DataRefresher

Installation and Customization Tips for MVS and OS/2

Release 1.1
Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page viii.
## Contents

Notices .................................................. viii
Trademarks .............................................. viii

About This Book ....................................... ix
How This Book Is Organized ......................... ix
Acknowledgements ..................................... x

Chapter 1. Product Overview ............................... 1
DataRefresher Features ................................ 1
Deciding Which Features to Install ................... 3
How DataRefresher Features and Components Are Packaged ..... 4
Prerequisite Hardware and Software ..................... 6

Chapter 2. Overview of the DataRefresher Installation Process ............ 10
Knowledge Required to Install DataRefresher ................ 10
Installation Activities .................................... 10

Chapter 3. Preparing for Installation ...................... 13
Prerequisite Hardware and Software Check ............... 13
Installation Worksheets ................................. 14

Chapter 4. How the Installer and SMP/E Work .................. 22
How the Installer Works ................................ 22
How System Modification Program Extended (SMP/E) Works ........ 22

Chapter 5. Installing DataRefresher on MVS .................. 26
Preparing for Installation ............................... 26
Installing the Installer .................................. 27
Using the Installer to Install the Base Feature .......... 29
Using the Installer to Install the GDE Feature (JQY5113) .... 30
Using the Installer to Install the PWS Feature on MVS ...... 31
Using the Installer to Install the RDE (REM) Feature ...... 32
Using the Installer to Install the Uppercase and Kanji Features ... 32
Next Steps (If You Want DataRefresher OS/2) ............ 33
Summary of DataRefresher Jobs ........................ 33
Installation Tips ....................................... 35
Using the Installer Control Table and Determining Errors .... 37

Chapter 6. Configuring APPC for DataRefresher ................ 40
How APPC Works with DataRefresher .................. 40
How MVS, OS/2 and DataRefresher Link Together .......... 41
Overview of Steps to Configuring APPC .................. 43
Configuring APPC for DataRefresher on the Host .......... 43
Configuring APPC for DataRefresher on the Workstation .... 52
Conversation Flow between Workstation and Host ......... 72
Debugging the APPC Connection ....................... 74
APPC Information Sources ............................. 77

Chapter 7. Downloading and Installing DataRefresher OS/2 (PWS) on Your Workstation ................ 79
## Figures

1. Extracting IMS Data with the General Data Extract Feature .................. 3
2. Using DataRefresher OS/2 ........................................... 4
3. Extracting DB2 Data with the Relational Data Extract Feature .............. 4
4. Flowchart of DataRefresher Installation Activities ................................ 11
5. SMP/E Zones and Libraries ........................................... 24
6. Order in Which Features Should Be Installed ..................................... 27
7. Associated Identifiers in VTAM/MVS, CM/2, and DataRefresher .............. 41
8. Values and Identifiers in VTAM/MVS, CM/2, and DataRefresher .............. 42
9. MVS VTAM Definition for a Workstation ..................................... 44
10. MVS/APPC LU6.2 Definitions .......................................... 45
11. VTAM Definition for a Logmode .......................................... 46
12. APPC Administration ...................................................... 46
13. List of TP Profiles ....................................................... 47
14. Add TP Profile ............................................................ 47
15. Add TP Profile ............................................................ 48
16. Add JCL for TP Profile ..................................................... 48
17. Sample JCL for the TP Profile ........................................... 49
18. APPC/MVS Administration Batch Utility—ATBSDFMU ......................... 49
19. APPCPM00 Member in SYS1.PARMLIB .................................. 50
20. ASCHPM00 Member in SYS1.PARMLIB .................................. 51
21. Communications Manager Setup Window ........................................ 53
22. Open Configuration Window ............................................... 54
23. Communications Manager Configuration Definition Window .................. 55
24. Communications Manager Profile List Sheet Window ........................... 55
25. Token Ring or Other LAN Types DLC Adapter Parameters Window .......... 56
26. Communications Manager Profile List Sheet Window ........................... 57
27. Local Node Characteristics Window ........................................ 58
28. Connections List Window ................................................... 59
29. Adapter List Window ....................................................... 60
30. Create a Connection to a Host Window ...................................... 60
31. Partner LUs Window ....................................................... 62
32. SNA Features List Window ............................................... 63
33. Create a Local LU Window ................................................ 64
34. Mode Definition Window ................................................... 65
35. Transaction Program Definition Window ....................................... 66
36. Additional TP Parameters Window .......................................... 66
37. CPI Communications Side Information Window ................................... 67
38. CPI Communications Program Security Window ................................... 68
39. Updating the Local LU Alias Name in the NDF File ............................ 69
40. Sample NDF File .......................................................... 70
41. DataRefresher APPC Conversation: Inbound Flow ............................. 72
42. DataRefresher APPC Conversation: outbound Flow ............................ 73
43. Installation Window ........................................................ 82
44. Install from MVS Host Window ........................................... 83
45. Instructions Window ........................................................ 84
46. Installation and Maintenance Window .......................................... 85
47. Install Window ............................................................. 85
48. Install – Directories Window ............................................... 86
49. Install – Progress Window ................................................... 87
50. Create DataRefresher Database Window ....................................... 87
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Create DataRefresher Database Window, during Database Creation</td>
<td>88</td>
</tr>
<tr>
<td>52</td>
<td>Catalog DataRefresher Remote Database Window</td>
<td>89</td>
</tr>
<tr>
<td>53</td>
<td>Installation and Maintenance Window</td>
<td>90</td>
</tr>
<tr>
<td>54</td>
<td>Install – Directories Window (LAN Version)</td>
<td>91</td>
</tr>
<tr>
<td>55</td>
<td>Catalog DataRefresher Remote Database Window, with Values for a Remote Server</td>
<td>92</td>
</tr>
<tr>
<td>56</td>
<td>Delete Window</td>
<td>97</td>
</tr>
<tr>
<td>57</td>
<td>Delete – Progress Window</td>
<td>98</td>
</tr>
<tr>
<td>58</td>
<td>Installation and Maintenance Message</td>
<td>98</td>
</tr>
<tr>
<td>59</td>
<td>DVRXLMG0 CLIST</td>
<td>102</td>
</tr>
<tr>
<td>60</td>
<td>Example of Specifying All Objects for Migration</td>
<td>103</td>
</tr>
<tr>
<td>61</td>
<td>Example of Excluding Objects from Migration</td>
<td>103</td>
</tr>
<tr>
<td>62</td>
<td>Example of Specifying Specific Objects for Migration</td>
<td>103</td>
</tr>
<tr>
<td>63</td>
<td>Example of the RECDB Command</td>
<td>105</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>1.</td>
<td>DataRefresher Features</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>DataRefresher MVS and OS/2 Package</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>DataRefresher VM Package</td>
<td>6</td>
</tr>
<tr>
<td>4.</td>
<td>Base Feature Optional Software</td>
<td>8</td>
</tr>
<tr>
<td>5.</td>
<td>DataRefresher OS/2 (PWS) Feature</td>
<td>8</td>
</tr>
<tr>
<td>6.</td>
<td>General Data Extract Feature</td>
<td>8</td>
</tr>
<tr>
<td>7.</td>
<td>Relational Data Extract Feature</td>
<td>9</td>
</tr>
<tr>
<td>8.</td>
<td>DataRefresher VM Feature</td>
<td>9</td>
</tr>
<tr>
<td>9.</td>
<td>Prerequisite and Optional Software Worksheet</td>
<td>13</td>
</tr>
<tr>
<td>10.</td>
<td>Prerequisite Workstation Hardware Worksheet</td>
<td>14</td>
</tr>
<tr>
<td>11.</td>
<td>Information Required to Install the DataRefresher Base Feature on MVS</td>
<td>15</td>
</tr>
<tr>
<td>12.</td>
<td>Information Required to Install the General Data Extract Feature on MVS</td>
<td>17</td>
</tr>
<tr>
<td>13.</td>
<td>Information Required to Install the DataRefresher Relational Data Extract Feature on MVS</td>
<td>18</td>
</tr>
<tr>
<td>14.</td>
<td>Information Required to Install the DataRefresher Uppercase Feature on MVS</td>
<td>19</td>
</tr>
<tr>
<td>15.</td>
<td>Information Required to Install the DataRefresher Kanji Feature on MVS</td>
<td>19</td>
</tr>
<tr>
<td>16.</td>
<td>Information Required to Install the DataRefresher OS/2 Feature on MVS and OS/2</td>
<td>20</td>
</tr>
<tr>
<td>17.</td>
<td>DataRefresher Distribution Libraries</td>
<td>24</td>
</tr>
<tr>
<td>18.</td>
<td>DataRefresher Target Libraries</td>
<td>25</td>
</tr>
<tr>
<td>19.</td>
<td>Installer Parameters</td>
<td>28</td>
</tr>
<tr>
<td>20.</td>
<td>Summary of Installation Jobs</td>
<td>33</td>
</tr>
<tr>
<td>21.</td>
<td>Common APPC Connection Problems</td>
<td>75</td>
</tr>
<tr>
<td>22.</td>
<td>Additional Data for IMPORT Files</td>
<td>104</td>
</tr>
</tbody>
</table>
References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of the intellectual property rights of IBM may be used instead of the IBM product, program, or service. The evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, are the responsibility of the user.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Licensing, IBM Corporation, 500 Columbus Avenue, Thornwood, NY 10594, U.S.A.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact IBM Corporation, Department J01, 555 Bailey Avenue, San Jose, CA 95161-9023. Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The following terms are trademarks of the IBM Corporation in the United States or other countries or both:

- APPN
- AT
- CICS
- DATABASE 2
- Data Dictionary
- DataHub
- DataHub for OS/2
- DataPropagator
- DataRefresher
- DB2
- DB2 for OS/2
- DXT
- IBM
- IMS
- IMS/ESA
- Language Environment
- MVS/ESA
- OS/2
- OS/2 Warp
- PS/2
- RACF
- RETAIN
- SAA
- SMP/E
- SP
- SQL/DS
- VM/ESA
- VTAM
- Windows

Other company, product, and service names, which may be denoted by a double asterisk (**), may be trademarks or service marks of others.
About This Book

This book contains tips and techniques for planning, installing, and customizing DataRefresher. This book serves as a supplement to information contained in the DataRefresher OS/2 User's Guide, DataRefresher Administration Guide and the DataRefresher programming directories.

This book covers installation of DataRefresher on both the MVS host and OS/2 workstation and includes the DataRefresher Base, General Data Extract, Relational Data Extract, OS/2 (PWS), and National Language features.

This book is intended for people responsible for planning and installing DataRefresher.

How This Book Is Organized

The chapters of this book are arranged in the order in which you complete the steps during the installation process.

- **Chapter 1, “Product Overview”**
  This chapter describes DataRefresher and the prerequisite hardware and software.
  This chapter is written for the person who orders DataRefresher and ensures the environment is ready for DataRefresher installation.

- **Chapter 2, “Overview of the DataRefresher Installation Process”**
  This chapter provides an overview of the process involved in DataRefresher installation.
  This chapter is written for anyone who will participate in the installation of DataRefresher.

- **Chapter 3, “Preparing for Installation”**
  This chapter provides worksheets that you use during the installation and customization of DataRefresher.
  This chapter is written for the person who configures MVS or OS/2 for DataRefresher.

- **Chapter 4, “How the Installer and SMP/E Work”**
  This chapter describes how to use SMP/E to install the DataRefresher Installer and also describes the Installer.
  This chapter is written for the person responsible for installing DataRefresher on MVS.
• **Chapter 5, “Installing DataRefresher on MVS”**
  
  This chapter lists the steps involved in installing DataRefresher on MVS. It includes task steps and a sample installation.
  
  This chapter is written for the person responsible for installing DataRefresher on MVS.

