2	AOR - CICS/ESA 4.1
SCSCPAA3	AOR - CICS/ESA 4.1
SCSCPAA4	AOR - CICS Transaction Server for OS/390 1.2
SCSCPFA1	FOR - CICS Transaction Server for OS/390 1.2

Set the context in the CICSplex SM ISPF EUI to SCSPLEX, and select option 2, CPSM (Figure 104) to get to the CICSplex SM main menu shown in Figure 105 on page 102.

```

-----CICSplex System Manager-----
OPTION  ==> 2

0 PROFILE      - User Session Parameters
1 PLEXMGR      - List of Service Points
2 CPSM         - CICSplex SM

      Default Criteria for CPSM:

Context          ==> SCSPLEX
Scope            ==> *
Warning Record Count ==> 0          0 for no checking
Require Set      ==> NO          YES, NO
  
```

Figure 104. CICSplex SM Main Menu

Select (S) the ADMTOPOL view (Figure 105 on page 102), and then select the CICS System Group Definitions (CICSGRP) view (Figure 106 on page 102 and Figure 107 on page 102) to display the defined system groups. These system groups represent the scopes.

```

01JUL1998 14:12:18 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =MENU=====SCSPLEX==*=====01JUL1998==14:12:18====CPSM=====
CMD View Name          Description
-----
ANALYSIS  Real Time Analysis Operations Views
CONFIG    CMAS Configuration Operations Views
MONITOR   Monitoring Views
OPERATE   Operations Views
TOPOLOGY  Topology Operations Views
WORKLOAD  Workload Operations Views
=====
ADMSAM    RTA System Availability Monitoring Administration Views
ADMMRM    RTA MAS Resource Monitoring Administration Views
ADMAMP    RTA Analysis Point Monitoring Administration Views
ADMCONFIG CMAS Configuration Administration Views
ADMMON    Monitor Administration Views
S  ADMTOPOL Topology Administration Views
ADMWLM    Workload Manager Administration Views
ADMBAS    Business Application Services Administration Views

```

Figure 105. CICSplex SM Primary Menu: Select ADMTOPOL

The CICSGRP view identifies the CICS system groups that you have defined.

```

01JUL1998 14:12:18 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =ADMTOPOL=====SCSPLEX==*=====01JUL1998==14:12:18====CPSM=====
CMD View Name          Description
-----
ADMTOPOL  Topology Administration Views
CICSSYS   CICS System Definitions
S  CICSGRP  CICS System Group Definitions
SYSGRPC   Members of CICS System Groups
PERIODEF  Time Period Definitions

```

Figure 106. ADMTOPOL: Topology Administration - Select CICSGRP

```

01JUL1998 14:14:22 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =CICSGRP=====SCSPLEX==*=====01JUL1998==14:14:22====CPSM=====
CMD System  Description
--- Group  -----
ALLCICS    All CICS's
SCSCGLSR   4.1 AORs for non-RLS
SCSCGRLS   CICS TS AORs + FOR RLS
SCSCG001   All AORs
SCSCG003   CICS TS AORs
SCSCTOR    All TORs

```

Figure 107. CICSGRP View: All Defined System Groups for the SCSPLEX Context

Alternatively, select the SYSGRPC view (Figure 108 on page 103) to display all CICS systems and their associated groups.

```

01JUL1998 14:18:48 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =SYSGRPC=====SCSPLEX==*=====01JUL1998==14:18:48====CPSM=====
CMD Group      Member      Member
--- Name----- Name----- Type-----
ALLCICS  SCSCPAA1  CICSSYS
ALLCICS  SCSCPAA2  CICSSYS
ALLCICS  SCSCPAA3  CICSSYS
ALLCICS  SCSCPAA4  CICSSYS
ALLCICS  SCSCPFA1  CICSSYS
ALLCICS  SCSCPTA1  CICSSYS
ALLCICS  SCSCPTA2  CICSSYS
SCSCGLSR SCSCPAA2  CICSSYS
SCSCGLSR SCSCPAA3  CICSSYS
SCSCGRLS SCSCPAA1  CICSSYS
SCSCGRLS SCSCPAA4  CICSSYS
SCSCGRLS SCSCPFA1  CICSSYS
SCSCG001 SCSCPAA1  CICSSYS
SCSCG001 SCSCPAA2  CICSSYS
SCSCG001 SCSCPAA3  CICSSYS
SCSCG001 SCSCPAA4  CICSSYS
SCSCG003 SCSCPAA1  CICSSYS
SCSCG003 SCSCPAA4  CICSSYS
SCSCTOR  SCSCPTA1  CICSSYS
SCSCTOR  SCSCPTA2  CICSSYS

```

Figure 108. SYSGRPC View: Members of CICS System Groups

With the views you have just selected, you can gather information about the system groups that have been defined. Issue the SCOPE command with the addition of one of the identified groups (Figure 109 and Figure 110 on page 104).

```

01JUL1998 14:39:22 ----- INFORMATION DISPLAY -----
COMMAND ==> scope scscg001                             SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =CICSGRP=====SCSPLEX==*=====01JUL1998==14:39:22====CPSM=====
CMD System      Description
--- Group      -----
ALLCICS  All CICS's
SCSCGLSR CICS 4.1 AORs for non-RLS
SCSCGRLS CICS TS AORs + FOR RLS
SCSCG001 All AORs
SCSCG003 CICS TS AORs
SCSCTOR  All TORs
SCTSNRLS CICS TS AORs + FOR non-RLS

```

Figure 109. Issuing the SCOPE Command with a System Group Identifier

```

01JUL1998 14:42:46 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =CICSGRP=====SCSPLEX==SCSCG001=01JUL1998==14:42:46====CPSM=====
CMD System  Description
--- Group  -----
ALLCICS  All CICS's
SCSCGLSR 4.1 AORs for non-RLS
SCSCGRLS CICS TS AORs + FOR  RLS
SCSCG001 All AORs
SCSCG003 CICS TS AORs
SCSCTOR  All TORs
SCTSNRLS CICS TS AORs + FOR  non-RLS

```

Figure 110. Context and Scope View

Note: The view now indicates not only the context, SCSPLEX, but also the scope, SCSCG001.

Issue the TOPOLOGY command to display the TOPOLOGY view for the context and scope indicated (see Figure 111).

```

01JUL1998 14:48:40 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
+W1 =TOPOLOGY=====SCSPLEX==SCSCG001=01JUL1998==14:48:40====CPSM=====
CMD View Name      Description
-----
      TOPOLOGY      Topology Operations Views
S      MAS          Managed Address Spaces

```

Figure 111. Selecting the MAS Option from the Topology View

Select the MAS option to display all CICS systems related to the SCSCG001 scope (Figure 112).

```

01JUL1998 14:54:16 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =MAS=====SCSPLEX==SCSCG001=01JUL1998==14:54:16====CPSM=====
CMD Name   Type  CMAS   Status  MON RTA WLM Description
-----
SCSCPAA1  LOCAL SCSCPCA1 ACTIVE  YES NO  NO  AOR1 for plex SCSPLEX
SCSCPAA2  LOCAL SCSCPCA1 ACTIVE  YES NO  NO  AOR2 for plex SCSPLEX
SCSCPAA3  LOCAL SCSCPCB1 ACTIVE  YES NO  NO  AOR3 for plex SCSPLEX
SCSCPAA4  LOCAL SCSCPCB1 ACTIVE  YES NO  NO  AOR4 for plex SCSPLEX

```

Figure 112. The MAS View for Scope SCSCG001

Figure 112 shows the relationship between the system group, SCSCG001, and all AORs in the CICSplex. The scope name is SCSCG001, and the scope is all AORs in the CICSplex. An install of a resource would be implemented for all AORs identified within the system group, or scope, identified by SCSCG001.

Figure 112 also shows that the scope can relate to the whole CICSplex or to a group of CICS systems, for example, the TORs, all CICS 4.1 AORs, all AORs (TS

and 4.1), only CICS TS AORs, or a single CICS system (in this case the FOR). Using CICSplex SM BAS, you can define and control any scope that you think will enable you to efficiently manage application resource distribution and maintenance.

6.2.6 BAS Logical Scopes

BAS enables you to manage CICS resources at a business application level. In 6.2.5, “Understanding Scopes in a CICSplex SM Environment” on page 101 we discuss scoping as it relates to the CICS system enterprise, either singularly, collectively as a CICS group, or the whole CICSplex. BAS enables you to define the scope according to the applications that you will manage and maintain, not according to the CICS regions in which those applications will execute.

Defining scopes based on your business applications enables you to manage an application independently of the physical scope of your CICS enterprise. Business application logical scoping ensures that when you make changes to a specific application, those changes will be propagated throughout your whole CICS enterprise.

For a business application to be recognized by CICSplex SM, you must assign a logical scope name in the resource description. The RESDESC identifies the resource definitions that make up your application and the CICS systems with which the application should be associated.

Select RESDESC from the ADMBAS view to display a list of resource descriptions. In this case, we are interested in the HOTELRES entry, which is also defined with SCOPE=YES (see Figure 113).

```

02JUL1998 15:06:26 ----- INFORMATION DISPLAY -----
COMMAND  ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
W1 =RESDESC=====SCSPLEX==*=====02JUL1998==15:06:26====CPSM=====
CMD Name   Scope Scope   Description
---  -----  -----  -----
HOTELRES YES  HOTELRES HOTEL RESERVATION APPLICATION
LSRLIST NO                                     HOTEL RESERVATION CICS/ESA 4.1
PAALIST NO                                     HOTEL RESERVATION AORs
PFALIST NO                                     HOTRES FOR CONNECTIONS AND SES
PTALIST NO                                     HOTRES TOR CONNECTIONS
RLSLIST NO                                     HOTEL RESERVATION CICS 1.2

```

Figure 113. The RESDESC View: HOTELRES SCOPE=YES

Select RASGNDEF view from the ADMBAS view to display the resource assignments for resource group HOTELRES (see Figure 114 on page 106 and Figure 115 on page 106).

```

02JUL1998 16:30:09 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
>W1 =RASGNDEF=====SCSPLEX==*=====02JUL1998==16:30:09====CPSM=====
CMD Name      ResGroup ResType  Target  Usage Related  Description
-----
HOTFIL12 HOTELRES FILEDEF  SCSCG003 LOCAL      FILE - AOR TS 1.2
HOTFIL41 HOTELRES FILEDEF  SCSCGLSR REMOT SCSCPFA1 FILE - AOR CICS41
HOTMAPS  HOTELRES MAPDEF  SCSCG001 LOCAL      MAPS
HOTPROGS HOTELRES PROGDEF  SCSCG001 LOCAL      PROGRAMS
HOTTRAN  HOTELRES TRANDEF  SCSCG001 LOCAL      TRANSACTIONS

```

Figure 114. The RASGNDEF View: ResGroup = HOTELRES

```

02JUL1998 16:30:09 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
>W1 =RASGNDEF=====SCSPLEX==*=====02JUL1998==16:30:09====CPSM=====
CMD Name      ResGroup ResType  Target  Usage Related  Description
-----
HOTFIL12 HOTELRES FILEDEF  SCSCG003 LOCAL      FILE - AOR TS 1.2
HOTFIL41 HOTELRES FILEDEF  SCSCGLSR REMOT SCSCPFA1 FILE - AOR CICS41
HOTMAPS  HOTELRES MAPDEF  SCSCG001 LOCAL      MAPS
bro HOTPROGS HOTELRES PROGDEF  SCSCG001 LOCAL      PROGRAMS
HOTTRAN  HOTELRES TRANDEF  SCSCG001 LOCAL      TRANSACTIONS

```

Figure 115. The RASGNDEF View: BROWse HOTPROGS

Figure 116 indicates that all program definitions assigned to resource group HOTELRES will be installed into the systems identified by target scope SCSCG001.

```

----- Browse Resource Assignment for SCSPLEX Page 1 -----
COMMAND ==>

Name                HOTPROGS
Description          HOTEL RESERVATION PROGRAMS

Target Scope        SCSCG001  CICS System or System Group
Related Scope       CICS System or System Group

Resource Group      HOTELRES  RESGROUP Containing Definitions
Resource Type       PROGDEF   Resource Definition Type

Usage               LOCAL    Assignment Type (LOCAL, REMOTE)
Mode                N/A     Usage Qualifier by Resource Type
Referenced Assign   Resource Assignment Definition name
Override            NONE    Scope of Override (TARGET, RELATED, BOTH, NONE)

```

Figure 116. Resource Assignment BROWse

Figure 117 on page 107 displays the CICS systems that are included in target scope SCSCG001.

```

02JUL1998 16:52:15 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =MAS=====SCSPLEX==SCSCG001=02JUL1998==16:52:15====CPSM=====
CMD Name      Type  CMAS      Status  MON RTA WLM Description
-----
SCSCPAA1 LOCAL SCSCPCA1 ACTIVE YES NO NO AOR1 for plex SCSPLEX
SCSCPAA2 LOCAL SCSCPCA1 ACTIVE YES NO NO AOR2 for plex SCSPLEX
SCSCPAA3 LOCAL SCSCPCB1 ACTIVE YES NO NO AOR3 for plex SCSPLEX
SCSCPAA4 LOCAL SCSCPCB1 ACTIVE YES NO NO AOR4 for plex SCSPLEX

```

Figure 117. Topology MAS View: Scope=SCSCG001

In this example we have identified program definitions that have a logical scope of HOTELRES; have been assigned a resource assignment, HOTPROGS; and have a target scope of SCSCG001. Programs identified within this group will be installed in the systems identified in Figure 117, which are SCSCPAA1 (AOR1), SCSCPAA2 (AOR2), SCSCPAA3 (AOR3), and SCSCPAA4 (AOR4).

Defining logical business application scopes enables you to control the distribution and management of application resources to target systems, which can encompass either the whole CICSplex or a subset of that enterprise, down to the single CICS system. An install of a CICS resource is propagated to all systems identified in the target scope.

6.3 Propagation of Changes across a CICSplex

CICSplex SM BAS enables you to install resources into all managed CICS systems at either the individual resource definition level (for example, one program, map, or transaction); collectively at the resource group level, which would enable you to install all program definitions with one install command; or at the resource description level, at which you could install all resources associated with a RESDESC with a single install command. These processes install the resources into all related CICS systems that are incorporated into the CICS system group definitions. These systems are identified in the RASGNDEF target scope values.

6.3.1.1 Single Resource Installation

To install a single resource into all related MASs, follow these steps:

1. From the ADMRES view, select the required resource type, for example, PROGDEF.
2. Tab down to the program you want to install and type INS in the CMD field. Fill out the fields that appear on the Install Resource panel (Figure 118 on page 108).

```

----- Install Resource for SCSPLEX -----
COMMAND ==>

Name          DSWHR1VV   Version    1
Type          PROGDEF

Target Scope  ==>
Related Scope ==>

Usage         ==> LOCAL           How resource is referenced
Mode          ==> N/A             Resource use qualifier
Override      ==> NONE           Scope Attribute overrides applied

Notify        ==> NO             Precheck (INACTIVE, RELEASE, FULL, NO)
State Check   ==> NO             Consistent State (YES, NO)
Force Install ==> NO             Unconditional install (YES, NO)

Override string expression: (Type MODIFY to list modifiable columns)
==>

Press ENTER to Install
Enter END or CANCEL to cancel without installing

```

Figure 118. Install Resource Panel for a Single Resource

3. The Target Scope is a required field. Leave this field blank and press Enter to get to a view of all defined target scopes (see Figure 119).

```

----- List of CICSplex Resources----- Row 1 to 21
COMMAND ==>
Target Scope requires a specific resource.
Select a single entry, change the key, or enter END or CANCEL to terminate

Resources matching key: *

C Name      Description                               Type      Status
-----
- ALLCICS   All CICS's                                   CSYSGRP   N/A
- SCSCGLSR 4.1 AORs for non-RLS                       CSYSGRP   N/A
- SCSCGRLS CICS TS AORs + FOR                         RLS CSYSGRP   N/A
S SCSCG001 All AORs                             CSYSGRP   N/A
- SCSCG003 CICS TS AORs                             CSYSGRP   N/A
- SCSCPAA1 AOR1 for plex SCSPLEX                CSYSDEF   ACTIVE
- SCSCPAA2 AOR2 for plex SCSPLEX                CSYSDEF   ACTIVE
- SCSCPAA3 AOR3 for plex SCSPLEX                CSYSDEF   ACTIVE
- SCSCPAA4 AOR4 for plex SCSPLEX                CSYSDEF   ACTIVE
- SCSCPAA9 aor9 for plex SCSPLEX                CSYSDEF   INACTIVE
- SCSCPFA1 FOR for plex SCSPLEX                 CSYSDEF   ACTIVE
- SCSCPTA1 TOR for plex scsplex                 CSYSDEF   ACTIVE
- SCSCPTA2 Second TOR for plex scsplex          CSYSDEF   ACTIVE
- SCSCTOR  All TORs                                   CSYSGRP   N/A

```

Figure 119. List of CICSplex Resources: Target Scope Blank

4. Select (S) a Target Scope value from this list to insert it into the Install Resource panel (Figure 120 on page 109). If the resources you want to install have previously been installed, the Force Install option must be set to YES to allow for an unconditional install. Note that the Target Scope field contains the value selected in Figure 119.

```

----- Install Resource for SCSPLEX -----
COMMAND ==>

Name          DSWHR1VV   Version    1
Type          PROGDEF

Target Scope  ==> SCSCG001
Related Scope ==>

Usage         ==> LOCAL           How resource is referenced
Mode          ==> N/A             Resource use qualifier
Override      ==> NONE           Scope Attribute overrides applied

Notify        ==> NO             Precheck (INACTIVE, RELEASE, FULL, NO)
State Check   ==> NO             Consistent State (YES, NO)
Force Install ==> yes             Unconditional install (YES, NO)

Override string expression: (Type MODIFY to list modifiable columns)
==>

Press ENTER to Install
Enter END or CANCEL to cancel without installing

```

Figure 120. Install Resource: Target Scope = SCSCG001, Force Install = YES

5. The installation of program DSWHR1VV into the systems identified by target scope SCSCG001 will proceed. The only indication you will receive will be that for a failure. Successful install data can be found in the MSGUSR log for the related systems included in the target scope. Program DSWHR1VV has been installed in all the CICS systems identified in Figure 117 on page 107.

6.3.1.2 Installing Resources Using the RESGROUP

To install a group of resources identified by the RESGROUP into target scope SCSCG001, follow these steps:

1. From the ADMBAS view, select the RESGROUP option. Issue the INStall command next to the RESGROUP definition from the list of defined RESGROUPs. Figure 121 on page 110 shows the Install Resource panel.

```

----- Install Resource for SCSPLEX -----
COMMAND ==>

Group Name          HOTELRES      Resource Group
Assignment          ==>          Resource Assignment name
Type                ==>          Resource Type to process

Ref Assignment      ==>          Referenced Resource Assignment name

Target Scope        ==>
Related Scope       ==>

Usage               ==> LOCAL      How resource is referenced
Mode                ==> N/A        Resource use qualifier
Override            ==> NONE       Scope Attribute overrides applied

Notify              ==> NO         Precheck (INACTIVE, RELEASE, FULL, NO)
State Check         ==> NO         Consistent State (YES, NO)
Force Install       ==> NO         Unconditional install (YES, NO)

Press ENTER to Install
Type UP or Down to view Assignment Select/Override panel
Enter END or CANCEL to cancel without installing

```

Figure 121. Install Resource Panel for a Resource Group

2. The Type field must contain a valid resource type value. Leave this field blank or scroll down to get a list of valid resource types. Select (S) the resource type to be installed (Figure 122).

```

----- List of Available Values ----- Row 1 to 18
COMMAND ==>
Resource type requires a specific value.
Select a single entry or enter END or CANCEL to terminate.

    Available values for Table: RESGROUP Attribute: RESTYPE

C Value
- -----
- CONNDEF
- DB2CDEF
- DB2EDEF
- DB2TDEF
- FILEDEF
- JRNLDEF
- JRNMDEF
- LSRDEF
- MAPDEF
- PARTDEF
- PROFDEF
S PROGDEF
- PRTNDEF
- TDQDEF
- TERMDEF
- TRANDEF
- TRNCLDEF
- TYPTMDEF

```

Figure 122. Install RESGROUP Resource Type Options

3. In the Target Scope Resource view (Figure 119 on page 108), select the appropriate target scope to be inserted into the Target Scope field. Press

Enter to execute the install process. As previously indicated, Force Install = YES is required to process resources that are already installed.

6.3.1.3 Installing Resources Using the RESEDESC

All resources belonging to a resource description can be installed simultaneously to all systems identified in the target scope for each resource definition. Follow these steps:

1. Select the RESEDESC option from the ADMBAS view to get a list of resource description definitions (Figure 123).

```

06JUL1998 19:07:38 ----- INFORMATION DISPLAY -----
COMMAND ===>                                     SCROLL ===>
CURR WIN ===> 1           ALT WIN ===>
W1 =RESEDESC=====SCSPLEX==*=====06JUL1998==19:07:38====CPSM=====
CMD Name      Scope Scope      Description
-----
MAP HOTELRES YES  HOTELRES HOTEL RESERVATION APPLICATION
LSRLIST NO
PAALIST NO
PFALIST NO
PTALIST NO
RLSLIST NO
HOTRES AOR CONNECTION AND SESS
HOTRES FOR CONNECTIONS AND SES
HOTRES TOR CONNECTIONS
HOTEL RESERVATION CICS/ESA 4.1
HOTEL RESERVATION CICS 1.2

```

Figure 123. RESEDESC Definition Options: MAP Command

2. Issue the MAP command to display all resources that will be installed as part of the RESEDESC HOTELRES (Figure 124).

```

----- MAP of RESEDESC HOTELRES ----- Row 1 of 9
COMMAND ===>
RESEDESC      RASINDSC      RASGNDEF      RESGROUP      RESTYPE      RESDEF
-----
HOTELRES -- <-----> +- HOTFIL12 -- HOTELRES -- FILEDEF -- HOTEL1  1
                   | - HOTFIL41 -- HOTELRES -- FILEDEF -- HOTEL1  1
                   | - HOTMAPS  -- HOTELRES -- MAPDEF  +- MAPHR1II 1
                   |                                     |- MAPHR100 1
                   |                                     +- MAPHR200 1
                   | - HOTPROGS -- HOTELRES -- PROGDEF +- DSWHR1VV 1
                   |                                     +- DSWHR2VV 1
                   +- HOTTRAN  -- HOTELRES -- TRANDEF +- HR1    1
                   |                                     +- HR2    1
----- End Of Map -----

```

Figure 124. RESEDESC Definition Options: MAP View

3. Issue the INStall command to display the Install Resource Description panel (Figure 125 on page 112 and Figure 126 on page 112).

```

06JUL1998 19:07:38 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =REDESC=====SCSPLEX==*=====06JUL1998==19:07:38====CPSM=====
CMD Name      Scope Scope      Description
-----
INS HOTELRES YES  HOTELRES HOTEL RESERVATION APPLICATION
LSRLIST NO
PAALIST NO      HOTRES AOR CONNECTION AND SESS
PFALIST NO      HOTRES FOR CONNECTIONS AND SES
PTALIST NO      HOTRES TOR CONNECTIONS
RLSLIST NO      HOTEL RESERVATION CICS 1.2

```

Figure 125. REDESC Definition Options: INStall

```

----- Install Resource Description for SCSPLEX -----
COMMAND ==>
Name          HOTELRES      Description to be installed

Notify        ==> NO          Precheck (INACTIVE, RELEASE, FULL, NO)
State Check   ==> NO          Consistent State (YES, NO)
Force Install ==> NO          Unconditional Install (YES, NO)

Press ENTER to Install Resource Description
Enter END or CANCEL to cancel without installing.

```

Figure 126. REDESC INStall

4. All resources associated with REDESC HOTELRES will be installed. The Force Install option must be set to YES, if you want to do an unconditional install of previously installed resources.

6.3.2 Adding a CICS System to a CICSplex SM Target Scope

As business requirements for increased processing resources eventuate, it will be necessary to add new CICS regions and incorporate them into an existing CICSplex SM target scope.

To add AOR SCSCPA7 into our current CICSplex SCSPLEX and then incorporate the new CICS system into target AOR scopes SCSCG001 and SCSCG003, we followed these steps:

1. Created the new CICS system definition.
2. Created CICS system links.
3. Added the new CICS system to the related target AOR scopes.
4. Checked the WLMSPEC view to identify the WLMSPEC name associated with the target AOR scopes.
5. Checked the WLMWAOR view to ensure that the new CICS system is associated with the correct workload.

6.3.2.1 Create CICS System Definition (CICSSYS)

To create a CICSSYS definition in CICSplex SM for the new CICS system we used another CICS system as a model. We used CICS system PAA4 as the model, which was a CICS TS running under the same CMAS as the system to be added.

We followed these steps to create CICSSYS:

1. Issued the CICSSYS command.
2. From the CICSSYS view, issued line command CRE (Figure 127).

```
09JUL1998 13:54:02 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =CICSSYS=====SCSPLEX==SCSPLEX==09JUL1998==13:54:02====CPSM=====
CMD CICS      Description                          Model
--- System   -----
MODEL        model system
SCSCPAA1 AOR1 for plex SCSPLEX
SCSCPAA2 AOR2 for plex SCSPLEX
SCSCPAA3 AOR3 for plex SCSPLEX
cre SCSCPAA4 AOR4 for plex SCSPLEX
SCSCPFA1 FOR for plex SCSPLEX
SCSCPTA1 TOR for plex scsplex
SCSCPTA2 Second TOR for plex scsplex
```

Figure 127. CICSSYS CREate: Using Model Definition

3. In the CICSSYS Create System panel (Figure 128), updated the System Name, Description, APPLID, and SYSIDNT related to the new CICS system.
4. Pressed Enter to have the new CICS system known to CICSplex SM.

```
----- Create System - General Attributes - for SCSPLEX -----
COMMAND ==>

System Name ==> SCSCPAA7
Description ==> AOR7for plex SCSPLEX

Primary CMAS or Generic ==> SCSCPCB1    CMAS to which CICS normally connects
Active Period or Generic ==>
APPLID ==> SCSCPAA7    VTAM application ID
SYSIDNT ==> PAA7      System communication ID

SECURITY
CICS Command Checking ==> *    Simulated CICS Cmd Checks (YES, NO, or *)
CICS Resource Checking ==> *    Simulated CICS Res Checks (YES, NO, or *)
Exemption Checking ==> *    Check for Exempt Users (YES, NO, or *)

TIME
Time Zone ==> *    Time Zone for System (B-Z or *)
Time Zone Offset ==> *    Time Zone Offset for System (0-59 or *)
Daylight Savings Time ==> *    Daylight Savings for System (YES, NO, or *)

Type DOWN or UP to view other System screens.
Press ENTER to create the System.
Type END or CANCEL to cancel without creating.
```

Figure 128. CICSSYS Create System Panel: CICS System Attributes

6.3.2.2 Create CICS System Links

To create the CICS system links, we followed these steps:

1. From the CICSSYS view, issued line command CON against our new CICS system (Figure 129).

```

09JUL1998 19:17:05 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
W1 =CICSSYS=====SCSPLEX==SCSPLEX==09JUL1998==19:17:05====CPSM=====
CMD CICS      Description                               Model
--- System   -----
MODEL      model system
SCSCPAA1 AOR1 for plex SCSPLEX
SCSCPAA2 AOR2 for plex SCSPLEX
SCSCPAA3 AOR3 for plex SCSPLEX
SCSCPAA4 AOR4 for plex SCSPLEX
CON SCSCPAA7 AOR7 for plex SCSPLEX
SCSCPFA1 FOR for plex SCSPLEX
SCSCPTA1 TOR for plex scsplex
SCSCPTA2 Second TOR for plex scsplex

```

Figure 129. CICSSYS CONNDEF Command

2. Selected the model system and pressed Enter (Figure 130).

```

09JUL1998 19:17:05 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
----- List of CICSplex Resources----- Row 1 to 9
COMMAND ==>                                     Scroll ==>
Model system requires a specific resource.
Select a single entry, change the key, or enter END or CANCEL to terminate

Resources matching key: *

C Name      Description                               Type          Status
-----
- MODEL      model system                                     CSYSDEF       INACTIVE
- SCSCPAA1 AOR1 for plex SCSPLEX                         CSYSDEF       ACTIVE
- SCSCPAA2 AOR2 for plex SCSPLEX                         CSYSDEF       ACTIVE
- SCSCPAA3 AOR3 for plex SCSPLEX                         CSYSDEF       ACTIVE
S SCSCPAA4 AOR4 for plex SCSPLEX                         CSYSDEF       ACTIVE
- SCSCPAA7 AOR7 for plex SCSPLEX                         CSYSDEF       ACTIVE
- SCSCPFA1 FOR for plex SCSPLEX                         CSYSDEF       ACTIVE
- SCSCPTA1 TOR for plex scsplex                         CSYSDEF       ACTIVE
- SCSCPTA2 Second TOR for plex scsplex                   CSYSDEF       ACTIVE

```

Figure 130. Select the Relevant Model Resource

3. Selected each system, one by one, where communication links are required (Figure 131 on page 115). The input consists of CONNDEF and SESSDEF names. Enter returns to the CICSSYS view.

```

----- Connect CICS Systems for SCSPLEX ----- Row 1 to 3
COMMAND ==>                                     Scroll ==>

Primary CICS System      SCSCPAA7

ConnDef Name      ==> CONN      Version ==>
SessDef Name      ==> SESS      Version ==>

Sel System  Id  Applid  Dir Description                      Result
-----
- SCSCPFA1 PFA1 SCSCPFA1 FRO FOR for plex SCSPLEX
- SCSCPTA1 PTA1 SCSCPTA1 FRO TOR for plex scsplex
S SCSCPTA2 PTA2 SCSCPTA2 FRO Second TOR for plex scsplex

```

Figure 131. CICS Systems Connection Panel

4. Issued the SYSLINK command to display link details (Figure 132).

```

09JUL1998 19:19:35 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =SYSLINK=====SCSPLEX==SCSPLEX==09JUL1998==19:19:35====CPSM=====
CMD Primary  Secondar ConnDef  Ver SessDef  Ver
-----
SCSCPFA1 SCSCPAA1 CONN      1 SESS    1
SCSCPFA1 SCSCPAA2 CONN      1 SESS    1
SCSCPFA1 SCSCPAA3 CONN      1 SESS    1
SCSCPFA1 SCSCPAA4 CONN      1 SESS    1
SCSCPFA1 SCSCPAA7 CONN      1 SESS    1
SCSCPTA1 SCSCPAA1 CONN      1 SESS    1
SCSCPTA1 SCSCPAA2 CONN      1 SESS    1
SCSCPTA1 SCSCPAA3 CONN      1 SESS    1
SCSCPTA1 SCSCPAA4 CONN      1 SESS    1
SCSCPTA1 SCSCPAA7 CONN      1 SESS    1
SCSCPTA2 SCSCPAA1 CONN      1 SESS    1
SCSCPTA2 SCSCPAA2 CONN      1 SESS    1
SCSCPTA2 SCSCPAA3 CONN      1 SESS    1
SCSCPTA2 SCSCPAA4 CONN      1 SESS    1
SCSCPTA2 SCSCPAA7 CONN      1 SESS    1

```

Figure 132. SYSLINK View with AOR SCSCPAA7

5. To use the same definitions as in our model system we:

- a. From the CICSSYS view, issued line command BAS (Figure 133 on page 116).

```

09JUL1998 19:21:52 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
W1 =CICSSYS=====SCSPLEX==SCSPLEX==09JUL1998==19:21:52====CPSM=====
CMD CICS      Description                          Model
--- System   -----
MODEL      model system
SCSCPAA1 AOR1 for plex SCSPLEX
SCSCPAA2 AOR2 for plex SCSPLEX
SCSCPAA3 AOR3 for plex SCSPLEX
bas SCSCPAA4 AOR4 for plex SCSPLEX
SCSCPAA7 AOR7 for plex SCSPLEX
SCSCPFA1 FOR for plex SCSPLEX
SCSCPTA1 TOR for plex scsplex
SCSCPTA2 Second TOR for plex scsplex

```

Figure 133. CICSSYS View: BAS Command Issued

Figure 134 shows a map of system definitions for region SCSCPAA4.

```

----- MAP of CSYSDEF SCSCPAA4 ----- Row 1 of 7
COMMAND ==>                                     Scroll ==>
(S)CSYSDEF      SCOPE      SCOPETYP      RESDESC      RASINDSC      RASGNDEF
(G)CSYSGRP
-----
(S)SCSCPAA4 +- TARGET  +- FILEDEF ----- HOTFIL12
                    - MAPDEF ----- HOTMAPS
                    |
                    - PROGDEF ----- HOTPROGRS
                    +- TRANDEF ----- HOTTRAN

```

Figure 134. Panel Displayed When BAS Command Is Issued in CICSSYS

- b. Checked the RASGNDEFs with which this system is associated, pressed PF3, and issued the RASGNDEF command (Figure 135).

```

09JUL1998 19:24:18 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
>W1 =RASGNDEF=====SCSPLEX==SCSPLEX==09JUL1998==19:24:18====CPSM=====
CMD Name      ResGroup ResType  Target  Usage Related  Description
-----
HOTFIL12 HOTELRES FILEDEF  SCSCG003 LOCAL   HOTEL RESERVATION
HOTFIL41 HOTELRES FILEDEF  SCSCGLSR REMOT SCSCPFA1 HOT RES FILE AOR 4.1
HOTMAPS HOTELRES MAPDEF   SCSCG001 LOCAL   HOTEL RESERVATION
HOTPROGS HOTELRES PROGDEF  SCSCG001 LOCAL   HOTEL RESERVATION
HOTTRAN HOTELRES TRANDEF  SCSCG001 LOCAL   HOTEL RESERVATION

```

Figure 135. RASGNDEF View

- c. Checked the target scopes for the RASGNDEF in which we were interested.
- d. Issued the CICSGRP command.
- e. From the CICSGRP view, issued line command ADD (Figure 136 on page 117).

```

09JUL1998 19:27:07 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =CICSGRP=====SCSPLEX==SCSPLEX==09JUL1998==19:27:07====CPSM=====
CMD System  Description
--- Group  -----
ALLCICS  All CICS's
BASLSR   All AORs running BAS + LSR
BASPAA   All AORs running BAS + WLM
BASRLS   All AORs + FOR  BAS + RLS
BASTOR   All TORs running BAS
SCSCGLSR 4.1 AORs for non-RLS
SCSCGRLS CICS TS AORs + FOR          RLS
ADD SCSCG001 All AORs
SCSCG002 All TORs
= SCSCG003 CICS TS AORs
SCSCTOR  All TORs
SCTSNRLS CICS TS AORs + FOR          non-RLS

```

Figure 136. CICSGRP View: Add and = (repeat) Command

f. Updated the Member field for SCSCG001 and SCSCG003 with our CICSSYS name (Figure 137 and Figure 138 on page 118).

```

----- Add Member to System Group for SCSPLEX -----
COMMAND ==>

System Group Name      SCSCG001
Description             All AORs

Member                 ==> SCSCPAA7   CICS System, Group or Generic

Component Spec         Inherit

Press ENTER to add Member to System Group.
Type END or CANCEL to cancel without adding.

```

Figure 137. Add Member to System Group SCSCG001

```

----- Add Member to System Group for SCSPLEX -----
COMMAND ==>

System Group Name      SCSCG003
Description             CICS TS AORs

Member                 ==> SCSCPAA7   CICS System, Group or Generic

Component Spec         Inherit

Press ENTER to add Member to System Group.
Type END or CANCEL to cancel without adding.

```

Figure 138. Add Member to System Group SCSCG003

CICS system SCSCPAA7 has now been added to system groups SCSCG001 and SCSCG003.

- g. Checked the Install Resources field in the CICSSYS view to be sure that the definitions will be installed at startup. Starting your CICS system with the CICSplex SM agent code will connect it to the CICSplex, ensuring that EYUPARMS is correct and all required definitions are installed. This system must also be a target system for the workload.
- h. Checked WLMSPEC to identify the AOR scope that should include the new CICS system (Figure 139).

```

09JUL1998 19:35:05 ----- INFORMATION DISPLAY -----
COMMAND ==>                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =WLMSPEC=====SCSPLEX==SCSPLEX==09JUL1998==19:35:05====CPSM=====
CMD Name   Affinity Affinity AOR   Cre Match Event Description
--- ----- Relation Lifetime Scope--- Aff Key--- Name-----
SCSWS01Q          SCSCG001 N/A USERID

```

Figure 139. WLMSPEC View: Target AOR Scope Identified

- i. Checked the WLMWAOR view (Figure 140) to ensure that the new CICS system is included in the WLMSPEC identified in Figure 139.

```

09JUL1998 19:46:29 ----- INFORMATION DISPLAY -----
COMMAND ==>                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =WLMWAOR=====SCSPLEX==SCSPLEX==09JUL1998==19:46:29====CPSM=====
CMD Workload Ownr AOR      Status   Connection
----- Lost-----
SCSWS01Q PCB1 SCSCPAA1 ACTIVE
SCSWS01Q PCB1 SCSCPAA2 ACTIVE
SCSWS01Q PCB1 SCSCPAA3 ACTIVE
SCSWS01Q PCB1 SCSCPAA4 ACTIVE
SCSWS01Q PCB1 SCSCPAA7 ACTIVE
SCSWS01Q PCB1 SCSCPFA1 QUIESCED

```

Figure 140. WLMWAOR View

Message EYUBN0099I, "SCSCPAA7 Resource creation processing complete", indicates the successful creation of the new CICSplex SM CICS system definition. Figure 141 on page 119 shows the CICS view of our environment after we added region SCSCPAA7.