• **Chapter 6, “Configuring APPC for DataRefresher”**
  
  This chapter describes how to set up communications between DataRefresher on MVS and DataRefresher on OS/2 and helps ensure successful DataRefresher host-to-workstation communications.
  
  This chapter is written for the person responsible for MVS to OS/2 communications, using APPC.

• **Chapter 7, “Downloading and Installing DataRefresher OS/2 (PWS) on Your Workstation”**
  
  This chapter describes the process for downloading DataRefresher from MVS to OS/2.
  
  This chapter is written for the person responsible for downloading DataRefresher to one or many workstations.

The appendixes provide additional information on service, deinstallation, and migration, as well as manipulating job files in the Installer.

---

**Acknowledgements**

The authors of this book are:

Helen Arzu  
Percy Li  

IBM Santa Teresa Laboratory, San Jose, California USA

Thanks to the following people for the invaluable advice and guidance provided in the production of this book:

Beth Hamel  
Steve Huntington  

IBM Santa Teresa Laboratory, San Jose, California USA
Chapter 1. Product Overview

This chapter describes the DataRefresher product and requirements.

DataRefresher Features

The DataRefresher product is distributed as features that are separately orderable. The following lists show all the features offered by DataRefresher:

DataRefresher MVS:
- DataRefresher Installer and Base feature
- General Data Extract feature, including the Data Extract Manager (DEM)
- Relational Data Extract feature, including the Relational Extract Manager (REM)
- DataRefresher OS/2—also referred to as the Personal Workstation (PWS) feature
- National Language features:
  - Uppercase feature
  - Kanji feature

DataRefresher VM:
- DataRefresher Base feature
- Relational Data Extract feature
- National Language features:
  - Uppercase feature
  - Kanji feature

As summarized in Table 1, you do not need to order and install all DataRefresher features; you need to install only those features required by your environment. For example, to create and process a nonrelational extract using the GUI (graphical user interface), you need to install only DataRefresher Installer and Base feature, the General Data Extract feature, and DataRefresher OS/2 (PWS). See “Deciding Which Features to Install” on page 3 for information on selecting a configuration.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installer and Base</td>
<td>Mandatory</td>
</tr>
<tr>
<td>General Data Extract (includes DEM)</td>
<td>Optional</td>
</tr>
<tr>
<td>Relational Data Extract (includes REM)</td>
<td>Optional</td>
</tr>
<tr>
<td>DataRefresher OS/2 (also referred to as PWS)</td>
<td>Optional but recommended; requires DEM</td>
</tr>
<tr>
<td>National Language</td>
<td>Optional</td>
</tr>
</tbody>
</table>

DataRefresher Installer and Base Feature

The DataRefresher installation feature, called the Installer, is used only on MVS and provides a series of panels where you can enter parameters to install the Base feature and the other features. Based on the information you enter, the Installer automatically builds the job control language (JCL) necessary for installation.
DataRefresher Base features include the Data Reformat utility, end-user and administrative dialogs, and online commands.

**General Data Extract Feature**
The General Data Extract feature enables you to extract data from nonrelational databases and sources using the Data Extract Manager (DEM).

The DEM extracts data from a variety of databases and file types, including:
- IMS databases (MVS)
- VSAM data sets (MVS)
- Physical sequential data sets (MVS)
- Other data sources that are formatted by user-provided generic data interface (GDI) exits

**Relational Data Extract Feature**
The Relational Data Extract feature enables you to extract data from DB2 or an SQL/DS database. It contains the Relational Extract Manager (REM), which extracts data from DB2 or SQL/DS databases. The REM runs as a DB2 application in MVS or as an SQL/DS application in VM.

**DataRefresher OS/2 Feature**
You can use DataRefresher OS/2, sometimes referred to as the graphical user interface (GUI) or PWS, to perform many DataRefresher functions on a workstation using the OS/2 end-user interface. You can create data descriptions (called sources and views) and extract requests using DataRefresher OS/2 and submit them to an MVS host for processing.

DataRefresher OS/2 communicates with the host system through the logical unit (LU) 6.2 protocol, using the Advanced Program-to-Program Communications (APPC) facilities of OS/2 and MVS. Extensive online help is available for DataRefresher OS/2.

To operate DataRefresher OS/2, you must first install the General Data Extract feature.

**National Language Features**
The Uppercase feature and the Kanji feature are two National Language features (NLFs) provided with DataRefresher.

DataRefresher enables you enter, process, and display double byte character set (DBCS) data. The data entered on a DBCS terminal is stored using two bytes for each character. The underlying database management system—IMS, DB2, or SQL/DS (character or graphic data type)—provides the actual storage of the 2-byte data.

**Uppercase Feature**
With the Uppercase feature, you can use the DataRefresher dialogs on Japanese Katakana terminals. At these terminals you can type and display Katakana characters, which are Japanese phonetic symbols. You can also type and display uppercase English characters using the Uppercase feature. All fixed text in the dialog panels and messages is translated to uppercase English.
**Kanji Feature**

The Kanji feature establishes a Kanji-language environment for the DataRefresher dialog user. In this environment, the DataRefresher dialog panels and user messages are translated into Kanji, a set of commonly used Japanese characters. Kanji characters are part of a DBCS, where each character of the set is represented internally by two bytes of storage. In addition to Kanji, the Japanese DBCS contains the English alphabet, Hiragana, and Katakana characters.

---

**Deciding Which Features to Install**

The following list can help you determine whether you need to install the General Data Extract feature, DataRefresher OS/2, or the Relational Data Extract feature at your site:

- You must install the General Data Extract feature if you want to:
  - Extract data from an IMS/VS DL/I database.
  - Extract a VSAM data set.
  - Extract a physical sequential data set.
  - Use a Generic Data Interface (GDI) exit routine to extract data from other sources.

As Figure 1 shows, the General Data Extract feature must be installed on the same MVS system as the data to be extracted. In Figure 1, data is being extracted from IMS.

![Figure 1. Extracting IMS Data with the General Data Extract Feature](image)

- You must install the following features if you want to use DataRefresher OS/2 from a workstation to create data descriptions and extract requests to be sent up to the host MVS system:
  - The DataRefresher Base feature on the host MVS system
  - The General Data Extract feature on the host MVS system
  - The DataRefresher OS/2 feature on each individual workstation

Installing DataRefresher OS/2 adds another step to your installation process, but increases ease of use by providing a user-friendly interface.
Figure 2 shows the relationship between the workstation environment and the host system after installation. DataRefresher OS/2 is downloaded from the host to the workstation.

![Diagram](image)

**Figure 2. Using DataRefresher OS/2**

You can also extract data from a DB2 database by installing the General Data Extract feature and writing a GDI exit routine.

- You can install the Relational Data Extract feature if you want to extract data from a DB2 database without using GDE and a GDI exit routine. The Relational Data Extract feature must reside on the same MVS system as the DB2 database, as shown in Figure 3.

![Diagram](image)

**Figure 3. Extracting DB2 Data with the Relational Data Extract Feature**

DataRefresher OS/2 (PWS) does not support the Relational Data Extract feature and Dictionary Access Program (DAP).

**How DataRefresher Features and Components Are Packaged**

This section describes how parts of DataRefresher are packaged. Your order of DataRefresher consists of a series of tapes or cartridges. Sometimes more than one feature is contained on one tape or cartridge. For example, as shown in Table 2 on page 5, the DataRefresher Base feature and Installer feature are packaged together in volume serial (VOLSER) QY5110, even though they are two distinct parts of DataRefresher.

Table 2 on page 5 lists DataRefresher orderable features, components, and identifiers associated with each item for MVS and OS/2.
### Table 2. DataRefresher MVS and OS/2 Package

<table>
<thead>
<tr>
<th>DataRefresher Component</th>
<th>FMID</th>
<th>6250 Tape</th>
<th>3480 Cart.</th>
<th>VOLSER</th>
<th>PSP Subset</th>
<th>Retain Rel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installer feature</td>
<td>HQY5110</td>
<td>5861*</td>
<td>5862*</td>
<td>QY5110</td>
<td>HQY5110</td>
<td>110</td>
</tr>
<tr>
<td>Base feature</td>
<td>JQY5111</td>
<td>5861*</td>
<td>5862*</td>
<td>QY5110</td>
<td>JQY5111</td>
<td>111</td>
</tr>
<tr>
<td>Data Reformat utility (DRU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online command</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dialogs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Data Extract feature</td>
<td>JQY5113</td>
<td>5801</td>
<td>5802</td>
<td>QY5113</td>
<td>JQY5113</td>
<td>113</td>
</tr>
<tr>
<td>User Input Manager (UIM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Extract Manager (DEM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structures Access Program (SAP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dictionary Access Program (DAP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Migration utility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PWS feature</td>
<td>JQY511A</td>
<td>5851</td>
<td>5852</td>
<td>QY511A</td>
<td>JQY511A</td>
<td>11A</td>
</tr>
<tr>
<td>OS/2 GUI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PWS feature</td>
<td>JQY511B</td>
<td>5949</td>
<td>5950</td>
<td>QY511A</td>
<td>JQY511B</td>
<td>11B</td>
</tr>
<tr>
<td>OS/2 GUI Japanese Kanji **</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational Data Extract</td>
<td>JQY5112</td>
<td>5811</td>
<td>5812</td>
<td>QY5112</td>
<td>JQY5112</td>
<td>112</td>
</tr>
<tr>
<td>Relational Extract Manager (REM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Language feature</td>
<td>JQY5114</td>
<td>5962</td>
<td>5963</td>
<td>QY5114</td>
<td>JQY5114</td>
<td>114</td>
</tr>
<tr>
<td>Uppercase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Language feature Japanese Kanji</td>
<td>JQY5115</td>
<td>5341</td>
<td>5342</td>
<td>QY5114</td>
<td>JQY5115</td>
<td>115</td>
</tr>
</tbody>
</table>

* The Installer and Base share the same orderable feature number.
** Before you can install PWS-Japanese, you must install PWS-English.

The component identifier for all items is 569670300.
The preventive service planning (PSP) upgrade level is DVR110.

The column headings in Table 2 are:

**DataRefresher Component**
The product component.

**FMID**
A software grouping; System Modification Program Extended (SMP/E) processes these files as a unit during installation. Used in only the MVS environment.

**Order Number**
The order numbers for DataRefresher components. The distribution medium you select is either 6250 tape or 3480 cartridge. The feature number used to order DataRefresher varies according to media type.

**VOLSER**
A hardware grouping; this number appears on the tape label in the JCL, indicating the content of a tape or cartridge.

**PSP Subset**
Preventive Service Planning. This tape name is referred to by IBM service and support.

**Retain Rel**
The identifier recorded in the IBM Retain Service and Support system.
Table 3 lists DataRefresher orderable features and order numbers for VM.

<table>
<thead>
<tr>
<th>DataRefresher Component</th>
<th>Order Number VM 6250 Tape</th>
<th>Order Number VM 3480 Cartridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installer and Base feature</td>
<td>5871</td>
<td>5872</td>
</tr>
<tr>
<td>Relational Extract Manager feature</td>
<td>5821</td>
<td>5822</td>
</tr>
<tr>
<td>National Language feature—Uppercase</td>
<td>5975</td>
<td>5976</td>
</tr>
<tr>
<td>National Language feature—Japanese Kanji</td>
<td>5348</td>
<td>5349</td>
</tr>
</tbody>
</table>

Prerequisite Hardware and Software

This section describes the hardware and software required to install and run DataRefresher in the OS/2, MVS, and VM environments. Communication between the OS/2 and MVS environments is made through the APPC LU 6.2.

Hardware Requirements

Depending on the environment in which you plan to run DataRefresher, you will have different hardware requirements.

OS/2 Hardware Requirements

To run DataRefresher in an OS/2 environment, you need a workstation with sufficient memory to satisfy the combined requirements of OS/2 Version 2 Release 1, Communications Manager/2 Version 1, DB2 for OS/2, and any other customer-related applications and storage requirements. OS/2 Warp support is planned.

The minimum hardware requirements for DataRefresher in an OS/2 environment are:

- An 80486, 33 Mhz workstation running OS/2 2.1, with a mouse
- A 150 MB hard disk, with a minimum 20 MB of free disk space to install and run DataRefresher
- 16 MB of memory

To download DataRefresher OS/2 from MVS, you need an LU 2 connection. Use an APPC LU 6.2 connection to communicate with the MVS machine when DataRefresher is installed and running on the workstation.

MVS and VM Hardware Requirements

You can install and operate DataRefresher on any processor that supports the software systems specified in “Software Requirements” on page 7.

The processors must have sufficient real storage to satisfy the combined requirements of the data sources, operating systems, DataRefresher access methods, batch requirements, and other user applications.
The configuration must include enough I/O devices to support the requirements for system output, system residence, and system data sets.

Sufficient direct access storage must be available to satisfy user information storage requirements. This storage can be any direct access facility supported by the operating system.

**Software Requirements**

This section outlines the software required to install and run DataRefresher and its optional features and functions in the OS/2, MVS, and VM environments. Later releases of software are supported unless otherwise specified. OS/2 Warp support is planned.

**OS/2 System Requirements**

To install and run DataRefresher in an OS/2 environment you must first install the following programs on your workstation:

- OS/2 Version 2 Release 1
- Communications Manager/2 (CM/2) Version 1, configured for APPC communications and with an active 3270 emulator session
  
  For information about configuring CM/2 for APPC, see “Configuring APPC for DataRefresher on the Workstation” on page 52.
- IBM DB2 for OS/2 (5622-044) Version 1

**MVS Operating System and Support Program Requirements**

To install and run DataRefresher in an MVS environment you must install one of the following operating systems:

- MVS/ESA-JES2 (5695-047) Version 4 Release 2
- MVS/ESA-JES3 (5695-048) Version 4 Release 2

The following products are also required:

- MVS/Data Facility Product (5665-XA3) Version 3 Release 2
- System Modification Program Extended (SMP/E) (5668-949) Version 1 Release 7

You need the following MVS software for the APPC communications link:

- MVS/ESA V4.2
- VTAM V3.4.1
- NCP V5.3 or equivalent

**VM Operating System Requirements**

To install and run DataRefresher in a VM environment, you need:

- VM/ESA (5684-112) Version 1 Release 2
- VM/ESA (5684-112) Version 1 Release 5 370 feature
- Remote Spooling Communications Subsystem (RSCS) (5664-188) Version 3 Release 1
Optional Function Software
You can install and use optional functions and components for the DataRefresher Base feature and optional features.

**Base Feature Optional Software:** Table 4 lists the software required to run the optional functions included with the DataRefresher Base feature. Later releases are supported unless stated otherwise.

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>DataRefresher online commands</td>
<td>TSO/E (5685-025) Version 2 Release 4</td>
</tr>
<tr>
<td>MVS DataRefresher dialogs</td>
<td>Interactive System Productivity Facility/Program Development Facility (ISPF/PDF) (5665-402) Version 3 Release 5</td>
</tr>
</tbody>
</table>

**Optional Features Software:** Tables 5, 6, 7, and 8 list the software required to run the PWS, General Data Extract, Relational Data Extract, and VM features of DataRefresher. Later releases are supported unless stated otherwise.

Table 5. DataRefresher OS/2 (PWS) Feature

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating DataRefresher from OS/2</td>
<td>• ISPF (5685-054) Version 3 Release 2</td>
</tr>
</tbody>
</table>
|                           | • APPC must be installed and configured. APPC is a component of the MVS/ESA operating system in release 4.2 and later.
|                           | • GDE must be installed. You must also install the SAP within GDE. Requirements for SAP are installation of either:
|                           |   Language Environment/370 (5688-198) Version 1 Release 3, which includes the link edit library and the library of run-time services for IBM SAA AD/CYCLE PL/I Language Environment MVS & VM.
|                           |   OS PL/I Libraries Version 2 Release 3 (5668-911).                                |

Table 6 (Page 1 of 2). General Data Extract Feature

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extracting data from IMS/VS DL/I database</td>
<td>Information Management System (IMS/ESA) (5685-408)</td>
</tr>
<tr>
<td>Data security</td>
<td>Resource Access Control Facility (RACF) (5740-XXH) Version 1 Release 9.2 or equivalent</td>
</tr>
</tbody>
</table>
### Table 6. General Data Extract Feature

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing exit routines</td>
<td>One of these products:</td>
</tr>
<tr>
<td></td>
<td>• Assembler H (5668-962) Version 2 Release 1</td>
</tr>
<tr>
<td></td>
<td>• OS PL/1 Version 2 Release 3 Compiler/Run-time Libraries</td>
</tr>
<tr>
<td></td>
<td>• VS COBOL II (5668-958) Release 3.2</td>
</tr>
<tr>
<td></td>
<td>• IBM SAA AD/Cycle Language Environment/370 (5668-910 and 5668-911) Version 1 Release 3</td>
</tr>
<tr>
<td>Creating data descriptions with the DAP</td>
<td>OS/VS DB/DC Data Dictionary (5740-XXF) Version 1 Release 6</td>
</tr>
<tr>
<td>Creating data descriptions with the SAP, including the autogenerate function of DataRefresher OS/2</td>
<td>OS PL/1 Version 2 Release 3 Compiler/Run-time Libraries or IBM SAA AD/Cycle Language Environment/370 (5668-198) Version 1 Release 3</td>
</tr>
</tbody>
</table>

### Table 7. Relational Data Extract Feature

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading data into or extracting data from DB2</td>
<td>One of the following products:</td>
</tr>
<tr>
<td></td>
<td>• IBM DATABASE 2 (5665-DB2) Version 2 Release 3</td>
</tr>
<tr>
<td></td>
<td>• IBM DATABASE 2 (5685-DB2) Version 3</td>
</tr>
</tbody>
</table>

### Table 8. DataRefresher VM Feature

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using the VM dialogs</td>
<td>• ISPF-VM/SP (5684-043) Version 3 Release 2</td>
</tr>
<tr>
<td></td>
<td>• ISPF/PDF-VM/SP (5684-123) Version 3 Release 2</td>
</tr>
<tr>
<td>Loading data into or extracting data from SQL/DS with the VM Relational Data Extract feature</td>
<td>One of the following products:</td>
</tr>
<tr>
<td></td>
<td>• SQL/Data System (SQL/DS) (5688-103) Program Product Version 3 Release 3 for VM and VSE</td>
</tr>
<tr>
<td></td>
<td>• SQL/DS (5688-103) Program Product Version 3 Release 4 for VM and VSE</td>
</tr>
</tbody>
</table>
Chapter 2. Overview of the DataRefresher Installation Process

This chapter describes the skills required and activities involved in DataRefresher installation. DataRefresher installation and customization can be challenging if you are not properly prepared for the task. Consider the following information:

- Installation is done in phases. During each phase, you are required to do some configuration before you move on to the next phase. This supplement describes each phase clearly, starting with the installation tasks overview in “Installation Activities” and continuing through to Chapter 7, “Downloading and Installing DataRefresher OS/2 (PWS) on Your Workstation” on page 79.

- SMP/E is used to install DataRefresher; therefore several internal mechanisms automatically build and submit jobs. Chapter 4, “How the Installer and SMP/E Work” on page 22 helps you understand what is going on during SMP/E installation.

- DataRefresher OS/2 (PWS) uses VTAM/APPC for direct communication with MVS. VTAM/APPC is used with DataRefresher in a straightforward and standard manner, but if you are new to this powerful communication function, you face new concepts, terminology, and procedures. Chapter 6, “Configuring APPC for DataRefresher” on page 40 provides you with information you need to know about APPC to complete DataRefresher installation.

Knowledge Required to Install DataRefresher

Knowledge required to install DataRefresher include:

- Business and data management
- MVS or VM systems programming
- OS/2 administration
- CM/2 communications
- APPC communications (both for OS/2 and MVS)
- Database administration for source and target file or database management systems

Installation Activities

Figure 4 on page 11 gives an overview of the activities involved in preparing, installing, and customizing DataRefresher on MVS.
The major steps for DataRefresher installation and customization are:

1. Order the DataRefresher product with the desired features. Refer to “Deciding Which Features to Install” on page 3.
2. When the product packages arrive, check the contents. Refer to Table 2 on page 5 or Table 3 on page 6.
3. Make sure the MVS system is ready for the installation. Use the worksheets in “Installation Worksheets” on page 14.
4. Configure the APPC connection between the host MVS system and the workstation. Refer to Chapter 6, “Configuring APPC for DataRefresher” on page 40.

Although the APPC connection is not needed until later in the process, it is a good idea to complete this step early, so that any problems can be resolved before you need to use the APPC connection at the end of the DataRefresher installation process.
5. Make sure you have all the required program directories and the manuals. There are five separate program directories for features available for DataRefresher:

- **FMID HQY5110**\(^1\) Installer and Base
- **FMID JQY5112** Relational Data Extract
- **FMID JQY5113** General Data Extract
- **FMID JQY511A** PWS
- **FMID JQY5114**\(^2\) UpperCase and Kanji

Use the program directory designated for FMID HQY5110 first. The first tape (cartridge) is VOLSER=QY5110.

6. Follow the steps in the program directory for HQY5110 to install the Installer.

7. Follow the steps in the program directory for HQY5110 to install the Base feature.

8. Optional: Follow the steps in the program directory for JQY5113 to install the General Data Extract feature.

9. Optional: Follow the steps in the program directory for JQY511A to install the PWS feature.

10. Optional: Follow the steps in the program directory for JQY5112 to install the Relational Extract Manager feature.

11. Optional: Follow the steps in the program directory for JQY5114 to install the UpperCase and Kanji features. JQY5114 includes NLF features JQY5114 and JQY5115.

At this point, the functions of DataRefresher are available through the use of DataRefresher administrative dialogs and end user dialogs, DataRefresher commands, or user-initiated JCL jobs. However, using DataRefresher functions through DataRefresher OS/2 is recommended for users who prefer to use a graphical user interface.

12. Optional: Install DataRefresher OS/2. Refer to Chapter 7, “Downloading and Installing DataRefresher OS/2 (PWS) on Your Workstation” on page 79.

13. Test the communication between the host and the workstation through the APPC connection for DataRefresher.

---

\(^1\) Includes FMID JQY5111, Base.
\(^2\) Includes FMID JQY5115, Kanji.
Chapter 3. Preparing for Installation

Installing DataRefresher requires coordination between the host (MVS), the workstation (OS/2), and the DataRefresher product. This chapter illustrates links, and provides worksheets to help you ensure all links are addressed. Complete the worksheets before you begin the installation process.

Prerequisite Hardware and Software Check

Use the worksheets in Table 9 and Table 10 on page 14 to ensure your environment is ready for DataRefresher.

Table 9 contains a list of software that is required or optional before you install DataRefresher. Later releases of software are supported unless otherwise specified.