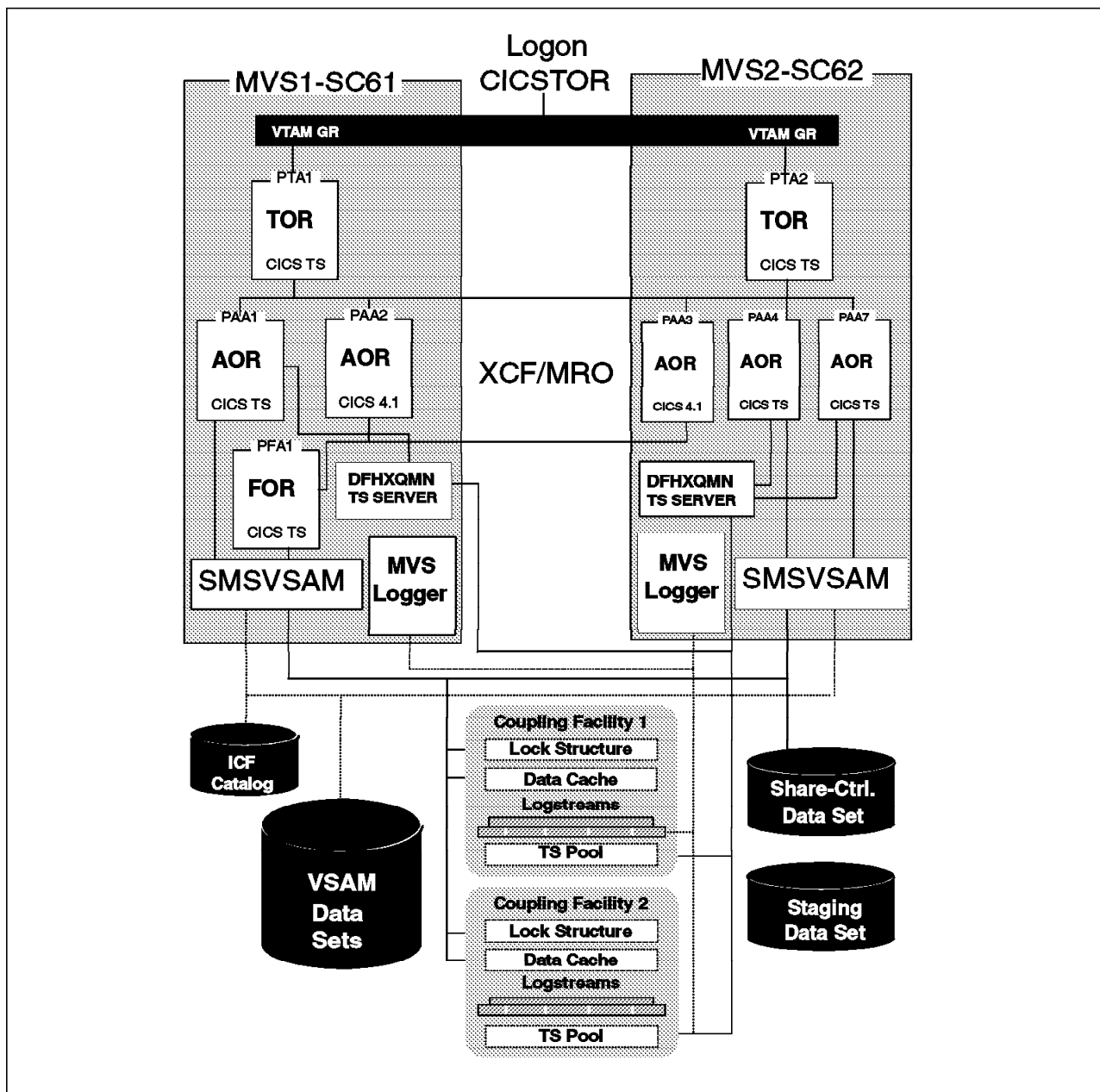


Figure 141. CICS View of Our Environment with AOR SCSCPAA7

Figure 142 on page 120 shows the CICSplex SM view of our environment after we added region SCSCPAA7.

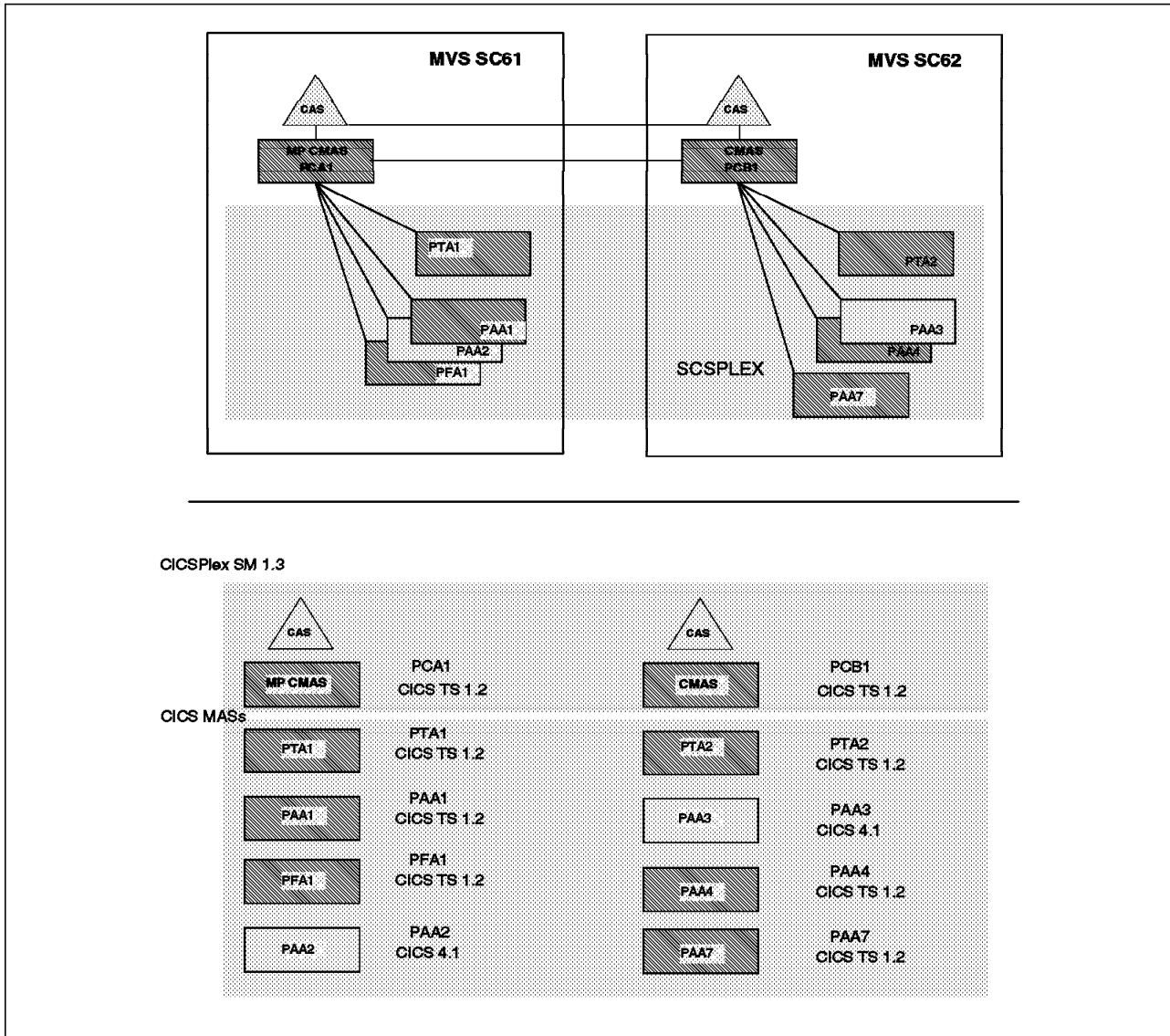


Figure 142. CICSplex SM View of Our Environment with AOR SCSCPAA7

6.3.3 Migrating an Application from Development to Production

In this section we explain the procedures required to:

- Migrate an application from a development environment to a production environment, where both development and production share the same data repository
- Migrate definitions from one data repository to another, using the batched repository-update facility.

6.3.3.1 Migrating an Application: Same Data Repository

Follow these steps to migrate an application when the development and production environments share the same data repository:

1. From the RESDESC view (Figure 143 on page 121), create a new resource description, using the development resource description as a model.


```

10JUL1998 13:23:30 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
W1 =REDESC=====SCSPLEX==*=====10JUL1998==13:23:30====CPSM=====
CMD Name      Scope Scope  Description
-----
CRE HOTELRES YES  HOTELRES HOTEL RESERVATION APPLICATION
LSRLIST NO           HOTEL RESERVATION CICS/ESA 4.1
PAALIST NO           HOTRES AOR CONNECTION AND SESS
PFALIST NO           HOTRES FOR CONNECTIONS AND SES
PTALIST NO           HOTRES TOR CONNECTIONS
RLSLIST NO           HOTEL RESERVATION CICS 1.2

```

Figure 143. REDESC: Create Using a Model Definition

2. Enter the Name, Description, and Scope Name and set Auto Install to YES in the Create Resource Description panel (Figure 144).

```

----- Create Resource Description for SCSPLEX Page 1 -----
COMMAND ==>
Name           ==> PHOTELRA
Description    ==> PROD HOTEL RESERVATION APPL

Valid Scope   ==> YES      Add to Topology Scope Set (YES,NO)
Scope Name    ==> PHOTELRA Name to be used as Scope

Model         ==>          Resource Description copy model

ResGroup Scope ==>          Scope applied to associated ResGroups

Auto Install  ==> YES      Add Description Resources to Scope (YES,NO)

Press ENTER to create Resource Description.
Enter UP or DOWN to view other screens.
Enter END or CANCEL to cancel without creating.

```

Figure 144. Create Resource Description Panel

3. Create new RASGNDEFs for each existing development application RASGNDEF that is to be migrated. The = command generates sequential Create panels (Figure 145).

```

10JUL1998 14:21:06 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==>
CURR WIN ==> 1           ALT WIN ==>
>W1 =RASGNDEF=====SCSPLEX==*=====10JUL1998==14:21:06====CPSM=====
CMD Name      ResGroup ResType Target Usage Related Description
-----
CRE HOTTRAN  HOTELRES TRANDEF SCSCG001 LOCAL HOTEL RESERVATION
= HOTFIL12  HOTELRES FILEDEF SCSCG003 LOCAL HOTEL RESERVATION
= HOTFIL41  HOTELRES FILEDEF SCSCGLSR REMOT SCSCPFA1 HOT RES FILE AOR 4.1
= HOTMAPS   HOTELRES MAPDEF SCSCG001 LOCAL HOTEL RESERVATION
= HOTPROGS  HOTELRES PROGDEF SCSCG001 LOCAL HOTEL RESERVATION

```

Figure 145. Create RASGNDEF for Production Environment Application

4. Enter the Name, Description, and Target Scope in the RASGNDEF Create Resource Assignment panel (Figure 146 on page 122).

```

----- Create Resource Assignment for SCSPLEX Page 1 -----
COMMAND ==>

Name           ==> PHOTRAN
Description    ==> HOTEL RESERVATION TRANSACTIONS

Target Scope   ==> PRODAORS   CICS System or System Group
Related Scope  ==>           CICS System or System Group

Resource Group ==> HOTELRES   RESGROUP Containing Definitions
Resource Type  ==> TRANDEF   Resource Definition Type

Usage          ==> LOCAL     Assignment Type (LOCAL, REMOTE)
Mode           ==> N/A      Usage Qualifier by Resource Type
Referenced Assign ==>      Resource Assignment Definition name
Override       ==> NONE     Scope of Override (TARGET, RELATED, BOTH,
                           NONE)

```

Figure 146. RASGNDEF Create Resource Assignment Panel

Figure 147 shows the MAP display of the newly created RASGNDEF.

```

----- MAP of RASGNDEF PHOTTRAN ----- Row 1 of 2
COMMAND ==>                               Scroll ==>
RASGNDEF  RESGROUP  RESTYPE  RESDEF
-----
PHOTTRAN --- HOTELRES --- TRANDEF  +- HR1      1
                                     +- HR2      1
----- End Of Map -----

```

Figure 147. MAP Panel of RASGNDEF for Production Application TRANDEF

- Issue the ADD command in the RASGNDEF view to associate assignments with descriptions. Process each relevant entry (Figure 148).

```

10JUL1998 14:39:34 ----- INFORMATION DISPLAY -----
COMMAND ==>                               SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =RASGNDEF=====SCSPLEX==*=====10JUL1998==14:39:34====CPSM=====
CMD Name   ResGroup ResType  Target  Usage Related  Description
-----
ADD PHOTFI12 HOTELRES FILEDEF  PROTAOR LOCAL      HOTEL RESERVATION
= PHOTFI41 HOTELRES FILEDEF  PR041AOR REMOT SCSCPFA1 HOT RES FILE AOR 4.1
= PHOTMAPS HOTELRES MAPDEF   PRODAORS LOCAL      HOTEL RESERVATION
= PHOTPROG HOTELRES PROGDEF  PRODAORS LOCAL      HOTEL RESERVATION
= PHOTTRAN HOTELRES TRANDEF  PRODAORS LOCAL      HOTEL RESERVATION

```

Figure 148. RASGNDEF View: ADD

- Associate the production application RESDESC with the RASGNDEF (Figure 149 on page 123).

```

----- Associate Assignment to Description for SCSPLEX Page 1 -----
COMMAND ==>
Assignment Name   ==> PHOTFI12

Description Name  ==> PHOTELRA

Description       ==>

Group Name        ==>

Target Scope      ==>

Related Scope     ==>

Press ENTER to add Assignment to Description
Enter END or CANCEL to cancel without adding

```

Figure 149. RASGNDEF: Associate Assignment Panel

- Map the production environment RESEDESC, PHOTELRA (Figure 150 and Figure 151).

```

10JUL1998 14:47:05 ----- INFORMATION DISPLAY -----
COMMAND ==>                                SCROLL ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =RESEDESC=====SCSPLEX==*=====10JUL1998==14:47:05====CPSM=====
CMD Name      Scope Scope  Description
-----
HOTELRES YES  HOTELRES HOTEL RESERVATION APPLICATION
LSRLIST NO
PAALIST NO    HOTELRES HOTRES AOR CONNECTION AND SESS
PFALIST NO    HOTELRES HOTRES FOR CONNECTIONS AND SES
MAP PHOTELRA YES PHOTELRA PROD HOTEL RESERVATION APPL
PTALIST NO    HOTELRES HOTRES TOR CONNECTIONS
RLSLIST NO    HOTELRES HOTEL RESERVATION CICS 1.2

```

Figure 150. RESEDESC: MAP Command

```

----- MAP of RESEDESC PHOTELRA ----- Row 1 of 9
COMMAND ==>                                Scroll ==>
RESEDESC      RASINDSC      RASGNDEF      RESGROUP      RESTYPE      RESEDEF
-----
PHOTELRA --- <-----> +- PHOTFI12 --- HOTELRES --- FILEDEF --- HOTEL1 1
                               | PHOTFI41 --- HOTELRES --- FILEDEF --- HOTEL1 1
                               | PHOTMAPS --- HOTELRES --- MAPDEF  +- MAPHR1I 1
                               |                               | MAPHR10 1
                               |                               +- MAPHR20 1
                               | PHOTPROG --- HOTELRES --- PROGDEF +- DSWHR1VV 1
                               |                               +- DSWHR2VV 1
                               +- PHOTTRAN --- HOTELRES --- TRANDEF +- HR1 1
                               |                               +- HR2 1
----- End Of Map -----

```

Figure 151. RESEDESC: MAP Panel of Resource Description PHOTELRA

- If your production environment is running in the same CICSplex, you can install all definitions relating to the migrated production application by installing at the resource description level. From the RESEDESC view, issue the INStall command (Figure 152 on page 124 and Figure 153 on page 124).

```

10JUL1998 14:49:07 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =RESEDESC=====SCSPLEX==*=====10JUL1998==14:49:07====CPSM=====
CMD Name      Scope Scope  Description
-----
HOTELRES YES  HOTELRES HOTEL RESERVATION APPLICATION
LSRLIST NO
PAALIST NO    HOTRES AOR CONNECTION AND SESS
PFALIST NO    HOTRES FOR CONNECTIONS AND SES
INS PHOTELRA YES PHOTELRA PROD HOTEL RESERVATION APPL
PTALIST NO    HOTRES TOR CONNECTIONS
RLSLIST NO    HOTEL RESERVATION CICS 1.2

```

Figure 152. RESEDESC: INStall of Resource Description PHOTELRA

```

----- Install Resource Description for SCSPLEX -----
COMMAND ==>
Name          PHOTELRA          Description to be installed

Notify        ==> INACTIVE          Precheck (INACTIVE, RELEASE, FULL, NO)
State Check   ==> YES              Consistent State (YES, NO)
Force Install ==> NO                Unconditional Install (YES, NO)

Press ENTER to Install Resource Description
Enter END or CANCEL to cancel without installing.

```

Figure 153. RESEDESC: INStall Panel: Press Enter to INSTALL

6.3.3.2 Migrating Definitions from One Repository to Another: BATCHREP

To facilitate the migration of a business application and its related resource definitions from a CICS system executing in a different CICSplex, use the batched repository-update facility to extract the BAS definitions from one data repository for subsequent input to the target data repository.

Follow these steps:

1. DUMP your application definitions from the source data repository, using the batched repository-update facility. Figure 154 on page 125 shows the control statements we used to dump the relevant records.

```

CONTEXT SCSPLEX;
DUMP RESGROUP RESGROUP(HOT*);
DUMP RESDESC RESDESC(PHOT*);
DUMP RASGNDEF RESASSGN(PHOT*);
DUMP RASINDSC RESDESC(PHOT*)
      RESASSGN(PHOT*);
DUMP FILEDEF NAME(HOTEL1*);
DUMP MAPDEF NAME(MAPHR*);
DUMP PROGDEF NAME(DSWHR*);
DUMP TRANDEF NAME(HR*);
DUMP FILINGRP FILEGROUP(PHOT*)
      FILENAME(HOTEL1*);
DUMP MAPINGRP MAPGROUP(PHOT*)
      MAPNAME(MAPHR*);
DUMP PGMINGRP PROGGROUP(PHOT*)
      PROGRAM(DSWHR*);
DUMP TRNINGRP TRANGROUP(PHOT*)
      TRANNAME(HR*);

```

Figure 154. Input Statements To Be Used in BATCHREP Dump Process

2. Change the Context to the name of the CICSplex the maintenance point repository of which contains the application definitions and issue the BATCHREP command, or select (S) BATCHREP from the ADMCONFIG view.
3. From the BATCHREP view, issue the SUB command.
4. Update the Data Set Name field (Figure 155) with the data set name that contains the DUMP definitions.

```

----- Start Batch Run for SCSCPCA1 -----
COMMAND ==>

Data Set Name   ==> CPSM110.OUTPUT4

Data Set Member ==>

Print Class     ==> X

Print Node      ==> LOCAL

Output Userid   ==> CICSRS5

Run Type        ==> EXECUTE                (CHECK or EXECUTE)

Press ENTER to Run the Job.
Type END or CANCEL to cancel without Running.

```

Figure 155. Input Panel for the Batched Repository-Update Facility Run

5. Copy the job output from the BATCHREP process, using the SDSF *print odsn(...)* option, to a preallocated, fixed-block, lrecl=80 data set. Here is the procedure to print the generated output to a data set:
 - a. Select (S) the output file from the SDSF output queue.
 - b. Issue the *print odsn(xxx.xxx.xxx)* command, where *xxx.xxx.xxx* is the name of the preallocated data set.

- c. Issue the `prt 1 99999` command to write all lines of the output file to the output data set.
 - d. Issue the `prt close` command.
 - e. Edit the output data set.
6. Update the definitions to reflect the target system attributes.
 7. Update the RASGNDEF Target Scope and Related Scopes.
 8. Delete extraneous definitions.
 9. Delete all nonrelevant lines, such as DUMP statements and comments.
 10. Remove leading nulls from attribute fields, for example, `TWASIZE(0)` should be edited to `TWASIZE(0)`. Failure to remove leading nulls results in the following message: `EYUXU0215E xxxxxxxx - Invalid Value (0) following parameter (yyyyyyyyy)`, where `xxxxxxx` is the CMAS name, and `yyyyyyyyy` is the parameter.
 11. Update the file with the CONTEXT statement to identify the target CICSplex and update the scope fields to reflect the new target environment.

For details about the batched repository-update facility, see Chapter 15 of the *CICSplex SM Setup* manual and Chapter 5, “Cookbook Approach to BAS Migration” on page 39 of this redbook.

Successful processing of the prepared input data to the BATCHREP utility in the target system produces a RESDESC MAP (Figure 156).

```

----- MAP of RESDESC PHOTELRA -----
COMMAND ==>
RESDESC      RASINDSC      RASGNDEF      RESGROUP      RESTYPE      RESDEF
-----
PHOTELRA --- <-----> +- PHOTFI12 --- PHOTELRA --- FILEDEF --- HOTEL1  1
                        | - PHOTMAPS --- PHOTELRA --- MAPDEF  +- MAPHR1I  1
                        |                                     | - MAPHR10  1
                        |                                     +- MAPHR20  1
                        | - PHOTPROG --- PHOTELRA --- PROGDEF +- DSWHR1VV  1
                        |                                     +- DSWHR2VV  1
                        +- PHOTTRAN --- PHOTELRA --- TRANDEF +- HR1      1
                        |                                     +- HR2      1
----- End Of Map -----

```

Figure 156. RESDESC MAP of Migrated Application

Chapter 7. Housekeeping

In this chapter we discuss the considerations for backup and recovery procedures as well as security for the BAS facilities.