<table>
<thead>
<tr>
<th>Software Product</th>
<th>Release Level</th>
<th>Yes or No</th>
<th>Plans to Upgrade or Other Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS Software Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVS/ESA</td>
<td>4.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVS/ESA DFP</td>
<td>3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMP/E</td>
<td>1.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMP/E</td>
<td>1.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional MVS Software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMS</td>
<td>3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB2</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSSR</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COBOL II</td>
<td>3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL/1 Run or LE/370</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISPF</td>
<td>3.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RACF</td>
<td>1.9.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS/2 Software Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS/2</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comm. Mgr</td>
<td>1.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB2 for OS/2</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional OS/2 Software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DataHub for OS/2</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Communication Software Status

| VTAM             | 3.4.1         |           |                                   |
Table 9 (Page 2 of 2). Prerequisite and Optional Software Worksheet

<table>
<thead>
<tr>
<th>Software Product</th>
<th>Release Level</th>
<th>Yes or No</th>
<th>Plans to Upgrade or Other Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCP</td>
<td>5.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APPC/MVS</td>
<td>MVS 4.2</td>
<td>Feature</td>
<td></td>
</tr>
</tbody>
</table>

Table 10 contains a check list of workstation hardware required before you install DataRefresher.

Table 10. Prerequisite Workstation Hardware Worksheet

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes or No</th>
<th>Plans to Upgrade or Other Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>486 processor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 MB RAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150 MB hard disk (with 20 MB free)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWAPPER.DAT space of 10 MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection to LAN via TR or Ethernet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LU 2 connection configured to download large files</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Installation Worksheets

This section contains worksheets for DataRefresher installation on MVS and on the workstation. Worksheets provided are for:

- Base feature on MVS
- General Data Extract feature on MVS
- Relational Data Extract feature on MVS
- Uppercase feature on MVS
- Kanji feature on MVS
- OS/2 feature on MVS and the workstation

As you install DataRefresher, use the information from the worksheets to customize DataRefresher for your environment. You need the information from Table 11 on page 15 for all DataRefresher installations. You need the other worksheets only if you purchased the associated feature.
DataRefresher Base Feature Installation Worksheet for MVS

The worksheet in Table 11 provides information you need to install the DataRefresher Base feature.

Table 11 (Page 1 of 2). Information Required to Install the DataRefresher Base Feature on MVS

<table>
<thead>
<tr>
<th>Information Requested</th>
<th>Installer Field Name</th>
<th>Default Value Supplied</th>
<th>Actual Value Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-level qualifier for DataRefresher data sets</td>
<td>DXTPRE</td>
<td>DVR110</td>
<td></td>
</tr>
<tr>
<td>High-level qualifier for SMP CSI, log data sets</td>
<td>SMPPRE</td>
<td>DVRSMP</td>
<td></td>
</tr>
<tr>
<td>High-level qualifier for DataRefresher distribution data sets</td>
<td>ADXTPRE</td>
<td>DVR110</td>
<td></td>
</tr>
<tr>
<td>Distribution medium for DataRefresher</td>
<td>DVRUNITT</td>
<td>3480</td>
<td></td>
</tr>
<tr>
<td>Unit where DataRefresher data sets are to reside</td>
<td>DXTUNIT DUNIT</td>
<td>SYSDA</td>
<td></td>
</tr>
<tr>
<td>Volume on which DataRefresher data sets are to reside</td>
<td>DXTVSE DVRVOL</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>Name of the TSO Terminal monitor program</td>
<td>TSOINTF</td>
<td>IKJEFT01</td>
<td></td>
</tr>
<tr>
<td>Accounting and user information for the batch jobs the installation EXEC will submit</td>
<td>JOBCARD</td>
<td>(ACCT#), 'USERID'</td>
<td></td>
</tr>
<tr>
<td>MVS job class for jobs using 15 minutes or less of CPU time</td>
<td>CLASS15</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MVS job class for jobs with no limit on the CPU time</td>
<td>CLASSNT</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>MVS MSGCLASS parameter for the batch jobs the installation EXEC will submit</td>
<td>MSGCLAS</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>MVS MSGLEVEL parameter for the batch jobs the installation EXEC will submit</td>
<td>MSGLEVE</td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>Unit where SMP/E data sets will reside</td>
<td>SMPUNIT</td>
<td>SYSDA</td>
<td></td>
</tr>
<tr>
<td>Volume where SMP/E data sets will reside</td>
<td>SMPVSE SMPVOL</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>Unit on which DataRefresher distribution data sets will reside</td>
<td>ADXUNIT DUNIT</td>
<td>SYSDA</td>
<td></td>
</tr>
<tr>
<td>Volume on which DataRefresher distribution data sets will reside</td>
<td>ADXVSE ADVRVOL</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>High-level qualifier of ISPF program product</td>
<td>ISPPRE</td>
<td>ISP</td>
<td></td>
</tr>
<tr>
<td>High-level qualifier of PDF program product</td>
<td>ISRPRE</td>
<td>ISR</td>
<td></td>
</tr>
<tr>
<td>Volume for temporary data set required during SMP/E processing</td>
<td>TLIBVOL</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>Information Requested</td>
<td>Installer Field Name</td>
<td>Default Value Supplied</td>
<td>Actual Value Used</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Low-level qualifier of CLIST data set allocated to SYSPROC</td>
<td>CLSTLIB</td>
<td>DVRCLIBE</td>
<td></td>
</tr>
<tr>
<td>Low-level qualifier of REXX data set allocated to SYSPROC</td>
<td>REXXLIB</td>
<td>REXX.EXEC</td>
<td></td>
</tr>
<tr>
<td>Fully qualified name of output data set for installation verification of the DRU</td>
<td>DRUOUT</td>
<td>DVR110.DRUIVP.DATA</td>
<td></td>
</tr>
<tr>
<td>Migration choice—Y if migrating from DXT V2R4</td>
<td>MIG</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Unit of CLIST data set allocated to SYSPROC</td>
<td>CLTUNIT</td>
<td>SYSDA</td>
<td></td>
</tr>
<tr>
<td>Volume ID of CLIST data set allocated to SYSPROC</td>
<td>CLSTVSE</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>Unit of REXX data set allocated to SYSPROC</td>
<td>REXUNIT</td>
<td>SYSDA</td>
<td></td>
</tr>
<tr>
<td>Volume of REXX data set allocated to SYSPROC</td>
<td>REXXVSE</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>Unit for the output data set for the DRU IVP</td>
<td>DRUNIT</td>
<td>SYSDA</td>
<td></td>
</tr>
<tr>
<td>Volume for the output data set for the DRU IVP</td>
<td>DRUVSE</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>Node ID of machine where DataRefresher is being installed</td>
<td>NODEID</td>
<td>NODEID</td>
<td></td>
</tr>
<tr>
<td>Low-level qualifiers for ISPF and PDF program product libraries</td>
<td>ISPLOAD</td>
<td>ISPLOAD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISRLOAD</td>
<td>ISRLOAD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISPMSGS</td>
<td>ISPMMLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISRMSSGS</td>
<td>ISRMLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISPPALSS</td>
<td>ISPPLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISRPALSS</td>
<td>ISRPLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISPKEL</td>
<td>ISPSLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISRSKEL</td>
<td>ISRSLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISPTABL</td>
<td>ISPTLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISRTABLB</td>
<td>ISRTLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BASEFJCL</td>
<td>JCLBASE1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UPPEFJCL</td>
<td>JCLUPPE1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KANJFJCL</td>
<td>JCLKANJ1</td>
<td></td>
</tr>
</tbody>
</table>
General Data Extract Feature Installation Worksheet for MVS

The worksheet in Table 12 provides information you need to install the General Data Extract feature.

<table>
<thead>
<tr>
<th>Information Requested</th>
<th>Installer Field Name</th>
<th>Default Value Supplied</th>
<th>Actual Value Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-level qualifier of data set for sample data</td>
<td>SAMPPRE</td>
<td>DVR.SAMPDATA</td>
<td></td>
</tr>
<tr>
<td>Low-level qualifier for DataRefresher EXTLIB</td>
<td>EXTLIB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-level qualifier for DataRefresher FDTLIB sample data</td>
<td>FDTLIB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the installation require exit routines written in PL/I?</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the installation require exit routines written in COBOL?</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL/I libraries for compiling and linking</td>
<td>PLIBASE</td>
<td>SYS1.PLIBASE</td>
<td></td>
</tr>
<tr>
<td>PL/I run-time libraries</td>
<td>PLILINK</td>
<td>SYS1.PLILINK</td>
<td></td>
</tr>
<tr>
<td>High-level qualifier of IMS/VS program product libraries</td>
<td>IMSVS</td>
<td>IMSVS</td>
<td></td>
</tr>
<tr>
<td>High-level qualifier of Data Dictionary program product libraries</td>
<td>DBDCPRE</td>
<td>IMSVS.DD</td>
<td></td>
</tr>
<tr>
<td>COBOL library</td>
<td>COBLIB</td>
<td>SYS1.COBLIB</td>
<td></td>
</tr>
<tr>
<td>Block size of DBD and PSB object libraries</td>
<td>DBDPSBB</td>
<td>3120</td>
<td></td>
</tr>
<tr>
<td>LE/370 Link Edit library</td>
<td>SCEELKED</td>
<td>SYS1.SCEELKED</td>
<td></td>
</tr>
<tr>
<td>LE/370 Run-time library</td>
<td>SCEERUN</td>
<td>SYS1.SCEERUN</td>
<td></td>
</tr>
<tr>
<td>Prepare UIM and DEM to use exits</td>
<td>EXITS</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Use PL/I or LE/370 for SAP</td>
<td>SAPUSE</td>
<td>PLI</td>
<td></td>
</tr>
<tr>
<td>Load library for prepared UIM and DEM</td>
<td>PLICOB</td>
<td>DVR110.PLICOB.DVRLOAD</td>
<td></td>
</tr>
</tbody>
</table>
Relational Data Extract Feature Installation Worksheet for MVS

The worksheet in Table 13 provides information you need to install the Relational Data Extract feature.

<table>
<thead>
<tr>
<th>Information Requested</th>
<th>Installer Field Name</th>
<th>Default Value Supplied</th>
<th>Actual Value Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage group for DB2 sample data</td>
<td>STOGROP</td>
<td>DVR1STBG</td>
<td></td>
</tr>
<tr>
<td>Name of DB2 database for sample data</td>
<td>DATABASE</td>
<td>DVR1STBB</td>
<td></td>
</tr>
<tr>
<td>Name of DB2 table space for sample data</td>
<td>TBSPACE</td>
<td>DVR1STBT</td>
<td></td>
</tr>
<tr>
<td>Names for three tables for sample data</td>
<td>ORGANL</td>
<td>DVR.DB2ORG</td>
<td>DVR.DB2ORG</td>
</tr>
<tr>
<td></td>
<td>STAFTB</td>
<td>DVR.DB2STAFF</td>
<td>DVR.DB2STAFF</td>
</tr>
<tr>
<td></td>
<td>PROJTB</td>
<td>DVR.DB2PROJ</td>
<td>DVR.DB2PROJ</td>
</tr>
<tr>
<td>Creator</td>
<td>CREATOR</td>
<td>DVR</td>
<td></td>
</tr>
<tr>
<td>DB2 run-time library</td>
<td>DB2LOAD</td>
<td>DSN230.DSNLOAD</td>
<td></td>
</tr>
<tr>
<td>DB2 samples run-time library</td>
<td>DB2RLIB</td>
<td>DSN230.RUNLIB.LOAD</td>
<td></td>
</tr>
<tr>
<td>DSN subsystem</td>
<td>DB2SSID</td>
<td>DSN</td>
<td></td>
</tr>
<tr>
<td>DB2 sample dynamic SQL program</td>
<td>DSNTIAD</td>
<td>DSNTIAD</td>
<td></td>
</tr>
<tr>
<td>REM plan</td>
<td>REMPLAN</td>
<td>DVR110</td>
<td></td>
</tr>
<tr>
<td>SYSOUT class for Internal Reader</td>
<td>INTRDR</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>DB2 plan</td>
<td>DSNPLAN</td>
<td>DSNTIAD</td>
<td>DSNII/T23</td>
</tr>
<tr>
<td></td>
<td>DB2PLAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume for creating DB2 storage group</td>
<td>DB2VSE</td>
<td>VOLID</td>
<td></td>
</tr>
<tr>
<td>Catalog for creating DB2 storage group</td>
<td>VCAT</td>
<td>DSNV</td>
<td></td>
</tr>
</tbody>
</table>
Uppercase and Kanji Features Installation Worksheets for MVS

This section provides two worksheets.