7.1 Backup and Recovery

If your planning and migration of definitions from the CSD to the data repository has been methodical, you will be aware of the RESGROUPs to which you have associated your resource definitions in the BAS data repository environment. If you want to invoke the fallback process, you can use the RESGROUP as the grouping criteria to enable the regression process to proceed. The BAS data repository to CSD migration routine shown in Figure 157 on page 128 uses the RESGROUP as mandatory input.

In most cases you would want all resource types in a specified RESGROUP to be migrated back to the CSD. You would also probably want the CSD group name into which the resources will be defined to be the same as the input RESGROUP name.

7.1.1 BAS Data Repository to CSD Migration Routine

The BAS data repository to CSD migration routine in Figure 157 on page 128 assumes that all resources in a specified RESGROUP are to be migrated. It also assumes that the input RESGROUP name will be the name that is to be used as the CSD group name when the CSD is repopulated. Alternatively, the routine allows you to select one type of resource from a RESGROUP (for example, a PROGDEF or a FILEDEF) to specify a CSD group name that is different from the RESGROUP name. Thus you can migrate selected resources and associate them with the BAS data repository resource groups, or with different CSD groups.

This routine can be used as long as you do not use resource assignments to deploy your resource definitions.

The REXX routine in Figure 157 on page 128 is only an example and migrates only PROGDEFs, FILEDEFs, TRANDEFs, and MAPDEFs, as specified in the ITSO sample application described in Chapter 5, "Cookbook Approach to BAS Migration" on page 39. You can modify this sample to migrate other resource definitions, as described in the *CICSplex SM Resource Tables Reference*.

If you want to migrate other types of resources, be aware that, for certain resource definitions, there are some minor differences in parameter format between data repository and CSD source (see Figure 159 on page 141).

The routine in Figure 157 on page 128 makes use of the CICSplex SM API. The API is discussed in detail in the *CICSplex/SM Application Programming Interface* manual. Additional sample CICSplex SM API programs are available on the World Wide Web at:

<http://www.software.ibm.com/ts/cicsplex>

```

/* REXX */
/*****/
/*
/* MODULE NAME = EYU#BAS1
/*
/* DESCRIPTIVE NAME = CPSM Sample API Program to convert
/*                      EYUDREP resources into DFHCSDUP input
/*
/* FUNCTION =
/*
/* To read EYUDREP resource definitions and convert them into
/* a format acceptable for input to DFHCSDUP.
/*
/* When invoked, the program will look for three input parameters
/* W_RESGROUP, W_RESTYPE, and W_CSDGROUP which should contain
/* following values:
/*
/* W_RESGROUP = The name of the RESGROUP you wish to convert.
/*              This parameter is mandatory, and is the basic
/*              unit against which the program works.
/*
/* W_RESTYPE = The type of EYUDREP resource definition you wish
/*              to convert in the format 'nnnnDEF' (i.e PROGDEF,
/*              TRANDEF etc.) This parameter is optional, and the
/*              default is 'ALL" (i.e ALL resource definitions
/*              in the specified RESGROUP are converted.)
/*
/* W_CSDGROUP = The name of the RDO group into which you want
/*              the converted definition(s) to exist on the CSD.
/*              If not specified, this defaults to the value of
/*              W_Resgroup.
/*
/* The program also depends upon the values held in the
/* W_CONTEXT and W_SCOPE declarations when establishing a
/* connection with CICSplex SM. They must take the following
/* values:
/*
/* W_CONTEXT = The name of a CMAS or CICSplex. Refer to the
/*              description of the EXEC CPSM CONNECT command
/*              for further information regarding the CONTEXT
/*              option.
/*
/* W_SCOPE = The name of a CICSplex, CICS system, or CICS
/*            system group within the CICSplex. Refer to the
/*            description of the EXEC CPSM CONNECT command
/*            for further information regarding the SCOPE
/*            option.

```

Figure 157 (Part 1 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input


```

/*                                                                    */
/* The sample establishes an API connection and issues a GET          */
/* command to retrieve program resource table entries which          */
/* match the specified input parameter.                              */
/*                                                                    */
/* Using the FETCH command each record in the result set is         */
/* retrieved. Once retrieved the TRANSLATE command is used to       */
/* convert those attributes of each record which are EYUDA or       */
/* CVDA values into meaningful character representations.           */
/* Records are then created in a format acceptable to DFHCSDUP.     */
/*                                                                    */
/* Finally, the API connection is terminated.                        */
/*                                                                    */
/*-----*/
/*NOTES :                                                            */
/* DEPENDENCIES = S/390, TSO                                         */
/* RESTRICTIONS = None                                               */
/* REGISTER CONVENTIONS =                                           */
/* MODULE TYPE = Executable                                          */
/* PROCESSOR = REXX                                                  */
/* ATTRIBUTES = Read only, Serially Reusable                        */
/*                                                                    */
/*-----*/
/*                                                                    */
/*ENTRY POINT = EYU#BAS1                                           */
/*                                                                    */
/* PURPOSE = All Functions                                           */
/*                                                                    */
/* LINKAGE = From TSO as a REXX EXEC.                                */
/*                                                                    */
/* INPUT = W_RESGROUP W_RESTYPE W_CSDGROUP                          */
/*                                                                    */
/*          W_RESGROUP - Mandatory at all times. No default         */
/*          W_RESTYPE - Optional, but mandatory if W_CSDGROUP is    */
/*                      specified. Default ALL.                     */
/*          W_CSDGROUP - Optional. No default                        */
/*                                                                    */
/* OUTPUT = sequential file: 'userid.CSDOUT.FILE'                   */
/*          - containing input statements to DFHCSDUP                */
/*                                                                    */
/*-----*/

```

Figure 157 (Part 2 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

```

/*                                                                 */
Address 'TSO'
Parse Value 0 0 With W_RESPONSE W_REASON .
Parse Value 1 With RESNUM .
/*-----*/
/*      CHANGE W_CONTEXT AND W_SCOPE TO MATCH YOUR INSTALLATION */
/*-----*/
W_CONTEXT = 'SCSPLEX'
W_SCOPE = 'SCSPLEX'
/*-----*/
/*      Get the calling parameters                                */
/*-----*/
Arg W_RESGROUP W_RESTYPE W_CSDGROUP
/*                                                                 */
/*-----*/
/* These are the Resource Table Definitions we are going to process.*/
/* Place additional definitions here, and increase value of         */
/* Restype.0 accordingly.                                          */
/*-----*/
Restype.1 = 'FILEDEF'
Restype.2 = 'MAPDEF'
Restype.3 = 'PROGDEF'
Restype.4 = 'TRANDEF'
Restype.0 = 4
/*-----*/
/*      Check that we have a RESGROUP specified                    */
/*-----*/
If W_RESGROUP = ' ' Then signal NO_RESGROUP
/*-----*/
/*      Check the other parameters                                */
/*-----*/
If W_RESTYPE = ' ' Then W_RESTYPE = 'ALL'
If W_CSDGROUP = ' ' Then W_CSDGROUP = W_RESGROUP

```

Figure 157 (Part 3 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

```

/*-----*/
/*      OBTAIN A CPSM API CONNECTION.          */
/*                                             */
/*      THE API WILL RETURN A TOKEN IDENTIFYING THE THREAD IN */
/*      VARIABLE W_THREAD.                    */
/*-----*/
Say 'Initializing API...'
XX = EYUINIT()
If XX <> 0 Then Signal UNEXPECTED
Say 'Establishing connection...'
XX = EYUAPI('CONNECT' ,
           'CONTEXT('W_CONTEXT')' ,
           'SCOPE('W_SCOPE')' ,
           'VERSION(0130)' ,
           'THREAD(W_THREAD)' ,
           'RESPONSE(W_RESPONSE)' ,
           'REASON(W_REASON)')
If XX <> 0 Then Signal UNEXPECTED
If W_RESPONSE <> EYURESP(OK) Then Signal NO_CONNECT
/*-----*/
/*      ALLOCATE OUTPUT FILE                  */
/*-----*/
Say 'Allocating output dataset.....'
"ALLOC FI(CSDOUT) DA(CSDOUT.FILE) MOD REUSE"
"EXECIO 0 DISKW CSDOUT (OPEN"
/* */
/*-----*/
/*      CHECK WHAT WE WANT IN THE RESGROUP   */
/*-----*/
If W_RESTYPE = 'ALL' Then Signal ALL_RESTYPE
/*-----*/
/*      SET TABLE LENGTH BASED ON RESOURCE TYPE */
/*-----*/
SET_RESTYPE:
  Select
  When W_RESTYPE = 'PROGDEF'
  Then Do
    W_INT0_OBJECTLEN = 152
    W_RESOURCE = 'PROGRAM'
    Signal GET_RESTYPE
  End
  When W_RESTYPE = 'FILEDEF'
  Then Do
    W_INT0_OBJECTLEN = 376
    W_RESOURCE = 'FILE'
    Signal GET_RESTYPE
  End

```

Figure 157 (Part 4 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

```

When W_RESTYPE = 'TRANDEF'
  Then Do
    W_INTTO_OBJECTLEN = 504
    W_RESOURCE = 'TRANSACTION'
    Signal GET_RESTYPE
  End
When W_RESTYPE = 'MAPDEF'
  Then Do
    W_INTTO_OBJECTLEN = 112
    W_RESOURCE = 'MAP'
    Signal GET_RESTYPE
  End
/*
/* If we got here W_RESTYPE is invalid
/*
/*
  Otherwise Signal NO_RESTYPE
End
/*-----*/
/* WE ONLY WANT A SPECIFIC RESTYPE, SO GO GET IT.
/*
/*
/* THEN CREATE A RESULT SET CONTAINING ALL ENTRIES OF
/* THE SPECIFIED RESOURCE IN THE DESIRED RESGROUP.
/*
/*
/* THE NUMBER OF ENTRIES FOUND IS RETURNED IN VARIABLE W_Recnt.
/*-----*/
GET_RESTYPE:
Say 'Get the' W_RESTYPE 'definition table...'
W_PARM = 'RESGROUP(' || W_RESGROUP || ')'.
W_PARMLEN = 'LENGTH'(W_PARM)
XX = EYUAPI('GET OBJECT('W_RESTYPE')' ,
           'COUNT(W_RECcnt)' ,
           'PARAM(W_PARM)' ,
           'PARMLEN('W_PARMLEN')' ,
           'RESULT(W_RESULT)' ,
           'THREAD(W_THREAD)' ,
           'RESPONSE(W_RESPONSE)' ,
           'REASON(W_REASON)')
If XX <> 0 Then Signal UNEXPECTED
If W_RESPONSE <> EYURESP(OK)
  Then If All_Flag = 'Y'
    Then Do
      Say 'No' W_RESTYPE 'Found on an ALL request'
      Signal CHECK_STATUS
    End
  Else Signal NO_GET

```

Figure 157 (Part 5 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

```

/*-----*/
/*  OK, FOUND THE ENTRIES..... */
/*  */
/*  FETCH EACH ENTRY AND USE TPARSE TO OBTAIN EACH ATTRIBUTE. */
/*  THEN MODIFY INTO DFHCSDUP INPUT RECORDS */
/*-----*/
Say 'Fetching' W_RECcnt W_RESTYPE 'entries...'
Do III = 1 To W_RECcnt
  XX = EYUAPI('FETCH INTO(W_INT0_OBJECT)' ,
             'LENGTH(W_INT0_OBJECTLEN)' ,
             'RESULT(W_RESULT)' ,
             'THREAD(W_THREAD)' ,
             'RESPONSE(W_RESPONSE)' ,
             'REASON(W_REASON)')
  If XX <> 0 Then Signal UNEXPECTED
  If W_RESPONSE <> EYURESP(OK) Then Signal NO_FETCH
  XX = EYUAPI('TPARSE OBJECT('W_RESTYPE)' ,
             'PREFIX(PFX)' ,
             'STATUS(W_RESPONSE)' ,
             'VAR(W_INT0_OBJECT.1)' ,
             'THREAD(W_THREAD)')
  If W_Response <> 'OK' Then Signal UNEXPECTED
  If PFX_DESCRIPTION = '' Then PFX_DESCRIPTION = 'XXXX'
  w_text.1 = 'DEFINE' W_RESOURCE '('PFX_NAME') GROUP('W_CSDGROUP)')
  w_text.2 = 'DESCRIPTION('PFX_DESCRIPTION' )'
  Select
  When W_RESTYPE = FILEDEF
  Then Do
  If PFX_KEYLENGTH = '' then W_KEY = ''
    Else W_KEY = 'KEYLENGTH('||PFX_KEYLENGTH)')
  If PFX_REMOTENAME = '' then W_REMOTENOUT = ''
    Else W_REMOTENOUT = 'REMOTENAME('||PFX_REMOTENAME)')
  If PFX_REMOTESYSTEM = '' then W_REMOTESOUT = ''
    Else W_REMOTESOUT = 'REMOTESYSTEM('||PFX_REMOTESYSTEM)')
  If PFX_NSRRGROUP = '' then W_NSR = ''
    Else W_NSR = 'NSRRGROUP('||PFX_NSRRGROUP)')
  If PFX_RECORDSIZE = '' then W_RECsize = ''
    Else W_RECsize = 'RECORDSIZE('||PFX_RECORDSIZE)')
  If PFX_MAXNUMRECS = '' then W_MAXNUM = ''
    Else W_MAXNUM = 'MAXNUMRECS('||PFX_MAXNUMRECS)')

```

Figure 157 (Part 6 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

```

w_recfm = substr(PFX_RECORDFORMAT,1,1)
w_text.3 = '  ADD(' PFX_ADD')  BROWSE(' PFX_BROWSE')  DELETE(' PFX_DELETE')'
w_text.4 = '  READ(' PFX_READ')  UPDATE(' PFX_UPDATE')  BACKUPTYPE(' PFX_BACKUPTYPE')'
w_text.5 = '  DATABUFFERS(' PFX_DATABUFFERS')  DISPOSITION(' PFX_DISPOSITION')'
w_text.6 = '  DSNSHARING(' PFX_DSNSHARING')  FWDRECOVLOG(' PFX_FWDRECOVLOG')'
w_text.7 = '  INDEXBUFFERS(' PFX_INDEXBUFFERS')  JNLADD(' PFX_JNLADD')'
w_text.8 = '  JNLREAD(' PFX_JNLREAD')  JNLSYNCREAD(' PFX_JNLSYNCREAD')'
w_text.9 = '  JNLSYNCWRITE(' PFX_JNLSYNCWRITE')  JNLUPDATE(' PFX_JNLUPDATE')'
w_text.10 = '  JOURNAL(' PFX_JOURNAL')  OPENTIME(' PFX_OPENTIME')'
w_text.11 = '  LSRPOOLID(' PFX_LSRPOOLID')'
w_text.12 = '  READINTEG(' PFX_READINTEG')  RECORDFORMAT(' W_RECFM')'
w_text.13 = '  RECOVERY(' PFX_RECOVERY')'
w_text.14 = '  RLSACCESS(' PFX_RLSACCESS')  STATUS(' PFX_STATUS')  STRINGS(' PFX_STRINGS')'
w_text.15 = '  TABLE(' PFX_TABLE')'
w_text.16 = '  DSNAME(' PFX_DSNAME')'
w_text.17 =  W_MAXNUM
w_text.18 =  W_REMOTENOUT
w_text.19 =  W_REMOTESOUT
w_text.20 =  W_RECSize
w_text.21 =  W_NSR
w_text.22 =  W_KEY
w_text.23 = ' '
End
When W_RESTYPE = MAPDEF
  Then Do
    w_text.3 = '  RESIDENT(' PFX_RESIDENT')  STATUS(' PFX_STATUS')'
    w_text.4 = '  USELPACOPY(' PFX_USELPACOPY')  USAGE(' PFX_USAGE')'
    w_text.5 = ' '
  End
When W_RESTYPE = PROGDEF
  Then Do
    If PFX_REMOTENAME = '' then W_REMOTENOUT = ''
      Else W_REMOTENOUT = '  REMOTENAME(' || PFX_REMOTENAME')'
    If PFX_REMOTESYSTEM = '' then W_REMOTESOUT = ' '
      Else W_REMOTESOUT = '  REMOTESYSTEM(' || PFX_REMOTESYSTEM')'
    If PFX_TRANSID = '' then W_TRANSID = ' '
      Else W_TRANSID = '  TRANSID(' || PFX_TRANSID')'
    w_text.3 = '  CEDF(' PFX_CEDF')  DATALOCATION(' PFX_DATALOCATION')'
    w_text.4 = '  EXECKEY(' PFX_EXECKEY')  RESIDENT(' PFX_RESIDENT')'
    w_text.5 = '  LANGUAGE(' PFX_LANGUAGE')  RELOAD(' PFX_RELOAD')  STATUS(' PFX_STATUS')'
    w_text.6 = '  USELPACOPY(' PFX_USELPACOPY')  USAGE(' PFX_USAGE')'
    w_text.7 =  W_REMOTENOUT
    w_text.8 =  W_REMOTESOUT
    w_text.9 =  W_TRANSID
    w_text.10 = ' '
  End

```

Figure 157 (Part 7 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

```

When W_RESTYPE = TRANDEF
Then Do
  If PFX_ALIAS = '' then W_ALIAS = ''
    Else W_ALIAS = '  ALIAS('||PFX_ALIAS)''
  If PFX_REMOTENAME = '' then W_REMOTENOUT = ' '
    Else W_REMOTENOUT = '  REMOTENAME('||PFX_REMOTENAME)''
  If PFX_REMOTESYSTEM = '' then W_REMOTESOUT = ' '
    Else W_REMOTESOUT = '  REMOTESYSTEM('||PFX_REMOTESYSTEM)''
  If PFX_TASKREQ = '' then W_TASKREQ = ' '
    Else W_TASKREQ = '  TASKREQ('||PFX_TASKREQ)''
  If PFX_PARTITIONSET = '' then W_PARTITION = ' '
    Else W_PARTITION = '  PARTITIONSET('||PFX_PARTITIONSET)''
  If PFX_XTRANID = '' then W_XTRANID = ' '
    Else W_XTRANID = '  XTRANID('||PFX_XTRANID)''
  If PFX_BREXIT = '' then W_BREXIT = ' '
    Else W_BREXIT = '  TASKREQ('||PFX_BREXIT)''
  If PFX_LOCALQ = 'N/A' then PFX_LOCALQ = ''
  w_text.3 = '  PROGRAM(' PFX_PROGRAM)  PROFILE(' PFX_PROFILE)''
  w_text.4 = '  ACTION(' PFX_FAILACTION)  CMDSEC(' PFX_CMDSEC)''
  w_text.5 = '  SHUTDOWN(' PFX_SHUTDOWN)  STATUS(' PFX_STATUS)''
  w_text.6 = '  TASKDATAKEY(' PFX_TASKDATAKEY)  TASKDATALOC(' PFX_TASKDATALOC)''
  w_text.7 = '  LOCALQ(' PFX_LOCALQ)  RESSEC(' PFX_RESSEC)''
  w_text.8 = '  STORAGECLEAR(' PFX_STORAGECLEAR)  RESTART(' PFX_RESTART)''
  w_text.9 = '  SPURGE(' PFX_SPURGE)  TPURGE(' PFX_TPURGE)  WAIT(' PFX_WAIT)''
  w_text.10 = '  TRACE(' PFX_TRACE)  TRPROF(' PFX_TRPROF)''
  w_text.11 = '  TWASIZE(' PFX_TWASIZE)  ISOLATE(' PFX_ISOLATE)''
  w_text.12 = '  DUMP(' PFX_DUMP)  CONFDATA(' PFX_CONFDATA)''
  w_text.13 = '  DYNAMIC(' PFX_DYNAMIC)  PRIORITY(' PFX_PRIORITY)''
  w_text.14 = '  RUNAWAY(' PFX_RUNAWAY)  DTIMOUT(' PFX_DTIMOUT)''
  w_text.15 = '  WAITTIME(' PFX_WAITTIMEDD', ' PFX_WAITTIMEHH', ' PFX_WAITTIMEMM)''
  w_text.16 = '  TRANCLASS(' PFX_TRANCLASS)''
  w_text.17 = W_ALIAS
  w_text.18 = W_REMOTENOUT
  w_text.19 = W_REMOTESOUT
  w_text.20 = W_TASKREQ
  w_text.21 = W_PARTITION
  w_text.22 = W_XTRANID
  w_text.23 = W_BREXIT
  w_text.24 = ' '
End
End
' EXECIO * DISKW CSDOUT (STEM w_text.'
Drop w_text.
End III
/*
*/