**Uppercase Feature**

The worksheet in Table 14 provides information you need to install the Uppercase feature.

<table>
<thead>
<tr>
<th>Information Requested</th>
<th>Installer Field Name</th>
<th>Default Value Supplied</th>
<th>Actual Value Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of CLIST library allocated to SYSPROC</td>
<td>CLSTLBU</td>
<td>DVRCLIBU</td>
<td></td>
</tr>
</tbody>
</table>

**Kanji Feature**

The worksheet in Table 15 provides information you need to install the Kanji feature.

<table>
<thead>
<tr>
<th>Information requested</th>
<th>Installer field name</th>
<th>Default Value Supplied</th>
<th>Actual Value Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of CLIST library allocated to SYSPROC</td>
<td>CLSTLBK</td>
<td>DVRCLIBK</td>
<td></td>
</tr>
</tbody>
</table>
The worksheet in Table 16 provides information you need to install the DataRefresher OS/2 feature.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
<th>Example</th>
<th>Actual Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Host Values</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symbolic destination name</td>
<td>The name identifying the data sets on the MVS host. This name matches:</td>
<td>WINMVS3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The symbolic destination name of the host in the DataRefresher database</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The Transaction Program (TP) name for the workstation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Database host name</td>
<td>The name identifying the host in the DataRefresher database. This name</td>
<td>WINMVS3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>matches:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The symbolic destination name</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The Transaction Program (TP) name for the workstation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Level qualifier (HLQ)</td>
<td>The high-level qualifier for the group of data sets where the DataRefresher</td>
<td>DVR110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OS/2 code is stored on the MVS host system.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction program (TP)</td>
<td>The name used to describe the transaction program (TP) name used on the MVS</td>
<td>DVR110.DRIVER</td>
<td></td>
</tr>
<tr>
<td>name for MVS</td>
<td>host system.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVS user ID</td>
<td>The user ID used to get access to the MVS host system.</td>
<td>USERJO</td>
<td></td>
</tr>
<tr>
<td>MVS password</td>
<td>The password used to get access to the MVS host system.</td>
<td>mypass</td>
<td></td>
</tr>
<tr>
<td><strong>LAN Values</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link name</td>
<td>A unique name you create to identify the link between your workstation and</td>
<td>HOST0001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the MVS host system.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN destination address</td>
<td>The address of the communications controller on the token ring. This address</td>
<td>400074511092</td>
<td></td>
</tr>
<tr>
<td></td>
<td>is defined in the NCP program for the controller.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB2 server name</td>
<td>The name of the DB2 server workstation where the DataRefresher database is</td>
<td>SERVER1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>installed. This server applies if you install DataRefresher on a LAN so it</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>can be accessed by several workstations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Local Environment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network ID</td>
<td>The ID of the SNA network to which you are connected. Your network</td>
<td>GBIBMIG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>administrator can provide this information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value</td>
<td>Description</td>
<td>Example</td>
<td>Actual Value</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Node name</td>
<td>The name that identifies the node within the network to which your workstation is attached. This name is sometimes called the control point.</td>
<td></td>
<td>IG2R060E</td>
</tr>
<tr>
<td>Node alias name</td>
<td>The alias for the local node name. You can specify the actual local node name as the alias.</td>
<td></td>
<td>IG2R060E</td>
</tr>
<tr>
<td>Node ID</td>
<td>The values that identify the node within the network to which your workstation is attached. These values are the IDBLK and IDNUM parameters in the VTAM (VBUILD) definition for the workstation.</td>
<td></td>
<td>05D 3060E</td>
</tr>
<tr>
<td>Logical unit (LU) name</td>
<td>The name identifying where the logical unit, in this case your workstation, is located on the node on the network. This name is defined in the VTAM (VBUILD) definition.</td>
<td></td>
<td>IG2S1E42</td>
</tr>
<tr>
<td>Logical unit (LU) alias name</td>
<td>The alias for the logical unit. You can specify the actual logical unit name as the alias.</td>
<td></td>
<td>IG2S1E42</td>
</tr>
<tr>
<td>Workstation drive and directory</td>
<td>The drive and directory on the workstation where DataRefresher will be installed.</td>
<td></td>
<td>C:\DVRDIR</td>
</tr>
</tbody>
</table>

**Partner Environment**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
<th>Example</th>
<th>Actual Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network ID</td>
<td>The ID of the SNA network where the MVS host system is located. Your network administrator can provide this information.</td>
<td></td>
<td>GBIBMPN</td>
</tr>
<tr>
<td>Node name</td>
<td>The name identifying the node within the network to which the MVS host system is attached. This node is sometimes called the control point and is defined by the SSCPNAME parameter in the NCP program.</td>
<td></td>
<td>IGJYHJ</td>
</tr>
<tr>
<td>Node alias name</td>
<td>The alias for the node name. You can specify the actual node name as the alias.</td>
<td></td>
<td>IGJYHJ</td>
</tr>
<tr>
<td>Node ID</td>
<td>The values identifying the node within the network to which the MVS host system is attached. These values are the IDBLK and IDNUM parameters in the VTAM (VBUILD) definition.</td>
<td></td>
<td>05C 3050F</td>
</tr>
<tr>
<td>Logical unit (LU) name</td>
<td>The name identifying where the APPC/MVS logical unit is located on the node on the network. This name is defined in the VTAM (VBUILD) definition.</td>
<td></td>
<td>IGNZAPPC</td>
</tr>
<tr>
<td>Logical unit (LU) alias name</td>
<td>The alias for the logical unit name. You can specify the actual logical unit name as the alias.</td>
<td></td>
<td>IGNZAPPC</td>
</tr>
</tbody>
</table>
Chapter 4. How the Installer and SMP/E Work

This chapter describes how you use the DataRefresher Installer and SMP/E to install DataRefresher on MVS.

How the Installer Works

Use the DataRefresher Installer to install DataRefresher. The Installer is an ISPF application that helps prevent DataRefresher from inadvertently submitting the jobs in the wrong order. It submits the next job only when the current job completes successfully.

The DataRefresher Installer provides a series of panels into which you enter installation parameters. Based on the information you supply, the tool automatically builds the JCL jobs necessary to install the DataRefresher Base feature and your other DataRefresher features.

Some of the information required to install DataRefresher concerns existing resources and products on the host system. For example, the DataRefresher Installer prompts you to enter the unit and volume IDs in which you want to unload DataRefresher data sets. Your systems programmers and database administrators should be able to provide this information.

The Installer also requests information relating specifically to the new installation of DataRefresher. For example, you need to choose names for the data sets allocated for DataRefresher and make some decisions about the installation.

To ensure that you have all the information necessary to install DataRefresher and its features on MVS, complete the worksheets in “Installation Worksheets” on page 14.

For full installation procedures, refer to the DataRefresher program directory.

How System Modification Program Extended (SMP/E) Works

System Modification Program Extended (SMP/E) is the basic tool for installing software changes in MVS. The DataRefresher Installer calls SMP/E as part of the DataRefresher installation process. During installation, the SMP/E controls software changes at the element (module or macro) level by:

- Selecting the proper levels of elements to be installed from a large number of potential changes
- Calling system utility programs to accomplish the installation
- Maintaining records of the installed changes and of the function and service level of every element in the system

This precise control of element levels helps to protect system integrity.

SMP/E installs the elements in two types of libraries:

Target libraries
- Contain the executable code that makes up the running system.
**Distribution libraries**

Contain the master copies of all elements for a system. SMP/E uses the distribution libraries:
- As input to the system process that builds production libraries for a new product
- For backup if it is necessary to replace or update part of a running product

**SMP/E Commands**

After allocating space for your libraries, the DataRefresher Installer uses SMP/E to install DataRefresher. DataRefresher supplies the control statements necessary to allocate space for the libraries, and then runs the following SMP/E commands:

**RECEIVE**
Directs SMP/E to read the elements from the IBM product tape, determine which elements are applicable to your system, and store those elements in a temporary data set.

**APPLY**
Directs SMP/E to install the elements in the appropriate target libraries (TLIBs). Before SMP/E installs the elements in the distribution libraries (DLIBs), it tests the elements installed in the target libraries.

**ACCEPT**
Approves an element for SMP/E installation in the distribution library. The element is now installed as part of DataRefresher.

**The SMP/E Sample Environment**

DataRefresher provides a sample SMP/E environment that you can use to install the DataRefresher Base feature and other features for testing. The JCL in file DVREJBAL creates the target and distribution libraries for DataRefresher. The same libraries are used for the DataRefresher Base feature and other features.

The sample SMP/E environment creates a consolidated software inventory (CSI) data set called SMPCSI. The SMPCSI data set is a keyed VSAM data set that is divided logically into *zones* that describe the various subsystems and products in the system.

**SMP/E Zones**

There are three zones into which the SMPCSI data set is divided:

**Global zone**
- Describes associated target and distribution zones
- Describes system modifications (SYSMODs) waiting to be installed
- Describes system utilities that SMP/E uses to install SYSMODs

**Target zone (DVRT110)**
- Describes the structure and content of a set of target libraries
- Names the related distribution zone

**Distribution zone (DVRD110)**
- Describes the structure and content of a set of distribution libraries
- Names the related target zone
Figure 5 shows the relationships between the SMP/E zones and libraries.

---

**Figure 5. SMP/E Zones and Libraries**

If DB2 is installed, you can choose to install DataRefresher in its SMPCSI data set and zones, or create DataRefresher zones within its SMPCSI data set.

For information on the DASD space required for the SMP/E data sets, see the DataRefresher program directory.

**Sharing SMP/E Data Sets between DataRefresher and Data Extract**

The SMP/E jobs provided with DataRefresher allow you to support Data Extract (DXT) along with DataRefresher. DataRefresher Version 1 can be installed in the same SMP/E environment as any release of DXT, without deleting or superseding DXT. However, a single SMP/E zone cannot be used by both DataRefresher and DXT. A single SMP/E zone can record only one version of DXT or DataRefresher.

After DataRefresher Version 1 is successfully installed and in use, you can delete DXT. An example of an SMP/E job to delete DXT Version 2 Releases 4 and 5 is available in the DVR110.DVRSAMPE library.

If you have DXT installed, first make a backup copy of your SMP/E data sets if you want to save them. After installation, you can delete the old SMP/E data sets.

**Distribution Libraries for DataRefresher**

The distribution libraries for the DataRefresher Base feature and other features are shown in Table 17.

<table>
<thead>
<tr>
<th>Distribution Libraries</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVR110.ADVRMACE</td>
<td>Interface parts for exit routines</td>
</tr>
<tr>
<td>DVR110.ADVRM0DS</td>
<td>An individual object module for every DataRefresher module</td>
</tr>
<tr>
<td>DVR110.ADVRDBRM</td>
<td>The database request module (DBRM) used by DataRefresher</td>
</tr>
<tr>
<td>DVR110.ADVRPMSE</td>
<td>ISPF panels, messages, and skeletons for running the DataRefresher dialogs</td>
</tr>
<tr>
<td>DVR110.ADVRPWSE</td>
<td>Workstation files for downloading from the host</td>
</tr>
<tr>
<td>DVR110.ADVRFNST</td>
<td>Installer feature files</td>
</tr>
<tr>
<td>DVR110.ADVRTABL</td>
<td>Installer feature table files</td>
</tr>
</tbody>
</table>

See the DataRefresher program directory for DASD space requirements for these distribution libraries.
Target Libraries for DataRefresher

The target libraries for the DataRefresher Base feature and other features are shown in Table 18.