```

Figure 157 (Part 8 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

```

/*-----*/
/* Are we processing ALL entries, or just one type?..... */
/*-----*/
CHECK_STATUS:
Select
When All_Flag = 'Y'
  Then Do
    Resnum = Resnum+1
    Signal ALL_RESTYPE
  End
Otherwise
  Signal ENDIT
  End
/*-----*/
/* ALL Resources for this RESGROUP are required..... */
/*-----*/
ALL_RESTYPE:
All_Flag = 'Y'
Select
When Resnum <= Restype.0
  Then do
    W_RESTYPE = Restype.resnum
    Signal SET_RESTYPE
  End
  Otherwise
    Signal ENDIT
  End
/*-----*/
/* PROCESSING FOR API FAILURES. */
/*-----*/
UNEXPECTED:
  W_MSG_TEXT = 'UNEXPECTED ERROR.'
  Signal SCRNL0G
NO_RESGROUP:
  W_MSG_TEXT = 'NO RESGROUP SPECIFIED.'
  Signal SCRNL0G
NO_RESTYPE:
  W_MSG_TEXT = 'INVALID RESTYPE SPECIFIED.'
  Signal SCRNL0G
NO_CONNECT:
  W_MSG_TEXT = 'ERROR CONNECTING TO API.'
  Signal SCRNL0G
NO_GET:
  W_MSG_TEXT = 'ERROR GETTING' W_RESTYPE 'RESOURCE TABLE.'
  Signal SCRNL0G

```

Figure 157 (Part 9 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input


```

NO_FETCH:
    W_MSG_TEXT = 'ERROR FETCHING RESULT SET.'
    Signal SCRNLG
SCRNLG:
    Say W_MSG_TEXT
    Say 'RESPONSE=' || W_Response ,
        ' REASON=' || W_Reason ' RESULT=' XX
ENDIT:
/*-----*/
/*  TERMINATE API CONNECTION.                */
/*-----*/
"EXECIO 0 DISKW CSDOUT (FINIS"
XX = EYUAPI('TERMINATE RESPONSE(W_Response) REASON(W_Reason)')
XX = EYUTERM()
Exit

```

Figure 157 (Part 10 of 10). EYU#BAS1 - REXX EXEC to Convert Data Repository Data into DFHCSDUP Input

Note that in the EYU#BAS1 routine in Figure 157 on page 128 each parameter description is 'hard coded'. You may want to use the GETDEF API command to retrieve these descriptions. If you choose the GETDEF, however, we recommend that you do so within a compiled language program rather than a REXX routine.

The GETDEF command retrieves its data from CPSM metadata resource tables (OBJECT, OBJACT, METADESC, ATTR, and ATTRAVA) and is fully described in the *CICSplex SM Application Programming Interface* manual. The CPSM metadata resource table layouts can be found in the *CICSplex SM Resource Tables Reference*.

Figure 158 on page 138 shows an example of the output produced by the EYU#BAS1 routine when it was run against the sample application data repository. The EYU#BAS1 REXX routine was invoked twice:

- EXEC EYU#BAS1 'DSWRLSU FILEDEF OLDDSW'
- EXEC EYU#BAS1 'NEWDSW ALL OLDDSW'

Both outputs are in the 'userid.CSDOUT.FILE' data set.

```

DEFINE FILE (HOTEL1 ) GROUP(OLDDSW)
  DESCRIPTION(XXXX )
  ADD(YES ) BROWSE(NO ) DELETE(YES )
  READ(YES ) UPDATE(YES ) BACKUPTYPE(STATIC )
  DATABUFFERS( 11) DISPOSITION(SHARE )
  DSNSHARING(ALLREQS ) FWDRECOVLOG( 90)
  INDEXBUFFERS( 10) JNLADD(NONE )
  JNLREAD(NONE ) JNLSYNCREAD(NO )
  JNLSYNCWRITE(YES ) JNLUPDATE(NO )
  JOURNAL(NO ) OPENTIME(STARTUP )
  LSRPOOLID( 2)
  READINTEG(REPEATABLE ) RECORDFORMAT(F)
  RECOVERY(ALL )
  RLSACCESS(YES ) STATUS(ENABLED ) STRINGS( 10)
  TABLE(NO )
  DSNAME(CICSDSW.VSAMU.HOTEL1 )

```

Figure 158 (Part 1 of 3). Output Produced by EYU#BAS1 When Run against Sample Data Repository

```

DEFINE MAP (MAPHR1I ) GROUP(OLDDSW)
  DESCRIPTION(XXXX )
  RESIDENT(NO ) STATUS(ENABLED )
  USELPACOPY(NO ) USAGE(NORMAL )

DEFINE MAP (MAPHR1O ) GROUP(OLDDSW)
  DESCRIPTION(XXXX )
  RESIDENT(NO ) STATUS(ENABLED )
  USELPACOPY(NO ) USAGE(NORMAL )

DEFINE MAP (MAPHR2O ) GROUP(OLDDSW)
  DESCRIPTION(XXXX )
  RESIDENT(NO ) STATUS(ENABLED )
  USELPACOPY(NO ) USAGE(NORMAL )

DEFINE PROGRAM (DSWHR1VV) GROUP(OLDDSW)
  DESCRIPTION(XXXX )
  CEDF(YES ) DATALOCATION(BELOW )
  EXECKEY(USER ) RESIDENT(NO )
  LANGUAGE(COBOL ) RELOAD(NO ) STATUS(ENABLED )
  USELPACOPY(NO ) USAGE(NORMAL )
DEFINE PROGRAM (DSWHR2VV) GROUP(OLDDSW)
  DESCRIPTION(XXXX )
  CEDF(YES ) DATALOCATION(BELOW )
  EXECKEY(USER ) RESIDENT(NO )
  LANGUAGE(COBOL ) RELOAD(NO ) STATUS(ENABLED )
  USELPACOPY(NO ) USAGE(NORMAL )
DEFINE TRANSACTION (HR1 ) GROUP(OLDDSW)
  DESCRIPTION(XXXX )
  PROGRAM(DSWHR1VV) PROFILE(DFHCICST)
  ACTION(BACKOUT ) CMDSEC(NO )
  SHUTDOWN(DISABLED ) STATUS(ENABLED )
  TASKDATAKEY(USER ) TASKDATALOC(BELOW )
  LOCALQ() RESSEC(NO )
  STORAGECLEAR(NO ) RESTART(NO )
  SPURGE(YES ) TPURGE(NO ) WAIT(YES )
  TRACE(YES ) TRPROF(DFHCICSS)
  TWASIZE( 0) ISOLATE(YES )
  DUMP(YES ) CONFDATA(NO )
  DYNAMIC(YES ) PRIORITY( 1)
  RUNAWAY(SYSTEM ) DTIMOUT( 10)
  WAITTIME( 0, 0, 0)
  TRANCLASS(DFHTCLOO)

```

Figure 158 (Part 2 of 3). Output Produced by EYU#BAS1 When Run against Sample Data Repository

```

DEFINE TRANSACTION (HR2      ) GROUP(OLDDSW)
DESCRIPTION(XXXX          )
PROGRAM(DSWHR2VV)    PROFILE(DFHCICST)
ACTION(BACKOUT      ) CMDSEC(NO          )
SHUTDOWN(DISABLED   ) STATUS(ENABLED    )
TASKDATAKEY(USER    ) TASKDATALOC(BELOW  )
LOCALQ()    RESSEC(NO          )
STORAGECLEAR(NO     ) RESTART(NO        )
SPURGE(YES         ) TPURGE(NO         ) WAIT(YES         )
TRACE(YES          ) TRPROF(DFHCICSS)
TWASIZE(          0) ISOLATE(YES        )
DUMP(YES          ) CONFDATA(NO        )
DYNAMIC(YES       ) PRIORITY( 1)
RUNAWAY(SYSTEM    ) DTIMOUT( 10)
WAITTIME( 0, 0, 0)
TRANCLASS(DFHTCLOO)

```

Figure 158 (Part 3 of 3). Output Produced by EYU#BAS1 When Run against Sample Data Repository

Figure 159 on page 141 shows the differences in parameter format between data repository and CSD source.

RESOURCE TYPE	DRep Parameter Format	DFHCSD Parameter
DRep (DFHCSD)		
FILEDEF (FILE)	RECORDFORMAT(VARIABLE, FIXED)	RECORDFORMAT(V, F)
SESSDEF (SESSION)	IOAREALEN(mmmmmmm) IOAREALEN2(nnnnnnnn)	IOAREALEN(mmmmmmm, nnnnnnnn)
	MAXINGRP(xxxx) MAXCTWIN(yyyy)	MAXIMUM(xxxx, yyyy)
TDQDEF (TDQUEUE)	TYPE(REMOTE)	TYPE(blank)
TERMDEF (TERMINAL)	AUTOINSMODEL AUTOINSNAME	AUTINSTMODEL AUTINSTNAME
TRANDEF (TRANSACTION)	FAILACTION	ACTION
	WAITTIMEDD(ddd) WAITTIMEHH(hh) WAITMEMM(mm)	WAITTIME(ddd, hh, mm)
TYPTMDEF (TYPETERM)	PAGESIZECOL(aaaa) PAGESIZEROW(bbbb)	PAGESIZE(aaaa, bbbb)
	ALTPAGECOL(cccc) ALTPAGROW(dddd)	ALTPAGE(cccc, dddd)
	DEFSCREENCOL(eeee) DEFSCREENROW(ffff)	DEFSCREEN(eeee, ffff)
	CGCSGIDCODE(gggggggg) CGCSGIDBLID(hhhhhhhh)	CGCSGID(gggggggg, hhhhhhhh)
	IOAREALEN(iiiiiiii) IOAREALENALT(jjjjjjjj)	IOAREALEN(iiiiiiii, jjjjjjjj)
	ALTSCREENCOL(kkkk) ALTSCREENROW(1111)	ALTSCREEN(kkkk, 1111)
DB2CDEF (DB2CONN)	PURGECYCLEMM(mm) PURGECYCLESS(ss)	PURGECYCLE(mm, ss)

Figure 159. Parameter Differences between Data Repository and DFHCSD Records

7.2 Security

Because of the importance of resource definitions to your CICSplex environment, CICSplex SM enables you to define security for the BAS facilities. Providing security for BAS is handled in the same way as it is for other CICSplex SM components. You can define as narrow or as broad a range of BAS functions as you like and authorize as few or as many people as you like to use them. For security purposes, the BAS facilities are divided into the following groups:

BAS.DEF

The BAS.DEF group includes all of the resource definition views and the related BAS administration views. Users with UPDATE access to this group can create, update, and remove definitions in the CICSplex SM data repository.

BAS.resource

The BAS.resource groups are named according to the resource type they represent (such as BAS.CONNECT, for connection-related definitions). Each group includes the resource definition views for a given resource type. For example, BAS.CONNECT includes the CONNDEF and SESSDEF views.

The purpose of these security groups is to further restrict a user's ability to install resources in CICS systems. A user must have ALTER access to the appropriate BAS.resource group in order to install the specified resources.

In addition to controlling access by function, you may want to limit the use of these functions to certain resources in certain CICS systems. CICSplex SM also provides simulated CICS security checking, which enables you to control access to CICS resources and commands.

Be aware of the need to take special care to adequately protect the BAS views so that unauthorized users cannot create and administer resources.

Also take care if you are running CICS/ESA 4.1 or later and using the EXEC CICS CREATE command to build new resources. Any definition created with the CICSplex as the context is automatically distributed to all CMASs in the CICSplex. Therefore, giving a user authority to create BAS objects essentially gives that user authority to install any resources on any CICS system in the CICSplex. When the CICS system starts, there is no check on who installed the resource in the system.

For details on setting up security for CICSplex SM at your enterprise, see the *CICSplex SM Setup* manual.

7.3 CICSplex SM Journal

A CMAS is capable of producing CICS journal records to track a variety of activities in the CICSplex. These journal records provide an audit trail that can aid in the recovery of data or the reconstruction of events that affected the CICSplex. A journal record can be written when:

- A definition in the data repository is added, removed, or updated
- An operations action is issued against a MAS
- A real-time analysis event is generated

For example, when a CMAS serves as the temporary maintenance point, it temporarily stores in its data repository any definitions that you add, update, or remove. When the maintenance point CMAS resumes operation, the temporary information is removed. You can obtain journal records of what is added to and deleted from the data repository for the temporary maintenance point.

To request one or more of the record types, specify the appropriate CICSplex SM system parameters in the startup JCL of a CMAS:

- **JRNLDEFCH(YES)** For data repository definition changes
- **JRNLOPACT(YES)** For operations actions
- **JRNLRTAEV(YES)** For real-time analysis events

7.3.1 Format of Journal Records

The journal records produced by a CMAS contain data mapped by a DSECT called EYUBCPJR. Each record consists of a standard prefix and a variable data area. The contents of the data area are specific to the type of journal record being written.

Figure 160 on page 144 shows the format of EYUBCPJR.

```

*-----*
*           EYUBCPJR DSECT Prefix           *
*-----*
EYUBCPJR      DSECT
EYUBCPJR      DS   OD

CPJR_PREFIX   DS   OD           Prefix of record
CPJR_CMASNAME DS   CL8          CMAS Name which produced record
CPJR_CONTEXT  DS   CL8          Plex Name
CPJR_SCOPE    DS   CL8          Scope Name
CPJR_USER     DS   CL8          User Name
CPJR_STCK     DS   D            Store clock
CPJR_VERSION  DS   H            Current record version
CPJR_VER_ZERO EQU 0000          Version
CPJR_TYPE     DS   H            Record type
CPJR_TYPE_DEFCH EQU 0001        Definition Add/Change/Delete
CPJR_TYPE_RTAEV EQU 0002        Rta Event
CPJR_TYPE_OPACT EQU 0003        Operation action
CPJR_LENGTH   DS   F            Length of entire record plus x
                                prefix area
                                Available for use
CPJR_LEN      EQU *-CPJR_PREFIX Length of Prefix area
CPJR_DATA_AREA DS   OH          Data area

*-----*
*           Data record for RTA Events       *
*-----*

CPJR_RT_DATA  DS   OH
CPJR_RT_TYPE  DS   X            Record type
CPJR_RTATYPE_CRT EQU 0001        Event Created
CPJR_RTATYPE_REM EQU 0002        Event Removed
CPJR_RTATYPE_UPD EQU 0003        Event Updated
CPJR_RTATYPE_RES EQU 0004        Event Resolved
CPJR_RTATYPE_GTYPE DS   X        Generated by type
CPJR_RTATYPE_SAM EQU 0001        Event produced by Sam
CPJR_RTATYPE_APM EQU 0002        Event produced by Apm
CPJR_RT_EVENT  DS   CL8          Event Name
CPJR_RT_MSGSTRT DS   CL30        External Entry Message
CPJR_RT_MSGEND DS   CL30        External Exit Message
CPJR_RT_EVENTXT DS   CL30        Event Text
CPJR_RT_SEVERITY DS   CL3        Severity Level
CPJR_RT_DATA_L EQU *-CPJR_RT_DATA Length of the record

```

Figure 160 (Part 1 of 3). CMAS Journal Record Layout


```

*-----*
*           Data record for Definition changes           *
*-----*
CPJR_DEF_DATA    DS   OH
CPJR_DEF_TYPE    DS   X           Record type
CPJR_DEFTYPE_ADD EQU 0001         Definition Added
CPJR_DEFTYPE_DEL EQU 0002         Definition Deleted
CPJR_DEFTYPE_UPD EQU 0003         Definition Update
CPJR_DEF_RESERVED DS   X           Reserved
CPJR_DEF_MAJORNM DS  CL8          Major Name
CPJR_DEF_MAJORID DS  CL8          ADMIN Restype
CPJR_DEF_MINORNM DS  CL8          Minor Name
CPJR_DEF_MINORID DS  CL8          ADMIN Restype
CPJR_DEF_SYSID   DS  CL4          System Id where change      x
                                was originated
CPJR_DEF_DATA_L  EQU *-CPJR_DEF_DATA Length of the record

*-----*
*           Data record for Operation commands           *
*-----*

CPJR_OPS_DATA    DS   OH
CPJR_OPS_LENGTH  DS   H           Length of fixed and variable x
                                portion of data area
CPJR_OPS_NUMFLDS DS   H           Number of fields
CPJR_OPSTYPE     DS   H           Type of command
CPJR_OPSTYPE_INQ EQU 0001         Inquire on resource(s)
CPJR_OPSTYPE_SET EQU 0002         Modification of resource(s)
CPJR_OPSTYPE_REM EQU 0003         Removal of resource(s)
CPJR_OPSTYPE_DSC EQU 0004         Discard of resource(s)
CPJR_OPSTYPE_INS EQU 0005         Install of resource(s)
CPJR_OPSTYPE_INI EQU 0006         Init of resource(s)
CPJR_OPSTYPE_SHU EQU 0007         Shutdown of CICS System
CPJR_OPSTYPE_SNP EQU 0008         Snap of CICS System
CPJR_OPSTYPE_ACQUIRE EQU 0009     Action against resource
CPJR_OPSTYPE_ACTIVATE EQU 0010     Action against resource
CPJR_OPSTYPE_ACTIVE EQU 0011     Action against resource
CPJR_OPSTYPE_ADD EQU 0012         Action against resource
CPJR_OPSTYPE_ADVANCE EQU 0013     Action against resource
CPJR_OPSTYPE_APIINSTALL EQU 0014   Action against resource
CPJR_OPSTYPE_ASSIGN EQU 0015     Action against resource
CPJR_OPSTYPE_CLOSE EQU 0016     Action against resource
CPJR_OPSTYPE_DEACTIVATE EQU 0017   Action against resource

```

Figure 160 (Part 2 of 3). CMAS Journal Record Layout

CPJR_OPSTYPE_DELETE	EQU	0018	Action against resource
CPJR_OPSTYPE_DISABLE	EQU	0019	Action against resource
CPJR_OPSTYPE_DORMANT	EQU	0020	Action against resource
CPJR_OPSTYPE_ENABLE	EQU	0021	Action against resource
CPJR_OPSTYPE_FORCE	EQU	0022	Action against resource
CPJR_OPSTYPE_INSERVICE	EQU	0023	Action against resource
CPJR_OPSTYPE_LEAVE	EQU	0024	Action against resource
CPJR_OPSTYPE_NEWCOPY	EQU	0025	Action against resource
CPJR_OPSTYPE_NOTPENDING	EQU	0026	Action against resource
CPJR_OPSTYPE_OPEN	EQU	0027	Action against resource
CPJR_OPSTYPE_OUTSERVICE	EQU	0028	Action against resource
CPJR_OPSTYPE_PHASEIN	EQU	0029	Action against resource
CPJR_OPSTYPE_PURGE	EQU	0030	Action against resource
CPJR_OPSTYPE_QUIESCE	EQU	0031	Action against resource
CPJR_OPSTYPE_RELEASE	EQU	0032	Action against resource
CPJR_OPSTYPE_REMOVE	EQU	0033	Action against resource
CPJR_OPSTYPE_RESET	EQU	0034	Action against resource
CPJR_OPSTYPE_RESETTIME	EQU	0035	Action against resource
CPJR_OPSTYPE_SECREBUILD	EQU	0036	Action against resource
CPJR_OPSTYPE_STATISTICS	EQU	0037	Action against resource
CPJR_OPSTYPE_STOP	EQU	0038	Action against resource
CPJR_OPSTYPE_UNASSIGN	EQU	0039	Action against resource
CPJR_RESNAME	DS	CL8	Resource Name
CPJR_OPS_STRTENT	DS	OC	Start of data entries
CPJR_OPS_DATA_L	EQU	*-CPJR_OPS_DATA	Length of the record
*			
CPJR_OPS_ENTRY	DS	OC	
CPJR_OPS_FIELD	DS	CL12	Field Name
CPJR_OPS_DATALEN	DS	X	Length of the Data
CPJR_OPS_ENTLEN	DS	X	Length of entire entry
CPJR_OPS_FLDDATA	DS	OC	Start of the Data
CPJR_OPS_ENT_L	EQU	*-CPJR_OPS_ENTRY	Fixed portion length

Figure 160 (Part 3 of 3). CMAS Journal Record Layout

7.3.2 Setting up Journaling

To set up journaling, if you do not want to use the CICSplex SM default log stream name of EYUJRNL, you must define a JOURNALMODEL resource in the CSD that has the log stream name you want to use. The distributed CMAS resource definition group and group list are protected from modification. Thus, to make the JOURNALMODEL resource definition available during CMAS initialization, you must create a new CMAS group that includes the group containing the JOURNALMODEL resource definition. To add the JOURNALMODEL resource to the CSD, either edit and run the JCL in sample member CPSM130.SEYUSAMP(EYUJRNE\$) to execute batch utility DFHCSDUP or use the CICS CEDA transaction. Either of these approaches does the following:

- Appends the protected EYU130L0 group to a new unprotected group list
- Defines the desired JOURNALMODEL for EYUJRNL in an unprotected group
- Adds the unprotected group to the new, unprotected group list

You must update the CICS SIT parameters used to start the CMAS by setting the GRPLIST parameter to reference the new group list. Additionally, you must also define the EYUJRNL journal log stream to the MVS logger.