Table 18. DataRefresher Target Libraries

<table>
<thead>
<tr>
<th>Target Libraries</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVR110.DVRSAMPE</td>
<td>Data files, control files, and load JCL for sample data, online commands, and exits, as well as verification procedures and cataloged procedures used to verify, allocate, and run the DataRefresher product</td>
</tr>
<tr>
<td>DVR110.DVRLOAD</td>
<td>The load modules necessary to run DataRefresher Base feature and other features</td>
</tr>
<tr>
<td>DVR110.DVRDBRM</td>
<td>The database request module (DBRM) used by DataRefresher</td>
</tr>
<tr>
<td>DVR110.DVRPLIBE</td>
<td>ISPF panels for running the DataRefresher dialogs</td>
</tr>
<tr>
<td>DVR110.DVRMLIBE</td>
<td>ISPF messages for running the DataRefresher dialogs</td>
</tr>
<tr>
<td>DVR110.DVRSLIBE</td>
<td>ISPF skeletons for running the DataRefresher dialogs</td>
</tr>
<tr>
<td>DVR110.DVRJEDIE</td>
<td>Model extract requests, model data description requests, and model run-time JCL</td>
</tr>
<tr>
<td>DVR110.DVRTADME</td>
<td>The application command table, Master Index Table (MIT) information, and the sample data</td>
</tr>
<tr>
<td>DVR110.DVRTLIBE</td>
<td>Shared objects</td>
</tr>
<tr>
<td>DVR110.DVRINTER</td>
<td>REXX execs and sample exit routines</td>
</tr>
<tr>
<td>DVR110.DVRINTAB</td>
<td>Install feature tables</td>
</tr>
<tr>
<td>DVR110.DVRINCFB</td>
<td>CLIST DS to be copied to DVRINCLS</td>
</tr>
<tr>
<td>DVR110.DVRINSKL</td>
<td>Skeleton JCL updated by Installer and written to FTO</td>
</tr>
<tr>
<td>DVR110.DVRINPAN</td>
<td>Panels</td>
</tr>
<tr>
<td>DVR110.DVRINMSG</td>
<td>Messages</td>
</tr>
<tr>
<td>DVR110.DVRINFTO</td>
<td>Customized JCL updated by Installer and written to FTO</td>
</tr>
</tbody>
</table>

See the DataRefresher program directory for DASD space requirements for these target libraries.
Chapter 5. Installing DataRefresher on MVS

This chapter provides an example of a DataRefresher installation. The example is subdivided into phases and provides detailed steps for each phase of the installation process.

The order in which you install product software is important. Install the Installer first. Next install the Base feature and customize it. Also ensure that you:

- Install the General Data Extract (GDE) feature (JQY5113) before you attempt to install the OS/2 (PWS) feature (JQY511A and JQY511B).
- Complete SMP/E (RECEIVE, APPLY and ACCEPT) for each feature you install, before customizing the feature.
- Customize each feature before moving on to the next feature.

This chapter:

- Describes what you must do before installing DataRefresher.
- Describes how to install the DataRefresher Installer.
- Describes how to install each DataRefresher feature.
- Summarizes the jobs you run to install DataRefresher.
- Provides additional installation tips and information.
- Describes the Installer control table and errors that might occur when you use the Installer.

Preparing for Installation

Before installing DataRefresher, complete the following steps.

1. Determine the DataRefresher features required for your environment.

2. Order the product, DataRefresher Version 1 (IBM Program Number 5696-703) with the features you require. For example:

<table>
<thead>
<tr>
<th>Feature Number</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>5862</td>
<td>Installer and Base Feature</td>
</tr>
<tr>
<td>5802</td>
<td>General Data Extract</td>
</tr>
<tr>
<td>5852</td>
<td>PWS</td>
</tr>
<tr>
<td>5810</td>
<td>PWS - Japanese</td>
</tr>
<tr>
<td>5812</td>
<td>Relational Extract Manager</td>
</tr>
<tr>
<td>5963</td>
<td>Uppercase NLF</td>
</tr>
<tr>
<td>5342</td>
<td>Kanji NLF</td>
</tr>
</tbody>
</table>

3. Obtain DataRefresher documentation. Make sure your collection of documentation includes:

- *DataRefresher Administration Guide*, (SH19-6995-00)
- *DataRefresher OS/2 User's Guide*, (SH19-6997-00)
- Program directories:
  - Installer and Base feature (HQY5110 and JQY5111)
One copy of the DataRefresher library publications and DataRefresher program directories are shipped to you, along with the product cartridges (tapes).

The order in which you install and customize product features is important. Figure 6 shows the order in which features must be installed and customized. Note that you must install GDE, before you can install the PWS features.

Figure 6. Order in Which Features Should Be Installed

It is recommended that you install and customize each feature before proceeding to the next feature.

Installing the Installer

Install the Installer (HQY5110) first. After the Installer is installed, you can use it to install the DataRefresher Base feature (JQY5111) and other DataRefresher features.

Refer to the program directory for Installer and Base as you complete the following steps. To install the Installer:

1. Create a job to retrieve installation procedures and retrieve all sample JCL required to install the Installer.
   a. Enter the sample job, DVREJBIA, as described in the program directory.
   b. When the job completes, verify that six members were copied into the PDS named DVR110.INSTALL.

   The six members are:
   
   **DVREJBIA** Allocates space for the distribution and target libraries, and initializes the SMP/E environment if required.
DVREJBID Allocates the data sets and libraries and executes SMP/E. This member is used in DVREJBIR, DVREJBIP and DVREJBIC jobs.

DVREJBIR Performs SMP/E RECEIVE for HQY5110.

DVREJBIP Performs SMP/E APPLY for HQY5110.

DVREJBIC Performs SMP/E ACCEPT for HQY5110.

DVREJBIV Sets up and copies all members from DVRINCFB to DVRINCLS.

2. If necessary, modify some of the parameters used in the six members for your local installation environment. Table 19 shows parameter values that you might change.

Make changes globally, not line by line, to ensure the change is applied consistently to all applicable parameters.

Table 19. Installer Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Default Values</th>
<th>Value Change</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVRPRE</td>
<td>DVR110</td>
<td>SHL110</td>
<td>Data set qualifier</td>
</tr>
<tr>
<td>ADVRPRE</td>
<td>DVR110</td>
<td>SHL110</td>
<td>Data set qualifier</td>
</tr>
<tr>
<td>SMPPRE</td>
<td>DVRSMP</td>
<td>SHLSMP</td>
<td>SMP</td>
</tr>
<tr>
<td>DVRVOL</td>
<td>DVRV01</td>
<td>USER11</td>
<td>DASD</td>
</tr>
<tr>
<td>ADVRVOL</td>
<td>DVRV01</td>
<td>USER11</td>
<td>DASD</td>
</tr>
<tr>
<td>SMPVOL</td>
<td>DVRV01</td>
<td>USER11</td>
<td>DASD</td>
</tr>
</tbody>
</table>

3. Modify DVREJBIA to allocate the target and distribution libraries in SMP/E. In DVREJBIA, the DD statement for ZPOOL specifies DSN=SYS1.MACLIB(GIMZPOOL). Make sure the DD statement applies to your environment or change the DD statement to match your local environment.

4. Run DVREJBIA.

5. Modify and run DVREJBIR to complete SMP/E RECEIVE for the Installer.

6. Modify and run DVREJBIP to complete SMP/E APPLY for the Installer.

7. Modify and run DVREJBIC to complete SMP/E ACCEPT for the Installer.

8. Modify and run DVREJBIV to copy the CLISTs from DVRINCFB to DVRINCLS. CLISTs are allocated to SYSPROC, therefore you must determine if DVRINCLS should be in fixed block (FB) or variable block (VB) format.

Most installations use FB. However, the sample in the DVREJBIV job uses VB. If you use FB, change the values in the SPACE and DCB fields to FB format.

9. Run the CLIST DVR110.DVRINCLS(DVRXXITL) to invoke the Installer. DVR110 is the high-level qualifier used in the sample.
Using the Installer to Install the Base Feature

Refer to the program directory for Installer and Base as you complete the following task steps.

To install the Base feature (JQY5111):

1. Invoke the Installer. Panel DVREPICH appears after the copyright panel is displayed.
2. Select Option 1 to execute SMP/E job steps for the Base feature and press Enter. Panel DVREPI01 (Install Selection Menu Panel) appears.
3. Select SMP/E (receive apply accept) and press Enter. Panel DVREPI02 (SMP/E Selection Menu) appears.
5. Update the variables for the required fields and press Enter. Panel DVREPIV2 (SMP/E Summary Status Panel) appears.
6. Select, tailor, and submit jobs for File allocation for DataRefresher product and SMP/E receive apply accept for Base.
   a. Use the cursor to select a job.
   b. Press F5 to edit a selected job.
   c. Repeat steps 6a through 6b until all jobs listed under “Selected for Execution” are edited.
   d. Press F7 to submit jobs.
   e. After submitted jobs complete successfully, press F3 to exit and return to DVREPICH.
7. Select Option 1, Install and Customize and press Enter. Panel DVREPI01 appears.
9. Update the variables for the required fields. The low-level qualifier for the CLIST library is DVRCLIBE. Press Enter. Panel DVREPIV3 (BASE Summary Status) appears.
10. Check the following items before proceeding:
    a. Review the CLIST members DVRELLGN, DVRELNRL, and DVRELDXA in DVR110.DVRSAMPE, especially the parameters in the first two lines for each member (for example, DXTPRE and DXTVOL). You can make changes to the members of DVR110.DVRSAMPE now or make changes to the members of DVR110.DVRCLIBE after DVR110.DVRCLIBE is created.
    b. Review the record format for the CLISTS.
       - If your installation uses variable block (VB) format, use the job file DVREJBVC, provided by the Installer.
       - If your installation uses fixed block (FB) format, modify the job file DVREJBVC before submitting it.

Change the SPACE and DCB parameters and change SYSIN DD DSN = DVR110.DVRSAMPE(DVRECBVB),DISP=SHR to SYSIN DD DUMMY.
Note:

- If you modify the DVREJBVC, you must use the SUBMIT command within the edit session to submit the job. (If you do not use the SUBMIT command, the Installer submits the default job, not the modified job.)
- If you do not modify the job, you can either use the SUBMIT command within the edit session or proceed to step 11 without submitting DVREJBVC immediately. If you proceed to step 11 without submitting DVREJBVC, DVREJBVC is submitted with other jobs when you complete step 13.
- If you press F7 now, the DVREJBVC job and the jobs listed in step 12 run.

11. Select the default job for Copy CLIST/REXX progs to SYSPROC libraries.
12. Select and, if required, tailor the other three jobs listed in Panel DVREPIS3:
   - Enroll the Installer as a DataRefresher user
   - Create sample DVRTADME with dummy environment
   - Verify the Data Reformat Utility
13. Use F7 to submit the jobs from Panel DVREPIS3.
14. When the jobs complete successfully, press F3 to return to Panel DVREPICH (Install Definition panel).
15. Press F3 again to exit the Installer.
16. Check CLISTs in DVR110.DVRCLIBE again. Make sure changes were made.
17. Optional: Make the DataRefresher dialogs an ISPF application. Refer to the DataRefresher Administration Guide, Chapter 17.
18. Optional: Verify DataRefresher dialogs are functioning correctly.

Using the Installer to Install the GDE Feature (JQY5113)

Refer to the program directory for GDE as you complete the following task steps.