7.3.3 Reading the Journal

If you specify JRNLDEFCH(YES), a journal record will be written every time you perform a BAS action against the data repository. You may want to retrieve these records and print them, as an audit requirement, for example. Run the DFHJUP utility to extract the records from the journal log stream and then read the file produced by the DFHJUP job to interpret the data.

We ran a DFHJUP job against our EYUJRNL log stream; Figure 161 shows the JCL we used. Also, we wrote a sample routine, EYU#BAS2, to interpret the data produced by DFHJUP. Figure 162 on page 148 shows the EYU#BAS2 routine, and Figure 163 on page 153 shows a sample of the output the routine produced.

```
//LOGCOPY JOB (999,POK),'LOGR COPY', CLASS=A,REGION=4096K,
//          MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//COPYJNL EXEC PGM=DFHJUP
//STEPLIB DD DISP=SHR,DSN=CICSTS12.CICS.SDFHLOAD
//SYSPRINT DD SYSOUT=*,DCB=RECFM=FBA
//SYSUT1  DD DSN=SCSCPCA1.PCA1.EYUJRNL,
//          SUBSYS=(LOGR,DFHLG520,,COMPAT41)
//SYSUT4  DD DSN=CICSR1.DFHJUP.OUTPUT1,DISP=SHR,
//          DCB=(DSORG=PS,RECFM=VB,LRECL=32756,BLKSIZE=32760)
//SYSIN   DD *
*-----*
* CONTROL STATEMENT : DEFAULTS *
*           INPUT = SYSUT1 *
*           OUTPUT = SYSUT4 *
* SELECTION QUALIFIERS : *
*           1. DEFAULT = ALL INPUT RECORDS *
*-----*
OPTION COPY,NEWDCB
END
/*
```

Figure 161. Sample Job to Extract Journal Log Stream Records

The OPTION statement in the DFHJUP sample in Figure 161 contains the NEWDCB parameter, which allows the output data set (SYSUT4) to be created with RECFM=VB (variable blocked record format). If this parameter is omitted, the output data set is created with the same record format as the input log stream, which is RECFM=U (unformatted record format). The latter situation is not desirable because data sets created with RECFM=U can be difficult to work with.

The DFHJUP utility is fully documented in the *CICS TS for OS/390 CICS Operations and Utilities Guide*. However, there is no reference in that manual to the NEWDCB parameter. For further information about the use of NEWDCB, refer to APAR PQ09028. The corresponding PTF number is UQ13627.

```

/* REXX */
/*****/
/*
/* MODULE NAME = EYU#BAS2
/*
/* DESCRIPTIVE NAME = CPSM Sample Routine to read CPSM Journal
/*
/* FUNCTION =
/*
/* To read CPSM journal records and report on any BAS activity
/* found in them.
/*
/*-----*/
/*NOTES :
/* DEPENDENCIES = S/390, TSO
/* RESTRICTIONS = None
/* REGISTER CONVENTIONS =
/* MODULE TYPE = Executable
/* PROCESSOR = REXX
/* ATTRIBUTES = Read only, Serially Reusable
/*
/*-----*/
/*
/*ENTRY POINT = EYU#BAS2
/*
/* PURPOSE = All Functions
/*
/* LINKAGE = From TSO as a REXX EXEC.
/*
/* INPUT = CPSM Journal file
/*
/* OUTPUT = sequential file: 'userid.JOURNAL.FILE'
/* - containing BAS Activity records from journal
/*
/*-----*/
/*

```

Figure 162 (Part 1 of 5). EYU#BAS2: REXX EXEC to Interpret DFHJUP Output

```

Address 'TS0'
/*-----*/
/* The type of Journal record being read can either be: */
/* */
/*      - a Definition update (W_Defch) */
/*      - an RTA event      (W_Rtaev) */
/*      - an Operation action (W_Opact) */
/* */
/* We are only interested in W_Defch type records, but the other */
/* two types are included here for documentation */
/*-----*/
W_Defch = '0001'x
W_Rtaev = '0002'x
W_Opact = '0003'x
/*-----*/
/*      Set up work variables */
/*-----*/
W_Add    = '0001'x
W_Delete = '0002'x
W_Update = '0003'x
W_Left   = '('
W_Right  = ')'
W_Var1   = 'on System('
W_Var2   = ') Context('
W_Var3   = 'by User('
W_Space  = ' '
/* */
/*-----*/
/* Allocate the input journal dataset */
/*      (Change EYULOG to match your own journal DSN) */
/*-----*/
/* */
Say 'Allocating Journal dataset.....'
"ALLOC FI(EYULOG) DA('CICSR1.DFHJUP.OUTPUT') SHR REUSE"
If RC <> 0
  Then Signal INPUT_ERROR
/* */
/*-----*/
/* Open and close EYULOG twice: */
/* 1) To count the number of records to determine the size of */
/*    the processing loop */
/* 2) To read records (prior to second close) */
/*-----*/
/* */

```

Figure 162 (Part 2 of 5). EYU#BAS2: REXX EXEC to Interpret DFHJUP Output

```

"EXECIO 0 DISKR EYULOG (OPEN"
"EXECIO * DISKR EYULOG (STEM Records."
/* */
"EXECIO 0 DISKR EYULOG (FINIS"
"EXECIO 0 DISKR EYULOG (OPEN"
/* */
/*-----*/
/* Allocate output dataset */
/* (Change JRNOUT to match your own output DSN) */
/*-----*/
/* */
Say 'Allocating output dataset....'
"ALLOC FI(JRNOUT) DA('CICSR1.JRNOUT.FILE') MOD REUSE"
If RC <> 0
Then Signal OUTPUT_ERROR
"EXECIO 0 DISKW JRNOUT (OPEN"
/* */
/*-----*/
/* Main processing loop */
/* */
/* This loop will read all records until EOF, but only select */
/* those which match the W_Defch criteria. */
/* */
/* For each of these, a check is made to see whether the */
/* logged activity was made against a 'minor' resource. */
/* */
/*-----*/
/* */
READ_FILE:
/* */
Do i = 1 to Records.0
"EXECIO 1 DISKR EYULOG"
Pull data
Parse var data W_Fill1 71 W_Type 73 W_Fill2
If W_Type = W_Defch
Then Do
Parse var data 1 W_Fill1 29 W_Cmas 37 W_Plex 45 W_Scope,
53 W_User 61 W_Fill2 84 W_Deftype 86 W_Fill3,
87 W_Majname 95 W_Majorid 103 W_Minorid 111 W_Minname,
119 W_Sysid 127 W_Fill4

```

Figure 162 (Part 3 of 5). EYU#BAS2: REXX EXEC to Interpret DFHJUP Output

```

Select
When W_Deftype = W_Add
  Then Select
    When W_Minorid = 'NONE'
      Then W_Out = 'Added by User('
    Otherwise W_Out = 'Added to '
    End
When W_Deftype = W_Update
  Then Select
    When W_Minorid = 'NONE'
      Then W_Out = 'Updated by User('
    Otherwise W_Out = 'Updated in '
    End
When W_Deftype = W_Delete
  Then Select
    When W_Minorid = 'NONE'
      Then W_Out = 'Deleted by User('
    Otherwise W_Out = 'Deleted in '
    End
/*
/* If we got here W_Minorid is invalid */
/*
Otherwise Signal MINORID_ERROR
End
Select
When W_Minorid = 'NONE'
Then Do
  W_Text.1 = W_Majorid
  W_Text.1 = 'OVERLAY'(W_Left,W_Text.1,9)
  W_Text.1 = 'OVERLAY'(W_Majname,W_Text.1,10)
  W_Text.1 = 'OVERLAY'(W_Right,W_Text.1,18)
  W_Text.1 = 'OVERLAY'(W_Out,W_Text.1,20)
  W_Text.1 = 'OVERLAY'(W_User,W_Text.1,36)
  W_Text.1 = 'OVERLAY'(W_Right,W_Text.1,44)
End
Otherwise Do
  W_Text.1 = W_Minorid
  W_Text.1 = 'OVERLAY'(W_Left,W_Text.1,9)
  W_Text.1 = 'OVERLAY'(W_Minname,W_Text.1,10)
  W_Text.1 = 'OVERLAY'(W_Right,W_Text.1,18)
  W_Text.1 = 'OVERLAY'(W_Out,W_Text.1,20)
  W_Text.1 = 'OVERLAY'(W_Majorid,W_Text.1,31)
  W_Text.1 = 'OVERLAY'(W_Left,W_Text.1,39)
  W_Text.1 = 'OVERLAY'(W_Majname,W_Text.1,40)
  W_Text.1 = 'OVERLAY'(W_Right,W_Text.1,48)
  W_Text.1 = 'OVERLAY'(W_Var3,W_Text.1,50)
  W_Text.1 = 'OVERLAY'(W_User,W_Text.1,58)
  W_Text.1 = 'OVERLAY'(W_Right,W_Text.1,66)
End

```

Figure 162 (Part 4 of 5). EYU#BAS2: REXX EXEC to Interpret DFHJUP Output

```

    End
    W_Text.2 = 'OVERLAY'(W_Space,W_Text.2,1)
    W_Text.2 = 'OVERLAY'(W_Var1,W_Text.2,5)
    W_Text.2 = 'OVERLAY'(W_Sysid,W_Text.2,15)
    W_Text.2 = 'OVERLAY'(W_Var2,W_Text.2,19)
    W_Text.2 = 'OVERLAY'(W_Plex,W_Text.2,29)
    W_Text.2 = 'OVERLAY'(W_Right,W_Text.2,37)
    W_Text.3 = '*****'
    "EXECIO * DISKW JRNOUT (Stem W_Text."
    Drop W_Text.
    End
Else
    NOP
End
/* */
INPUT_ERROR:
    W_MSG_TEXT = 'Error opening input file'
    Signal SCRNL0G
/* */
OUTPUT_ERROR:
    W_MSG_TEXT = 'Error opening output file'
    Signal SCRNL0G
/* */
MINORID_ERROR:
    W_MSG_TEXT = 'Invalid Minor-id found'
    Signal SCRNL0G
/* */
SCRNL0G:
    Say W_MSG_TEXT
ENDIT:
/*-----*/
/*   Close input and output datasets           */
/*-----*/
"EXECIO 0 DISKR EYULOG (FINIS"
"EXECIO 0 DISKW JRNOUT (FINIS"
Exit

```

Figure 162 (Part 5 of 5). EYU#BAS2: REXX EXEC to Interpret DFHJUP Output


```

RESGROUP(NEWSW ) Deleted by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
TRANDEF (PFC1 ) Added  by User(CICSR1 )
  on System(SC61) Context(SCSPLEX )
*****
TRANDEF (PFC1 ) Added  to TRNINGRP(TAA0 ) by User(CICSR1 )
  on System(SC61) Context(SCSPLEX )
*****
TRANDEF (PFC1 ) Deleted by User(CICSR1 )
  on System(SC61) Context(SCSPLEX )
*****
REDESC (PFALIST ) Updated by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
SESSDEF (PAA3 ) Updated by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
SESSDEF (PAA4 ) Updated by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
CSYSDEF (SCSCPAA1) Added  to SYSLINK (SCSCPFA1) by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
CSYSDEF (SCSCPAA2) Added  to SYSLINK (SCSCPFA1) by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
CSYSDEF (SCSCPAA3) Added  to SYSLINK (SCSCPFA1) by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
CSYSDEF (SCSCPAA4) Added  to SYSLINK (SCSCPFA1) by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
SESSDEF (PT1A ) Added  by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****
SESSDEF (PT1A ) Deleted by User(CICSR5 )
  on System(SC61) Context(SCSPLEX )
*****

```

Figure 163. Sample Output Produced by EYU#BAS2

Chapter 8. Common Errors

In this chapter we discuss some of the common errors that you might make and the associated error codes.

8.1 Inconsistent Set of Resources

Maintaining a consistent set of resources for each system is an integral part of managing CICS resource definitions. Whenever you:

- Add or update a resource definition in a resource group
- Add a resource group in a description
- Update a resource description
- Update a resource assignment
- Add or update a resource assignment in a description
- Add a CICS system to a CICS system group

CICSplex SM checks the existing resources against the requested changes, for each CICS system, to ensure that there are no conflicts with the existing CICS resource definitions.

CICSplex SM flags a resource set as inconsistent if a resource being added or updated is in conflict with a resource that already exists in the CICS system. For example, you would receive inconsistent resource set errors if you attempted to:

- Assign different versions of the same resource to the same CICS system
- Assign a resource as both local and remote to the same CICS system

CICSplex SM validates whether you have assigned correct target scope and related scope values to a resource. When you update a resource description or resource assignment, add or update a resource assignment in a resource description, or add a CICS system to a CICS system group, CICSplex SM checks the requested changes to ensure that the target scope and related scope values are not in conflict.

CICSplex SM flags the target scope and related scope as inconsistent when:

- There is an overlap between the two (for example, the same CICS system is in both scopes).
- The related scope is anything other than a single CICS system for which a system ID is defined.

The examples in this section illustrate some validation errors detected by CICSplex SM BAS.

In Figure 164 on page 156 we are attempting to add a new version of a resource definition for HOTEL1 to resource group DSWRLSU. In this case, the ResourceName is HOTEL1, Version 2. Version 1 of the resource HOTEL1 already exists in DSWRLSU. This attempt results in an EYUEI0627E message (Figure 165 on page 156).

```

----- Associate Resource to Resource Group for SCSPLEX -----
COMMAND ==>

Resource Group   ==> DSWRLSU   Group or Generic

Resource Type    ==> FILEDEF   Resource Type
ResourceName     ==> HOTEL1   Resource or Generic
Resource Version ==> 2       Resource Version

Press ENTER to add Resource to Group.
Type END or CANCEL to cancel without adding.

```

Figure 164. Add a Resource to a RESGROUP: Version 2

```

06JUL1998 17:09:33 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =FILEDEF=====SCSPLEX==SCSPLEX==06JUL1998==17:09:33====CPSM====
EYUEI0627E HOTEL1 already exists in DSWRLSU at different version. ADD is
rejected.

```

Figure 165. Add Resource to a RESGROUP Error: Duplicate Version

The second example (Figure 166) displays the error condition that results from attempting to define a file as REMOTE that is currently defined as LOCAL. This is an example of an inconsistent set error.

```

----- Systems with errors -----
COMMAND ==>
These systems had errors. Select them to see details of the errors.

C System
- -----
S SCSCPAA1
_ SCSCPAA4

```

Figure 166. Systems That Detected Errors during Add Assignment

When you select one of the systems indicated as having an error condition, you get the view in Figure 167.

```

----- Add RASINDSC Errors -----
COMMAND ==>
Errors found for SCSCPAA1

ResType  ResName  Ver  Resgroup  Assignmt  Descript  Usage  SysGroup  SysType
          ResName  Ver  Resgroup  Assignmt  Descript  Usage  SysGroup  SysType
-----  -----  -----  -----  -----  -----  -----  -----  -----
FILEDEF  HOTEL1   1    HOTELRES  TESTING  HOTELRES  REMOTE  SCSCG003  TARGET
          HOTEL1   1    HOTELRES  HOTFIL12 HOTELRES  LOCAL   SCSCG003  TARGET

```

Figure 167. Inconsistent Set Errors during Add Assignment

Figure 167 indicates that the *existing* definition for FILEDEF HOTEL1 is as a LOCAL resource. The *candidate* FILEDEF resource is defined as REMOTE. Two systems, SCSCPAA1 and SCSCPAA4, have detected this anomaly.

Figure 168 displays the error that you receive when you attempt to install a resource, in this case a PROGDEF, for program DSWHR1VV, that is currently installed without the *Force Install = YES* option.

```

----- Systems with errors -----
COMMAND ==>
These systems had errors. Select them to see details of the errors.

C System
- -----
- SCSCPAA1
- SCSCPAA2
- SCSCPAA3
- SCSCPAA4

```

Figure 168. Systems That Detected Errors during Dynamic Install

Select a system from the view in Figure 169 to display the specific reason for the error.

```

----- Resource Install Errors -----
COMMAND ==>
Errors found for SCSCPAA1

Resource Res Resource   Error Code   EIBFN Resp  Resp2 Resp2
  Name   Ver  Type                               -----
-----
DSWHR1VV 1  PROGDEF  Not Forced          0    0    0    0

```

Figure 169. Install Error for System SCSCPAA1: Force Install=YES Not Specified

Note: Figure 169 will display relevant EIBFN, RESP, and RESP2 data values when they are available.

8.2 Common Error Codes

We list here some of the most common error codes.

1. Complete Failed

An EXEC CICS CREATE COMPLETE request for a connection, session, or terminal failed. The CICS EIBFN and RESP values are returned with this error code.

2. Connection Failed

An attempt to install the specified connection failed because the associated session definition could not be found.

3. Discard Failure

An EXEC CICS CREATE DISCARD request for a connection, session, or terminal failed. The CICS EIBFN and RESP values are returned with this error code.

4. Install Failure

Either CICSplex SM did not perform a resource state check before issuing the EXEC CICS CREATE command or the state check process failed. The resource install request was rejected by CICS. The CICS EIBFN and RESP values are returned with this error code.

5. MAS Failure

An attempt to install the specified resource failed because the MAS encountered an exceptional condition.