To install the GDE feature (JQY5113):
1. Invoke the Installer.
2. Select Option 1 from the DVREPI01 panel and press Enter. The DVREPI01 panel appears.
3. Select SMP/E. The DVREPI02 panel appears.
4. Select SMP/E General Data Extract Feature.
5. Tailor and submit the SMP/E jobs.
6. Wait until the SMP/E jobs are complete.
7. Press F3 to exit the Installer.
8. Optional: Change JES2 to increase the number of internal readers.
9. Optional: Change RACF to allow for FDTLIB and UIM authorization.
10. Invoke the Installer again.
11. Select **Option 1** installation type in panel DVREPICH and press Enter. Panel DVREPI01 appears.

12. Select the **General Data Extract Feature** and press Enter. Panel DVREPI05 appears.

13. Select the GDE components that you want to install:
   - General Extract Feature (including DEM)
   - SAP
   - IMS
   - DAP (not supported by PWS)

   You can select and process components one at a time, or select and process several components at one time.

14. Press Enter. The DVREPIV5 panel appears.

15. Tailor the variables related to the GDE feature and press Enter. The DVREPIS5 panel appears.

16. Review all jobs listed under "Selected for Execution."
   a. Edit jobs to meet your environment requirements.
   b. Edit the DVREJPCL file. It contains JCL errors. Two SYSLIN DD statements are missing UNIT parameters.
      1) Add the unit parameters.
      2) Use the SUBMIT command within the edit session to submit the corrected DVREJPCL file.
   c. Correct the Installer control table if you see RC=0684 from DVRU0000 after running job DVREJSI2 and if the Installer flags it as an error.

      In the Installer control table, change status from 3 to 1. Refer to “Using the Installer Control Table and Determining Errors” on page 37 for information on the Installer control table.

17. Run all jobs listed under “Selected for Execution.”

18. Press F3 to exit the Installer when all jobs complete successfully.

19. Optional: Exercise the SAP Dialog flow in an ISPF session to create DXTPSB if you installed the SAP in step 13.

20. Optional: Recompile exit routines if you migrated from DXT.

---

**Using the Installer to Install the PWS Feature on MVS**

Refer to the program directory for PWS as you complete the following steps.

If you intend to install the PWS Japanese feature (JQY511B), you must install PWS English (JQY511A) first.

To install the PWS feature:

1. Invoke the Installer.

2. Select **Option 1** from the DVREPICH panel and press Enter. The DVREPI01 panel appears.

3. Select **SMP/E**.
4. Tailor and submit the SMP/E jobs.
5. Wait until the SMP/E jobs complete. Return to the DVREPI01 panel.
6. Select DataRefresher OS/2 (PWS) and press Enter. Panel DVREPIV6 (PWS Variable Panel) appears.
7. Complete the APPC/MVS Load Library field and press Enter. Panel DVREPIS8 appears.
8. Select, tailor, and submit the jobs listed in DVREPIS8.
9. Exit DVREPIS8 when the jobs complete successfully and return to the DVREPI01 panel.
10. Optional: Install JQY511B, if desired. Repeat the same sequence of steps as listed for JQY511A.

Using the Installer to Install the RDE (REM) Feature
Refer to the program directory for REM as you complete the following steps.

To install the REM feature (JQY5112):
1. Invoke the Installer.
2. Select Option 1 from the DVREPICH panel and press Enter. The DVREPI01 panel appears.
3. Select SMP/E. The DVREPI02 panel appears.
4. Select SMP/E Relational Data Extract Feature.
5. Tailor and submit the SMP/E jobs.
6. Wait until the SMP/E jobs are complete.
7. Select Relational Data Extract Feature (REM) from the DVREPI01 panel. The DVREPIV4 panel appears.
8. Tailor the variables in the DVREPIV4 panel.
9. Submit the REM jobs and wait until they complete.

Using the Installer to Install the Uppercase and Kanji Features
Refer to the program directory for Uppercase and Kanji features as you complete the following steps.

To install the National Language features (JQY5114, JQY5115):
1. Invoke the Installer.
2. Select Option 1 from the DVREPICH panel and press Enter. The DVREPI01 panel appears.
3. Select SMP/E. The DVREPI02 panel appears.
4. Select SMP/E Uppercase Feature and SMP/E Japanese National Language Feature from the DVREPI02 panel.
5. Tailor and submit the SMP/E jobs.
6. Wait until the SMP/E jobs are complete.
7. Select **Uppercase Feature** and **Japanese National Language Feature** from the DVREPI01 panel.

8. Tailor the variables related to the National Language features. If your installation requires FB for SYSPROC, modify the jobs presented by the Installer.

9. Submit the jobs directly from the Edit panel (F5) after you finish modifications. If you exit the edit session without running the SUBMIT command and try to use F7 to submit the job, the Installer ignores any changes you made to the job and submits the default jobs.

10. Exit when the job completes successfully.

**Next Steps (If You Want DataRefresher OS/2)**

When you finish installing DataRefresher features for the Base, GDE, and PWS, you can complete the tasks needed to install DataRefresher on a workstation. If you want to use DataRefresher on a workstation, you must:

1. Configure APPC for DataRefresher. Refer to Chapter 6, “Configuring APPC for DataRefresher” on page 40.

2. Download DataRefresher OS/2 (PWS) from MVS to the workstation and install it in OS/2. Refer to Chapter 7, “Downloading and Installing DataRefresher OS/2 (PWS) on Your Workstation” on page 79.

   If you do not want to use DataRefresher on a workstation, you do not configure APPC or download DataRefresher OS/2.

**Summary of DataRefresher Jobs**

Table 20 summarizes the jobs you run when installing DataRefresher.

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQY5110 Installer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVREJBIA</td>
<td>Obtain installation files from tape or cartridge to install the Installer</td>
<td>Type in and create sample job. Run job to get six members into DVR110.INSTALL.</td>
</tr>
<tr>
<td>DVREJBIA</td>
<td>DLIB/TLIB space allocation SMP/E CSI setup</td>
<td>Check PROC parameters and ZPOOL. Check SMP/E global zone.</td>
</tr>
<tr>
<td>DVREJBID</td>
<td>SMP/E a PROC</td>
<td>Used in DVREJBxx (xx is IR,IP, or IC).</td>
</tr>
<tr>
<td>DVREJBIR</td>
<td>SMP/E RECEIVE</td>
<td>VOL=SER=QY5110</td>
</tr>
<tr>
<td>DVREJBIP</td>
<td>SMP/E APPLY</td>
<td>SELECT(HQY5110)</td>
</tr>
<tr>
<td>DVREJBIC</td>
<td>SMP/E ACCEPT</td>
<td>SELECT(HQY5110)</td>
</tr>
<tr>
<td>DVREJBIV</td>
<td>Copy 11 members from DVRINCFB to DVRINCLS</td>
<td>Check variable block versus fixed block. DVRXXITL starts the Installer.</td>
</tr>
</tbody>
</table>

<p>| JQY5111 Base | | |
| DVREJBAL | File allocation | Check FMIDs and SMP/E. |
| DVREJBRC | SMP/E RECEIVE | VOL=SER=QY5110 SELECT(JQY5111) |
| DVREJBAP | SMP/E APPLY | RC=4 GIM43401W is OK. DVRXSCxx is NOT SEL (xx is DA,LD,LX,PA, or PF) |
| DVREJBAC | SMP/E ACCEPT | RC=0 |</p>
<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVREJBVC</td>
<td>Copy CLIST/REXX</td>
<td>Check variable block versus fixed block. Use SUBMIT instead of F7 if you modify the default job. CLIST library is DVRCLIBE.</td>
</tr>
<tr>
<td>DVREJNRL</td>
<td>Enroll the user</td>
<td>EXEC hlq.DVRINCLS(DVRELNRO)</td>
</tr>
<tr>
<td>DVREJSB1</td>
<td>Create DVRTADME sample data</td>
<td>Needed for Dialogs IVP.</td>
</tr>
<tr>
<td>DVREJBV1</td>
<td>Verify Data Reformat utility</td>
<td>DVR0025 in DXTPRINT</td>
</tr>
</tbody>
</table>

**JOY5113 GDE**

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVREJGRC</td>
<td>SMP/E RECEIVE</td>
<td>VOL=SER=QY5113, SELECT(JOY5113)</td>
</tr>
<tr>
<td>DVREJGAP</td>
<td>SMP/E APPLY</td>
<td>RC=4 GIM43401W (DVRXOCEE) is OK.</td>
</tr>
<tr>
<td>DVREJGAC</td>
<td>SMP/E ACCEPT</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJSP1</td>
<td>DEM file allocation</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJSP2</td>
<td>DEM MIT update</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJDV1</td>
<td>DEM VSAM Extract IVP</td>
<td>IVP1</td>
</tr>
<tr>
<td>DVREJPCL</td>
<td>DEM link edit for PLI/COBOL</td>
<td>UNIT missing for SYSLIN—JCL errors in STEP01 and STEP03. In STEP01 and STEP03 RC=4 is OK. Use SUBMIT if needed.</td>
</tr>
<tr>
<td>DVREJDK1</td>
<td>SAP link edit DFR05000</td>
<td>SAP dialogs</td>
</tr>
<tr>
<td>DVREJDJ1</td>
<td>SAP link edit DFR01000</td>
<td>SAP command generator</td>
</tr>
<tr>
<td>DVREJKDA</td>
<td>SAP IVP for IMS</td>
<td>Check JCL. TEMPTAB should be DISP=(NEW,CATLG). Use all uppercase when modifying JCL.</td>
</tr>
<tr>
<td>DVREKJFA</td>
<td>SAP IVP for VSAM and PSDS</td>
<td>Check JCL. Use all uppercase when modifying JCL.</td>
</tr>
<tr>
<td>DVREJSI1</td>
<td>IMS load HSAM and HISAM sample</td>
<td>Check DBDGEN and PSBGEN procedures.</td>
</tr>
<tr>
<td>DVREJSI2</td>
<td>IMS update MIT</td>
<td>Correct Installer control file DFRXCCCL so that RC=0684 of the Step 2 DFRU0107 message is not logged as a JCL error.</td>
</tr>
<tr>
<td>DVREJDV2</td>
<td>IMS extract IVP</td>
<td>IVP2</td>
</tr>
<tr>
<td>DVREJDL1</td>
<td>DAP Link Edit DFRY05000</td>
<td>Check PGMLIB.</td>
</tr>
<tr>
<td>DVREJDC1</td>
<td>DAP IVP</td>
<td>Use DBDIMSBV if overlay. Use DBDIMSB if non-overlay.</td>
</tr>
</tbody>
</table>

**JOY511A OS/2 (PWS)**

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVREJPAL</td>
<td>File allocation DR OS/2</td>
<td>ADVRPWSE DFRPWSE; SMP/E</td>
</tr>
<tr>
<td>DVREJPRC</td>
<td>SMP/E RECEIVE</td>
<td>RC=0; SELECT(JOY511A)</td>
</tr>
<tr>
<td>DVREJPAP</td>
<td>SMP/E APPLY PWS</td>
<td>RC=4; NOT SEL is OK.</td>
</tr>
<tr>
<td>DVREJPAC</td>
<td>SMP/E ACCEPT</td>
<td>RC=0; NOT SEL is OK.</td>
</tr>
<tr>
<td>DVREJPL1</td>
<td>Link Edit DFRP0000</td>
<td>With APPC</td>
</tr>
<tr>
<td>DVREJPL2</td>
<td>Link Edit DFRS0000</td>
<td>With APPC</td>
</tr>
<tr>
<td>DVREJPCY</td>
<td>Copy members in DFRPWSE</td>
<td>Five members copied.</td>
</tr>
</tbody>
</table>