6. Not Authorized

The external security manager (ESM) determined that the user who requested the install action is not authorized to perform the specified installation.

7. Not Forced

An attempt to install the specified resource in the specified CICS system failed because the same resource already existed in the CICS system and Force Install was set to NO.

8. Not Supported

An attempt to install the specified resource in the specified CICS system failed because CICS does not support the dynamic installation of that resource. Journals cannot be installed dynamically. Journal models and transient data queues can be installed only in systems running CICS TS.

9. Status Failure

CICSplex SM performed a resource state check and determined that the specified resource could not be installed in the specified CICS system.

10. System State

The specified CICS system either is not active or does not support the EXEC CICS CREATE command.

Appendix A. MENU + CICSplex SM Command

Figure 170 shows the output when the **MENU +** command is issued from the CICSplex SM ISPF EUI. All CICSplex SM views are identified.

ANALYSIS	Real Time Analysis Operations Views
APACTV	Installed Definitions in Analysis Point
EVENT	Outstanding Events
RTAACTV	Installed Analysis Definitions
CONFIG	CMAS Configuration Operations Views
CICSplex	CMASs Managing CICSplex
CMAS	CMASs Known to Local CMAS
CMASplex	CICSplexes Managed by CMAS
CMTCLNK	CMAS-to-CMAS Links
CMTPLNK	CMAS-to-MAS Links
MONITOR	Monitoring Views
MONACTV	Installed Monitor Definitions
CONNECT	Connection Monitoring Views
MCONCT	Monitor ISC/MRO Connections
MCONCTS	Monitor ISC/MRO Connection Summary
MMODNAME	Monitor LU6.2 Modenames
DB2	DB2 and DBCTL Monitoring Views
MDB2THRD	Monitor DB2 Threads
MDB2THRS	Monitor DB2 Thread Summary
FEPI	FEPI Monitoring Views
MFECON	Monitor FEPI Connections
MFECONS	Monitor FEPI Connection Summary
FILE	File Monitoring Views
MCMDT	Monitor Data Tables
MCMDS	Monitor Data Table Summary
MLOCFILE	Monitor Local Files
MLOCFILS	Monitor Local File Summary
MREMFIL	Monitor Remote Files
MREMFILS	Monitor Remote File Summary
GLOBAL	Global Resource Monitoring Views
MLSRPBUF	Monitor LSR Pool Buffers
MLSRPBUS	Monitor LSR Pool Buffer Summary
MLSRPOOL	Monitor LSR Pools
MLSRPOOS	Monitor LSR Pool Summary
MTDQGBL	Monitor Transient Data Queue Usage
MTDQGBLS	Monitor Transient Data Queue Usage Summary
MTSQGBL	Monitor Temporary Storage Queue Usage
MTSQGBLS	Monitor Temporary Storage Queue Usage Summary
JOURNAL	Journal Monitoring Views
MJOURNAL	Monitor Journals
MJOURNLS	Monitor Journal Summary
MJRNLM	Monitor Journal Names
MJRNLMMS	Monitor Journal Name Summary

Figure 170 (Part 1 of 7). All CICSplex SM Views As Output of MENU + Command

PROGRAM	Program Monitoring Views
MPROGRAM	Monitor Programs
MPROGRAS	Monitor Program Summary
REGION	CICS Region Monitoring Views
MCICSDSA	Monitor Dynamic Storage Areas
MCICSDSS	Monitor Dynamic Storage Area Summary
MCICSRGN	Monitor CICS Systems
MCICSRGS	Monitor CICS System Summary
MTRNCLS	Monitor Transaction Classes
MTRNCLSS	Monitor Transaction Class Summary
TDQ	Transient Data Queue Monitoring Views
MINDTDQ	Monitor Indirect Transient Data Queues
MINDTDQS	Monitor Indirect Transient Data Queue Summary
MNTRATDQ	Monitor Intrapartition Transient Data Queues
MNTRATDS	Monitor Intrapartition Transient Data Queue Summary
MREMTDQ	Monitor Remote Transient Data Queues
MREMTDQS	Monitor Remote Transient Data Queue Summary
MXTRATDQ	Monitor Extrapartition Transient Data Queues
MXTRATDS	Monitor Extrapartition Transient Data Queue Summary
TERMINAL	Terminal Monitoring Views
MTERMNL	Monitor Terminals
MTERMNLS	Monitor Terminal Summary
TRANS	Transaction Monitoring Views
MLOCTRAN	Monitor Local Transactions
MLOCTRAS	Monitor Local Transaction Summary
MREMTRAN	Monitor Remote Transactions
MREMTRAS	Monitor Remote Transaction Summary
OPERATE	Operations Views
CONNECT	Connection Views
CONNECT	ISC/MRO Connections
CONNECTS	ISC/MRO Connection Summary
MODENAME	LU6.2 Modenames
MODENAMS	LU6.2 Modename Summary
PARTNER	CICS Partners
PARTNERS	CICS Partner Summary
PROFILE	CICS Profiles
PROFILES	CICS Profile Summary
DB2	DB2 and DBCTL Views
DBCTLSS	DBCTL Subsystems
DBCTLSSS	DBCTL Subsystem Summary
DB2SS	DB2 Subsystems
DB2SSS	DB2 Subsystem Summary
DB2THRD	DB2 Threads
DB2THRDS	DB2 Thread Summary
DB2TRAN	DB2 Transactions
DB2TRANS	DB2 Transaction Summary
DB2CONN	DB2 Connections
DB2CONNS	DB2 Connections Summary
DB2NTRY	DB2 Entry
DB2NTRYs	DB2 Entry Summary
DB2TRN	DB2 Trn
DB2TRNS	DB2 Trn Summary

Figure 170 (Part 2 of 7). All CICSplex SM Views As Output of MENU + Command

EXIT	Exit Views
EXITGLUE	Global User Exits
EXITGLUS	Global User Exit Summary
EXITTRUE	Task-related User Exits
EXITTRUS	Task-related User Exit Summary
FEPI	FEPI Views
FECNN	FEPI Connections
FECNNS	FEPI Connection Summary
FENODE	FEPI Nodes
FENODES	FEPI Node Summary
FEPOOL	FEPI Pools
FEPOOLS	FEPI Pool Summary
FEPROP	FEPI Property Sets
FEPROPS	FEPI Property Set Summary
FETRGT	FEPI Targets
FETRGTs	FEPI Target Summary
FILE	File Views
CMDT	Data Tables
CMDTS	Data Table Summary
DSNAME	Data Sets
DSNAMES	Data Set Summary
FILE	Files
FILES	File Summary
LOCFILE	Local Files
LOCFILES	Local File Summary
LSRPBUF	LSR Pool Buffers
LSRPBUS	LSR Pool Buffer Summary
LSRPOOL	LSR Pools
LSRPOOS	LSR Pool Summary
REMFIL	Remote Files
REMFILS	Remote File Summary
JOURNAL	Journal Views
DSKJRN	Disk Journals
DSKJRNLS	Disk Journal Summary
JOURNAL	Journals
JOURNALS	Journal Summary
JRNLMOD	Journal Models
JRNLMODS	Journal Models Summary
JRNLNAM	Journal Names
JRNLNAMS	Journal Names Summary
SMFJRN	SMF Journals
SMFJRNLS	SMF Journal Summary
STREAMNM	MVS Log Stream
STREAMNS	MVS Log Stream Summary
TAPJRN	Tape Journals
TAPJRNLS	Tape Journal Summary
VOLUME	Tape Journal Volumes
VOLUMES	Tape Journal Volume Summary
PROGRAM	Program Views
PROGRAM	Programs
PROGRAMS	Program Summary
RPLLIST	DFHRPL Data Sets
RPLLISTS	DFHRPL Data Set Summary

Figure 170 (Part 3 of 7). All CICSplex SM Views As Output of MENU + Command

REGION	CICS Region Views
CICSDSA	Dynamic Storage Areas
CICSDSAS	Dynamic Storage Area Summary
CICSRGN	CICS Systems
CICSRGNS	CICS System Summary
SYSDUMP	System Dump Codes
SYSDUMPS	System Dump Code Summary
TRANDUMP	Transaction Dump Codes
TRANDUMS	Transaction Dump Code Summary
TRNCLS	Transaction Classes
TRNCLSS	Transaction Class Summary
TASK	Task Views
REQID	Request IDs
REQIDS	Request ID Summary
TASK	Tasks
TASKS	Task Summary
TDQ	Transient Data Queue Views
EXTRATDQ	Extrapartition Transient Data Queues
EXTRATDS	Extrapartition Transient Data Queue Summary
INDTDQ	Indirect Transient Data Queues
INDTDQS	Indirect Transient Data Queue Summary
INTRATDQ	Intrapartition Transient Data Queues
INTRATDS	Intrapartition Transient Data Queue Summary
QUEUE	Transient Data Queues
QUEUES	Transient Data Queue Summary
REMTDQ	Remote Transient Data Queues
REMTDQS	Remote Transient Data Queue Summary
TDQGBL	Transient Data Queue Usage
TDQGBLS	Transient Data Queue Usage Summary
TEMPSTOR	Temporary Storage Queue Views
TSQ	Temporary Storage Queues
TSQS	Temporary Storage Queue Summary
TSQGBL	Temporary Storage Queue Usage
TSQGBLS	Temporary Storage Queue Usage Summary
TERMINAL	Terminal Views
AIMODEL	Auto Install Models
AIMODELS	Auto Install Model Summary
TERMNL	Terminals
TERMNLS	Terminal Summary
TRANS	Transaction Views
LOCTRAN	Local Transactions
LOCTRANS	Local Transaction Summary
REMTRAN	Remote Transactions
REMTRANS	Remote Transaction Summary
TRAN	Transactions
TRANS	Transaction Summary
UOW	Unit Of Work Views
UOWORK	Unit Of Work
UOWORKS	Unit Of Work Summary
UOWDSNF	Unit Of Work Shunted
UOWDSNFS	Unit Of Work Shunted Summary
UOWENQ	Unit of Work Enqueue
UOWENQS	Unit of Work Enqueue Summary
UOWLINK	Unit of Work Link
UOWLINKS	Unit of Work Link Summary

Figure 170 (Part 4 of 7). All CICSplex SM Views As Output of MENU + Command

TOPOLOGY	Topology Operations Views
MAS	Managed Address Spaces
WORKLOAD	Workload Operations Views
WLMWORK	Active Workloads
WLMAWTOR	TORs in an Active Workload
WLMAWAOR	AORs in an Active Workload
WLMWDEF	Active Workload Definitions
WLMATGRP	Transaction Groups Associated with an Active Workload
WLMATAFF	Transaction Affinities for an Active Workload
WLMATRAN	Transactions Associated with an Active Workload
ADMSAM	RTA System Availability Monitoring Administration Views
CICSSYS	CICS System Definitions
RTASPEC	Analysis Specifications
ACTNDEF	Action Definitions
PERIODEF	Time Period Definitions
RTASCOPE	Members Associated with Analysis Specifications
ADMMRM	RTA MAS Resource Monitoring Administration Views
RTASPEC	Analysis Specifications
RTAGROUP	Analysis Groups
RTADEF	Analysis Definitions
EVALDEF	Evaluation Definitions
STATDEF	User Status Probe Definitions
ACTNDEF	Action Definitions
PERIODEF	Time Period Definitions
RTASCOPE	Members Associated with Analysis Specifications
RTAINSPC	Analysis Groups in Analysis Specifications
RTAINGRP	Analysis and Status Definitions in Groups
ADMAPM	RTA Analysis Point Monitoring Administration Views
APSPEC	Analysis Point Specifications
RTAGROUP	Analysis Groups
RTADEF	Analysis Definitions
EVALDEF	Evaluation Definitions
ACTNDEF	Action Definitions
PERIODEF	Time Period Definitions
APCMAS	Analysis Point Specifications in CMASs
RTAINAPS	Analysis Groups in Analysis Point Specifications
RTAINGRP	Analysis and Status Definitions in Groups
ADMCONFG	CMAS Configuration Administration Views
BATCHREP	Batched Repository Updates
CPLXDEF	CICSplex Definitions
CPLXCMAS	CMAS in CICSplex Definitions
CMTCMDEF	CMAS-to-CMAS Link Definitions
CMTPMDEF	CMAS-to-RMAS Link Definitions

Figure 170 (Part 5 of 7). All CICSplex SM Views As Output of MENU + Command

ADMMON	Monitor Administration Views
MONSPEC	Monitor Specifications
MONGROUP	Monitor Groups
MONDEF	Monitor Definitions
PERIODEF	Time Period Definitions
MONSCOPE	Members Associated with Monitor Specifications
MONINSPC	Monitor Groups in Specifications
MONINGRP	Monitor Definitions in Groups
ADMTOPOL	Topology Administration Views
CICSSYS	CICS System Definitions
CICSGRP	CICS System Group Definitions
SYSGRPC	Members of CICS System Groups
PERIODEF	Time Period Definitions
ADMWLM	Workload Manager Administration Views
WLMSPEC	Workload Specifications
WLMGROUP	Workload Groups
WLMDEF	Workload Definitions
TRANGRP	Transaction Groups
WLMSCOPE	Members Associated with Workload Specifications
WLMINSPC	Workload Groups in Specifications
WLMINGRP	Workload Definitions in Groups
DTRINGRP	Transactions in Transaction Groups
ADMBAS	Business Application Services Administration Views
RESDESC	Resource Descriptions
RASINDSC	Resource Assignments in Description
RESINDSC	Resource Groups in Description
RASGNDEF	Resource Assignment
RDSCPROC	Resource Description Process
SYSRES	CICS System Resources
SYSLINK	CICS System Links
RASPROC	Resource Assignment Process
RESGROUP	Resource Groups
RESGROUP	Resource Groups
RESINGRP	Resources in Resource Group

Figure 170 (Part 6 of 7). All CICSplex SM Views As Output of MENU + Command

ADMRES	Business Application Services Resource Views
CONNDEF	Connection Definitions
DB2CDEF	DB2 Connection Definitions
DB2EDEF	DB2 Entry Definitions
DB2TDEF	DB2 Transaction Definitions
FILEDEF	File Definitions
FSEGDEF	File Key Segment Definitions
JRNLEDEF	Journal Definitions
JRNMDEF	Journal Model Definitions
LSRDEF	LSR Pool Definitions
MAPDEF	Map Set Definitions
PARTDEF	Partner Definitions
PARTDEF	Partner Definitions
PRTNDEF	Partition Set Definitions
PROFDEF	Profile Definitions
PROGDEF	Program Definitions
SESSDEF	Session Definitions
TDQDEF	Transient Data Queue Definitions
TERMDEF	Terminal Definitions
TRANDEF	Transaction Definitions
TRNCLDEF	Transaction Class Definitions
TYPTMDEF	Typeterm Definitions

Figure 170 (Part 7 of 7). All CICSplex SM Views As Output of MENU + Command

Appendix B. Full BAS RESEDESC Map Panels

In this appendix we provide the maps of the applications we migrated to *full BAS*.

Figure 171 shows the map of the COMMON resource description that is not specific to any of our applications. The following structure is displayed when you issue the MAP command from the RESEDESC view.

```

----- MAP of RESEDESC COMMON ----- Row 1 of 4
COMMAND ==>                               Scroll ==>
RESEDESC   RASINDSC   RASGNDEF   RESGROUP   RESTYPE   RESDEF
-----
COMMON    --- <----->  +- COMLSR   --- COMMON  --- LSRDEF  +- LSRPOOL2  1
                                     |
                                     - COMPROGS --- COMMON  --- PROGDEF  --- DSWFORVV  1
                                     +- COMTRAN  --- COMMON  --- TRANDEF  --- /FOR      1
  
```

Figure 171. Map of RESEDESC COMMON

Figure 172 shows the map of the resource description for the Hotel Reservation application.

```

----- MAP of RESEDESC HOTELRES ----- Row 1 of 18
COMMAND ==>                               Scroll ==>
RESEDESC   RASINDSC   RASGNDEF   RESGROUP   RESTYPE   RESDEF
-----
HOTELRES   --- <----->  +- HOTFIL12 --- HOTELRES --- FILEDEF  +- HOTEL1    1
                                     |
                                     +- HOTEL1X   1
                                     - HOTFIL41 --- HOTELRES --- FILEDEF  +- HOTEL1    1
                                     |
                                     +- HOTEL1X   1
                                     - HOTMAPS  --- HOTELRES --- MAPDEF   +- MAPHR1I   1
                                     |
                                     |   MAPHR10   1
                                     |   MAPHR20   1
                                     |   MAPHX1I   1
                                     |   MAPHX10   1
                                     |   MAPHX20   1
                                     +- MAPHX20   1
                                     - HOTPROGS --- HOTELRES --- PROGDEF  +- DSWHR1VV  1
                                     |
                                     |   DSWHR2VV  1
                                     |   DSWHX1VV  1
                                     |   DSWHX2VV  1
                                     +- DSWHX2VV  1
                                     +- HOTTRAN  --- HOTELRES --- TRANDEF  +- HR1       1
                                     |
                                     |   HR2       1
                                     |   HX1       1
                                     +- HX2       1
  
```

Figure 172. Map of RESEDESC HOTELRES

Figure 173 on page 168 shows the map of the resource description for the Inventory Tracking application.

----- MAP of RESDESC INVENTOR -----					Row 1 of 42
COMMAND ==>					Scroll ==>
RESDESC	RASINDSC	RASGNDEF	RESGROUP	RESTYPE	RESDEF
-----	-----	-----	-----	-----	-----
INVENTOR	-- <----->	+- INVFIL12	--- INVENTOR	--- FILEDEF	+- DEPSUMDB 1
					- DEPSUMDX 1
					- EMPACTDB 1
					- EMPACTDX 1
					- ITEMACT 1
					- ITEMACTX 1
					- LABOPSDB 1
					+ LABOPSDX 1
		- INVFIL41	--- INVENTOR	--- FILEDEF	+- DEPSUMDB 1
					- DEPSUMDX 1
					- EMPACTDB 1
					- EMPACTDX 1
					- ITEMACT 1
					- ITEMACTX 1
					- LABOPSDB 1
					+ LABOPSDX 1
		- INVMAPS	--- INVENTOR	--- MAPDEF	+- MAPIT1B 1
					- MAPIT1I 1
					- MAPIT10 1
					- MAPIT2I 1
					- MAPIT20 1
					- MAPIT8I 1
					- MAPIT80 1
					- MAPIX1B 1
					- MAPIX1I 1
					- ITEMACTX 1
					- LABOPSDB 1
					+ LABOPSDX 1
		- INVMAPS	--- INVENTOR	--- MAPDEF	+- MAPIT1B 1
					- MAPIT1I 1
					- MAPIT10 1
					- MAPIT2I 1
					- MAPIT20 1
					- MAPIT8I 1
					- MAPIT80 1
					- MAPIX1B 1
					- MAPIX1I 1
					- MAPIX10 1
					- MAPIX2I 1
					- MAPIX20 1
					- MAPIX8I 1
					+ MAPIX80 1
		- INVPROGS	--- INVENTOR	--- PROGDEF	+- DSWIT1VV 1
					- DSWIT2VV 1
					- DSWIT8VV 1
					- DSWIX1VV 1
					- DSWIX2VV 1
					+ DSWIX8VV 1

Figure 173 (Part 1 of 2). Map of RESDESC INVENTOR

+ - INVTRANS	---	INVENTOR	---	TRANDEF	+ - IT1	1
					- IT2	1
					- MAPIX2I	1
					- MAPIX20	1
					- MAPIX8I	1
					+ - MAPIX80	1
- INVPROGS	---	INVENTOR	---	PROGDEF	+ - DSWIT1VV	1
					- DSWIT2VV	1
					- DSWIT8VV	1
					- DSWIX1VV	1
					- DSWIX2VV	1
					+ - DSWIX8VV	1
+ - INVTRANS	---	INVENTOR	---	TRANDEF	+ - IT1	1
					- IT2	1
					- IT8	1
					- IX1	1
					- IX2	1
					+ - IX8	1

Figure 173 (Part 2 of 2). Map of RESDESC INVENTOR

Figure 174 on page 170 shows the map of the resource description for the Production Specification application.

----- MAP of RESDESC SPECIFIC -----					Row 1 of 32
COMMAND ==>	RASINDSC	RASGNDEF	RESGROUP	RESTYPE	Scroll ==>
RESDESC					RESDEF
-----	-----	-----	-----	-----	-----
SPECIFIC --- <----->		+-- SFEFIL12	--- SPECIFIC	--- FILEDEF	+-- COMPOSDB 1
					- COMPOSDX 1
					- ITEMMAST 1
					- ITEMMA SX 1
					- LABOP SDB 1
					- LABOP SDX 1
					- PRODCONT 1
					+-- PRODCONX 1
		- SFEFIL41	--- SPECIFIC	--- FILEDEF	+-- COMPOSDB 1
					- COMPOSDX 1
					- ITEMMAST 1
					- ITEMMA SX 1
					- LABOP SDB 1
					- LABOP SDX 1
					- PRODCONT 1
					+-- PRODCONX 1
		- SPEMAPS	--- SPECIFIC	--- MAPDEF	+-- MAPPS2I 1
					- MAPPS20 1
					- MAPPS3I 1
					- MAPPS30 1
					- MAPPX2I 1
					- MAPPX20 1
					- MAPPX3I 1
					+-- MAPPX30 1
		- SPEPROGS	--- SPECIFIC	--- PROGDEF	+-- DSWPS2VV 1
					- LABOP SDX 1
					- PRODCONT 1
					+-- PRODCONX 1
		- SPEMAPS	--- SPECIFIC	--- MAPDEF	+-- MAPPS2I 1
					- MAPPS20 1
					- MAPPS3I 1
					- MAPPS30 1
					- MAPPX2I 1
					- MAPPX20 1
					- MAPPX3I 1
					+-- MAPPX30 1
		- SPEPROGS	--- SPECIFIC	--- PROGDEF	+-- DSWPS2VV 1
					- DSWPS3VV 1
					- DSWPX2VV 1
					+-- DSWPX3VV 1
		+-- SPETRANS	--- SPECIFIC	--- TRANDEF	+-- PS2 1
					- PS3 1
					- PX2 1
					+-- PX3 1

Figure 174. Map of RESDESC SPECIFIC

Figure 175 on page 171 shows the map of the resource description for the Stock Control application.

----- MAP of RESEDESC STOCK -----						Row 1 of 33
COMMAND ==>						Scroll ==>
RESEDESC	RASINDSC	RASGNDEF	RESGROUP	RESTYPE	RESDEF	
STOCK	<----->	+ STOFIL12	--- STOCK	--- FILEDEF	+ INVENTOR	1
					- INVENTOX	1
					- VENDOR	1
					+ VENDORX	1
		- STOFIL41	--- STOCK	--- FILEDEF	+ INVENTOR	1
					- INVENTOX	1
					- VENDOR	1
					+ VENDORX	1
		- STOMAPS	--- STOCK	--- MAPDEF	+ MAPSC2I	1
					- MAPSC20	1
					- MAPSC4I	1
					- MAPSC40	1
					- MAPSC6I	1
					- MAPSC60	1
					- MAPSX2I	1
					- MAPSX20	1
					- MAPSX4I	1
					- MAPSX40	1
					- MAPSX6I	1
					+ MAPSX60	1
		- STOPROGS	--- STOCK	--- PROGDEF	+ DSWSC2VV	1
					- DSWSC4VV	1
					- DSWSC6VV	1
					- DSWSX2VV	1
					- DSWSX4VV	1
					- MAPSC60	1
					- MAPSX2I	1
					- MAPSX20	1
					- MAPSX4I	1
					- MAPSX40	1
					- MAPSX6I	1
					+ MAPSX60	1
		- STOPROGS	--- STOCK	--- PROGDEF	+ DSWSC2VV	1
					- DSWSC4VV	1
					- DSWSC6VV	1
					- DSWSX2VV	1
					- DSWSX4VV	1
					+ DSWSX6VV	1
		- STOTRANS	--- STOCK	--- TRANDEF	+ SC2	1
					- SC4	1
					- SC6	1
					- SX2	1
					- SX4	1

Figure 175. Map of RESEDESC STOCK

Figure 176 on page 172 shows the map of the resource description for the Teller System application.

----- MAP of RESEDESC TELLER -----						Row 1 of 8
COMMAND ==>						Scroll ==>
RESEDESC	RASINDSC	RASGNDEF	RESGROUP	RESTYPE	RESDEF	
-----	-----	-----	-----	-----	-----	-----
TELLER	---	<----->	+-- TELMAPS	---	TELLER	---
					MAPDEF	+-- MAPTS1I 1
						- MAPTS10 1
						- MAPTX1I 1
						+-- MAPTX10 1
			- TELPROGS	---	TELLER	---
					PROGDEF	+-- DSWTS1VV 1
						+-- DSWTX1VV 1
			+-- TELTRANS	---	TELLER	---
					TRANDEF	+-- TS1 1
						+-- TX1 1

Figure 176. Map of RESEDESC TELLER

Appendix C. Special Notices

This publication is intended to help customers implementing CICSplex System Manager for MVS/ESA Version 1 Release 3 and its Business Application Services. CICSplex System Manager for MVS/ESA Version 1 Release 3 is also an element of CICS Transaction Server for OS/390 Version 1 Release 2. The information in this publication is not intended as the specification of any programming interfaces that are provided by CICS Transaction Server for OS/390 Version 1 Release 2 or CICSplex System Manager for MVS/ESA Version 1 Release 3. See the PUBLICATIONS section of the IBM Programming Announcement for CICS Transaction Server for OS/390 Version 1 Release 2 for more information about what publications are considered to be product documentation.

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DFSMS	DFSMS/MVS
DFSMSdfp	DFSMSdss
DFSMShsm	DFSMSrmm
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Appendix D. Related Publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redbook.

D.1 International Technical Support Organization Publications

For information on ordering these ITSO publications see "How to Get ITSO Redbooks" on page 179.

- *CICS Transaction Server for OS/390: Version 1 Release 2 Implementation Guide*, SG24-2234
- *Automating CICS/ESA Operations with CICSplex SM and NetView*, SG24-4424
- *CICS Workload Management Using CICSplex SM and the MVS/ESA Workload Manager*, GG24-4286

D.2 Redbooks on CD-ROMs

Redbooks are also available on CD-ROMs. **Order a subscription** and receive updates 2-4 times a year at significant savings.

CD-ROM Title	Subscription Number	Collection Kit Number
System/390 Redbooks Collection	SBOF-7201	SK2T-2177
Networking and Systems Management Redbooks Collection	SBOF-7370	SK2T-6022
Transaction Processing and Data Management Redbook	SBOF-7240	SK2T-8038
Lotus Redbooks Collection	SBOF-6899	SK2T-8039
Tivoli Redbooks Collection	SBOF-6898	SK2T-8044
AS/400 Redbooks Collection	SBOF-7270	SK2T-2849
RS/6000 Redbooks Collection (HTML, BkMgr)	SBOF-7230	SK2T-8040
RS/6000 Redbooks Collection (PostScript)	SBOF-7205	SK2T-8041
RS/6000 Redbooks Collection (PDF Format)	SBOF-8700	SK2T-8043
Application Development Redbooks Collection	SBOF-7290	SK2T-8037

D.3 Other Publications

These publications are also relevant as further information sources:

- *CICS System Definition Guide*, SC33-1682
- *CICS Resource Definition Guide*, SC33-1684
- *CICS Intercommunication Guide*, SC33-1695
- *CICS Messages and Codes*, GC33-1694
- *CICS Operations and Utilities Guide*, SC33-1685
- *CICS Supplied Transactions*, SC33-1686
- *CICS Recovery and Restart Guide*, SC33-1698
- *CICSplex System Manager for MVS/ESA Concepts and Planning*, GC33-0786
- *CICSplex System Manager for MVS/ESA Setup*, GC33-0784
- *CICSplex System Manager for MVS/ESA Managing Business Applications*, SC33-1809
- *CICSplex System Manager for MVS/ESA User Interface Guide*, SC33-0788

- *CICSplex System Manager for MVS/ESA Operations Reference*, SC33-0789
- *CICSplex System Manager for MVS/ESA Application Programming Interface*, SC33-1430
- *CICSplex System Manager for MVS/ESA Resource Tables Reference*, SC33-1220
- *CICSplex System Manager for MVS/ESA Messages and Codes*, GC33-0790

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This section explains how both customers and IBM employees can find out about ITSO redbooks, CD-ROMs, workshops, and residencies. A form for ordering books and CD-ROMs is also provided.

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- **Tools Disks**

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TOOLCAT REDPRINT
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TOOLS SENDTO CANVM2 TOOLS REDPRINT GET SG24xxxx PACKAGE (Canadian users only)
```

To get BookManager BOOKs of redbooks, type the following command:

```
TOOLCAT REDBOOKS
```

To get lists of redbooks, type the following command:

```
TOOLS SENDTO USDIST MKTTOOLS MKTTOOLS GET ITSOCAT TXT
```

To register for information on workshops, residencies, and redbooks, type the following command:

```
TOOLS SENDTO WTSCPOK TOOLS ZDISK GET ITSOREGI 1998
```

- **REDBOOKS Category on INEWS**

- **Online** — send orders to: USIB6FPL at IBMMAIL or DKIBMBSH at IBMMAIL

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Glossary

action command. A CICSplex SM command that affects one or more of the resources represented in a view. Action commands can be issued from either the command field in the control area or the line command field in a displayed view. Valid action commands are listed with the description of each view.

adjacent CMAS. A CICSplex SM address space (CMAS) that is connected to the local CMAS through a direct CMAS-to-CMAS link. See also *local CMAS*.

alter expression. A character string that defines the changes to be made to a resource attribute. An alter expression is made up of one or more attribute expressions.

analysis point. A CICSplex SM address space (CMAS) that is responsible for analyzing the current state of the CICSplex against its desired state. See also *CICSplex SM address space (CMAS)*.

attribute expression. A reference to a resource attribute and, in some cases, its value. Attribute expressions are used to build alter expressions, filter expressions, and override expressions.

batched repository-update facility. A CICSplex SM facility, invoked from the CICSplex SM user interface, for the bulk application of CICSplex SM definitions to a CMAS data repository.

business application. Any set of CICS resources that represent a meaningful entity to an enterprise or a user (such as payroll).

Business Application Services (BAS). The component of CICSplex SM that provides the ability to define and manage business applications in terms of their CICS resources and associated CICS systems. BAS provides a central definition repository for CICS systems, complete with installation facilities and the ability to restrict a CICSplex SM request to those resources defined as being part of the business application. See also *business application, scope*.

CICSplex. (1) A CICS complex. A CICSplex consists of two or more regions that are linked using CICS intercommunication facilities. The links can be either intersystem communication (ISC) or interregion communication (IRC). Within a CICSplex they are usually IRC links. (2) In a CICSplex SM environment, a management domain. The largest set of CICS regions or systems to be manipulated as a single CICSplex SM entity. CICS regions in a CICSplex SM CICSplex do not have to be connected to each other.

CICSplex SM. CICSplex System Manager for MVS/ESA

CICSplex SM address space (CMAS). A CICSplex SM component that is responsible for managing a CICSplex. A CMAS provides the single system image for a CICSplex by serving as the interface to other CICSplexes and external programs. There must be at least one CMAS for each MVS image that you are running with CICSplex SM. A single CMAS can manage CICS systems within one or more CICSplexes. See also *coordinating address space (CAS)*.

CICSplex System Manager for MVS/ESA (CICSplex SM). An IBM CICS system management product that provides a single system image and a single point of control for one or more CICSplexes, including CICSplexes on heterogeneous operating systems.

CICS system. (1) The entire collection of hardware and software required by CICS. (2) In CICSplex SM topology, a definition referring to a system that is to be managed by CICSplex SM. See also *CICSplex, CICS system group*.

CICS system group. (1) A set of CICS systems within a CICSplex that can be managed as a single entity. (2) In CICSplex SM topology, the user-defined name, description, and content information for a CICS system group. A CICS system group can be made up of CICS systems or other CICS system groups. See also *CICSplex, CICS system*.

context. A named part of the CICSplex environment that is currently being acted upon by CICSplex SM. For configuration tasks, the context is a CICSplex SM address space (CMAS); for all other tasks, it is a CICSplex. See also *scope*.

coordinating address space (CAS). An MVS subsystem that provides ISPF end-user access to the CICSplex. There must be at least one CAS for each MVS image on which you are running CICSplex SM. See also *CICSplex SM address space (CMAS), managed address space (MAS)*.

data repository. In CICSplex SM, the VSAM data set that stores administrative data, such as topology and monitor definitions, for a CICSplex SM address space (CMAS).

Environment Services System Services (ESSS). A component of CICSplex SM that implements the formal MVS/ESA subsystem functions required by the product. ESSS provides cross-memory services, data space management, connection services, and lock management. An ESSS system address space is created at CICSplex SM initialization and remains in the MVS image for the life of the IPL.

event. A significant occurrence within the CICSplex or system for which the user has requested notification. For example, the end of processing, a subsystem failure, or any unusual condition in the system could be defined by a user as an event.

filter expression. A character string made up of logical expressions to be used in filtering resources or resource definitions.

generic alert. A Systems Network Architecture (SNA) network management vector that enables a product to signal a problem to the network. CICSplex SM uses generic alerts as part of its interface to NetView.

hyperlink. A direct connection between the data in one CICSplex SM view and a view containing related information. For example, from a view that lists multiple CICS resources, there may be a hyperlink to a detailed view for one of the resources. To use a hyperlink, place the cursor in the data portion of a hyperlink field and press Enter.

hyperlink field. On a CICSplex SM view, a field for which a hyperlink is defined. The headings of hyperlink fields are shown in high intensity or color, depending on the terminal type.

local CMAS. The CICSplex SM address space (CMAS) that a user identifies as the current context when performing CMAS configuration tasks.

local MAS. A managed address space (MAS) that resides in the same MVS image as the CICSplex SM address space (CMAS) that controls it and that uses the Environment Services System Services (ESSS) to communicate with the CMAS.

logical scope. A set of logically related CICS resources that are identified in a CICSplex SM resource description. A logical scope can be used to qualify the context of a CICSplex SM request.

maintenance point. A CICSplex SM address space (CMAS) that is responsible for maintaining CICSplex SM definitions in its data repository and distributing them to other CMASs involved in the management of a CICSplex. See also *data repository*.

managed address space (MAS). A CICS system that is being managed by CICSplex SM. See also *local MAS*, *remote MAS*.

MAS agent. A CICSplex SM component that acts within a CICS system to provide monitoring and data collection for the CICSplex SM address space (CMAS). The level of service provided by a MAS agent depends on the level of CICS the system is running under and whether it is a local or remote MAS. See also *CICSplex SM address space (CMAS)*, *local MAS*, *remote MAS*.

NetView. An IBM network management product that can provide rapid notification of events and automated operations. CICSplex SM can be set up to send generic alerts to NetView as part of its event processing capabilities.

Real-time analysis (RTA). A component of CICSplex SM that is responsible for analyzing the current state of a CICS system against its desired state.

related scope. A CICS system where resources defined to CICSplex SM as remote should be assigned and, optionally, installed as local resources. See also *target scope*.

remote MAS. A managed address space (MAS) that uses MRO or LU 6.2 to communicate with the CICSplex SM address space (CMAS) that controls it. A remote MAS may or may not reside in the same MVS image as the CMAS that controls it.

resource. Any physical or logical item in a CICS system, such as a transient data queue, buffer pool, file, program, or transaction.

resource assignment. A user-defined statement that selects resource definitions to be assigned to CICS systems and, optionally, specifies resource attributes to override those definitions. A resource assignment applies to a single resource type and must be associated with a resource description. See also *resource definition*, *resource description*.

resource attribute. A characteristic of a CICS resource, such as the size of a buffer pool.

resource definition. In CICSplex SM, a user-defined statement of the physical and operational characteristics of a CICS resource. Resource definitions can be associated with resource descriptions as part of a resource group. See also *resource description*, *resource group*.

resource description. A user-defined set of CICSplex SM resource definitions that can be automatically installed in CICS systems and named as a logical scope for CICSplex SM requests. Resource descriptions represent the largest set of CICS resources that can be managed by CICSplex SM as a single entity. A resource description can be associated with one or more resource assignments. See also *logical scope*, *resource assignment*, *resource definition*.

resource group. A user-defined set of CICSplex SM resource definitions. A resource group can be associated with resource descriptions either directly or by means of resource assignments. See also *resource assignment*, *resource definition*, *resource description*.

resource type. A group of related resources, such as files.

scope. A named part of the CICSplex environment that qualifies the context of a CICSplex SM request. The scope can be the CICSplex itself, a CICS system, or a CICS system group. For configuration tasks, where the context is a CICSplex SM address space (CMAS), the scope is ignored. See also *context*.

single point of control. The ability to access and control all CICS systems in a CICSplex from a single terminal or user session.

single system image. The collection and presentation of data about multiple CICS systems as though they were a single CICS system. In CICSplex SM, the CICSplex SM address space (CMAS) provides the single system image.

sysplex. A set of MVS systems communicating and cooperating with each other through certain multisystem hardware components and software services to process customer workloads.

target scope. A CICS system or CICS system group where resources defined to CICSplex SM as remote

should be assigned and, optionally, installed. See also *related scope*.

temporary maintenance point. A CICSplex SM address space (CMAS) that serves as the maintenance point when the identified maintenance point is unavailable. See also *maintenance point*.

view. A formatted display of selected data about CICS resources or CICSplex SM definitions. The data in a view is obtained from a query and can be presented in one or more forms. The data can be limited to a subset of CICSplex resources or definitions by establishing a context and scope. See also *view command*.

view command. A CICSplex SM command that displays a view in a window of the display area. The name of the view displayed matches the name of the view command. See also *view*.

workload. A named set of transactions and CICS systems, acting as AORs and TORs, that form a single, dynamic entity.

List of Abbreviations

AOR	application owning region	LSR	local shared resources
API	application programming interface	LU 6.2	logical unit 6.2
APPC	Advanced Program-to-Program Communication	MAS	managed address space
BAS	Business Application Services	MRO	multiregion operation
BDAM	Basic Direct Access Method	MVS	Multiple Virtual Storage
CAS	coordinating address space	NSR	nonshared resources
CICS	Customer Information Control System	PLT	program list table
CICS TS	Customer Information Control System Transaction Server	PLTPI	program list table post initialization
CIU	CICS Interdependencies Utility	PLTSD	program list table shutdown
CMAS	CICSplex SM address space	POR	printer owning region
CSD	CICS system definition	PTF	program temporary fix
CWI	CICS Web Interface	QOR	queue owning region
DB2	DATABASE 2	RCT	resource control table
DBCTL	database control	RDO	resource definition online
DOR	data owning region	RLS	record level sharing
EIB	EXEC interface block	RTA	real-time analysis
ESM	external security manager	SIT	system initialization table
EUI	end-user interface	SPI	system programming interface
FOR	file owning region	TOR	terminal owning region
IBM	International Business Machines Corporation	TPNS	teleprocessing network simulator
IRC	interregion communication	TSO	Time Sharing Option
ISC	intersystem communication	TST	temporary storage table
ISPF	Interactive System Productivity Facility	UOW	unit of work
LMAS	local managed address space	VSAM	Virtual Storage Access Method
		XPI	exit programming interface
		WLM	workload management
		WWW	World Wide Web

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