**JOY511B PWS-J**

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVRKJPAL</td>
<td>File allocation OS/2 Kanji</td>
<td>ADVRPWSK DFRPWSK; SMP/E</td>
</tr>
<tr>
<td>DVREJPKR</td>
<td>SMP/E RECEIVE</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJPKA</td>
<td>SMP/E APPLY</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJPKC</td>
<td>SMP/E ACCEPT</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVRKJPCY</td>
<td>Copy members in DFRPWSK</td>
<td>Copy DVRKBEIL to INSTALLK.</td>
</tr>
</tbody>
</table>

**JOY5112 REM**

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVREJRC</td>
<td>SMP/E RECEIVE</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJRAP</td>
<td>SMP/E APPLY</td>
<td>RC=0; NOT SEL is OK.</td>
</tr>
</tbody>
</table>
### Table 20 (Page 3 of 3). Summary of Installation Jobs

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVREJRAC</td>
<td>SMP/E ACCEPT</td>
<td>RC=0; NOT SEL is OK</td>
</tr>
<tr>
<td>DVREJRPR</td>
<td>Bind REM to DB2</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJSD1</td>
<td>DB2 sample table</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJSD2</td>
<td>DB2 data &amp; MIT update</td>
<td>RC=0</td>
</tr>
<tr>
<td>JQY5114 UCF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVRUJBAL</td>
<td>File allocation</td>
<td>Check UNIT= for DVRSAMP.U.</td>
</tr>
<tr>
<td>DVREJURC</td>
<td>SMP/E RECEIVE</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVREJUAP</td>
<td>SMP/E APPLY</td>
<td>RC=4</td>
</tr>
<tr>
<td>DVREJUAC</td>
<td>SMP/E ACCEPT</td>
<td>RC=0</td>
</tr>
<tr>
<td>DVRUJBVC</td>
<td>Copy CLISTs</td>
<td>Check variable block versus fixed block.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CLIST library is DVRCLIBU.</td>
</tr>
<tr>
<td>DVRUJNRL</td>
<td>Enroll UCF user</td>
<td>DVRINCLS(DVRULNRO)</td>
</tr>
</tbody>
</table>

| JQY5115 NLF |                  |                                            |
| DVRKJBAL   | File allocation  | DLIB/TLIB Kanji; SMP/E                    |
| DVREJKRC   | SMP/E RECEIVE    | RC=0                                       |
| DVREJKAP   | SMP/E APPLY      | RC=4                                       |
| DVREJKAC   | SMP/E ACCEPT     | RC=0                                       |
| DVRKJBVC   | Copy CLISTs      | Check variable block versus fixed block.  |
|            |                  | CLIST library is DVRCLIBK.                |
|            |                  | Use SUBMIT if needed.                     |
| DVRKJNRL   | Enroll Kanji user | DVRINCLS(DVRULNRO)               |

### Installation Tips

This section lists factors you should take into consideration during the installation process.

**Data Set Naming Convention for Installer Generated Jobs**

The data set naming convention used in your organization might require your data set names to be different than the names used in the JCL jobs of the Installer.

**Levels of High-Level Qualifiers**

High-level qualifiers for data sets can include more than one level. For example, an installation might use a high-level qualifier of ISP.V3R5M0, which consists of two levels, instead of ISP, which consists of one level.

**Record Format**

The record format (FB or VB) affects the SYSPROC concatenation. Most installations use FB. Examples for copying to the SYSPROC concatenation, shown in the program directory and in the Installer, are for FB to VB. When you modify those jobs to copy from FB to FB, make sure you modify the parameters associated with the data sets in the DD statements.
If the existing SYSPROC concatenation uses FB and you use the jobs provided by the Installer without modifying the record format, the Installer copies CLISTs and execs but you will have mixed record formats (RECFM=FB and RECFM=VB) and will receive an error message when you try to use SYSPROC.

**Installer Editor Status Line**

When you use F5 to edit a job file in the Installer, the name of the selected file is shown on the status line.

**User ID as Job Name**

The Installer uses the user ID as a job name. If you want to correlate the job printouts with the tasks performed, modify the names on the job cards.

**Character Length of Job Names**

Job names in the job cards of sample job files are seven characters or less in length. The Installer adds one additional character to each job name. You can change the job names in the job cards, using up to eight characters, with no negative repercussions. If the job names you create are less than eight characters, the Installer adds one character to the end of your job names.

**Initiators Needed to Submit a Job**

You must have at least two initiators available for the job class under which submitted job files run.

**APF Authorization Required**

If you do not obtain the APF authorization for your designated load libraries (the default load libraries are DVR110.DVRLOAD and DVR110.DVRSLOAD), an authorization failure message appears during some customization steps.

**Changing Installer Job Parameters**

If you need to change the values of parameters after setting them initially during installation, re-enter the Installer and make changes using the Installer panels. If you cannot make the change you want using the panels, edit DVR110.DVRINTAB(DVRXCVAR). When you finish modifying the file, re-enter the Installer and verify that the new values replaced the old ones.

**Submitting More Than One Job**

All jobs marked “Selected for Execution” in the Installer panel are executed in logical sequence when you press F7 to submit jobs. Make sure all jobs are properly edited, prepared, and ready for execution before pressing F7. After you submit the jobs, the execution runs nonstop until all jobs are complete or a problem occurs.

**Using SUBMIT versus F7 to Submit a Job**

There is a difference between using F7 to submit a job and using the SUBMIT command in an edit session to submit a job. When you use F7 to submit a job, you
trigger background activity performed by the Installer. When you use SUBMIT in an edit session, the activity is not performed.

For example, when you install and customize the REM, you use F7 to execute the DVREJPR job and bind the REM to DB2. When you press F7, eight members (DVRECLSL, DVRECRNC, DVRECRNG, DVRECRRM, DVRESC0, DVRESC1, DVRESC2, DVRESC3) of the PDS DVRINFTO that are needed by the DVREJPR job and other jobs are also generated. If you do not press F7, the members are not generated, and the DVREJPR job fails.

**Error in Job Sample DVR110.DVRSLIBE(DVRXKJFA)**

The default job provided in the product library DVR110.DVRSLIBE(DVRXKJFA) has a JCL error. **COND**= is missing from the EXEC statement for STEP01.

**Unlisted Error Messages**

Refer to DVR110.DVRMLIBE for error messages that are not listed in Messages and Codes. You can contact IBM service for more information when you encounter undocumented error messages.

**Editing DVR110.DVrintab Members**

DVR110.DVrintab contains members critical to the operation of the Installer. For example, member DVRXCTTL keeps track of the running status of the Installer, and member DVRXCVR contains the values of parameters and variables used in the operation of the Installer. You can edit the contents of the members, but make sure you modify only the status code in position 41 (just before the text). Refer to “Installer Control Table.”

---

**Using the Installer Control Table and Determining Errors**

This section describes the control table that records installation status and discusses errors that might occur when you use the Installer.

**Installer Control Table**

The control table is DVRXCTTL in the data set hlq.DVrintab, where hlq is the high-level data set qualifier. This control table is divided into the following control sections:

- SMP
- Base
- Relational Data Extract (including REM)
- General Data Extract (including DEM)
- Uppercase
- Kanji
- DataRefresher OS/2
- DataRefresher OS/2 Kanji

Each section contains a line for each job to be submitted. This line is updated with the text that appears on the summary status panel and a status code in position 41 (just before the text). The codes of interest are:

- 0 Not installed or not selected
- 1 Installed or completed
Partly completed, currently running, or currently executing

Error while running or error running JCL

Each set of jobs has dependencies on other sets. In addition, the individual jobs within each set are dependent on the previous job completing successfully. To track these dependencies, each set of jobs has a status line that contains the overall status for the set of jobs. If one job fails with a JCL error (status code 3), the overall status for the set is 3.

Sometimes the status of an individual job has a code of 2 and the overall status has a code of 2, but the job stopped running. If this occurs, run the CLIST member DVRXXSET in the hlq.DVRINCLS data set. This action sets all the steps with a status code of 2 to 3.

Unexpected Errors

Installer-generated jobs contain steps that are needed for tracking the run status of Installer jobs. The JCL step names are: STORE1, STORE2, STORE3, and STORE3A.

When a job is running, the Installer continuously updates the summary status panels with text indicating its status. To view the status updates, press Enter frequently or check the MVS System Display and Status Facility (SDSF).

When you use the Installer, you might encounter one of the following situations:

Incomplete Installer Generated JCL

Check your JCL before submitting a job. In a few cases, some DD statements are incomplete. For example, the UNIT parameter does not include a value and could cause a JCL error. Correct the statement by typing in a value, for example, UNIT=SYSDA.

Unfreed Data Sets

The Installer might not release some of the data sets it is using. When you re-enter the Installer, an FTOPEN/FTCLOSE error might occur because the data sets that were not freed are still in use. If this occurs, logoff and logon again to free up the data sets.

'Waiting for Execution' Status Message Does Not Change

If the status of a job does not change from Waiting for execution, a JCL error might have occurred and the step to update the text might not have processed. Check the variable panel for something that might have been typed incorrectly or that does not exist. Correct the error and press F7 to resubmit the job.

'Error Running JCL' Status Message Appears

If the status of a job changes to Error running JCL, check the variable panel for something that might have been typed in incorrectly or that does not exist. Correct the error and press F7 to resubmit the job.
Job Abends or Errors that Cancel a Job

If a job abends or encounters an error while running and is cancelled, the Installer does not update the status; the status remains Currently Running or Currently executing. In this case, manual intervention in the control table is required to restart the job. Refer to “Installer Control Table” on page 37. Do not press F7 on a screen when a job is running. Wait until the job is complete before submitting another job.
Chapter 6. Configuring APPC for DataRefresher

An APPC session between the MVS host and OS/2 workstation is required when DataRefresher OS/2 communicates with the DataRefresher components on the MVS host. Communication is required after DataRefresher is installed on MVS and the DataRefresher OS/2 code is downloaded to the workstation.

Establishing APPC connectivity for the first time is a significant effort and can be challenging. Typically the task is performed by the network team in the organization. This chapter assumes that a network team is available during DataRefresher installation and concentrates on setup activities required specifically for DataRefresher communication on the MVS host and the OS/2 workstation. Some general APPC information is also provided in this chapter.

This chapter:
- Explains how APPC works with DataRefresher
- Shows how OS/2, MVS, and DataRefresher link together
- Describes how to configure APPC on the host
- Describes how to configure APPC on the workstation
- Summarizes the conversation flow between workstation and host
- Provides information on debugging the APPC connection
- Lists APPC information sources

How APPC Works with DataRefresher

APPC communication is used in various ways by different products. Understanding how DataRefresher uses APPC helps you configure your systems for APPC with DataRefresher.

DataRefresher OS/2 builds JCL that runs on MVS. An APPC conversation transmits the JCL input to the host, executes the JCL input, and transmits the results back to the OS/2 user. DataRefresher OS/2 initiates this conversation using the partner logical unit (LU) and partner transaction program (TP) named in Communications Manager/2 (CM/2). You must define these partners on MVS. Define the partner LU in VTAM. Define the partner TP using either the APPC administration panels or the Administration Batch utility.

The TP definition includes JCL that starts the MVS DataRefresher communication code. The TP definition also specifies that this JCL be launched through the APPC asynchronous scheduler (ASCH). When the DataRefresher conversation is initiated, both the APPC and ASCH tasks must already be started on the MVS host.

When the conversation is allocated by DataRefresher OS/2, the OS/2 independent LU name and the DataRefresher OS/2 TP name are passed to the MVS host. DataRefresher on the MVS host can then send communications back to OS/2. The APPC side information (sometimes called CPI-C side information) on MVS is not used.
How MVS, OS/2 and DataRefresher Link Together

The diagram in Figure 7 shows the identifiers needed in VTAM/MVS, CM/2, and the DataRefresher host. The steps you follow to specify this information are explained in detail in this chapter.

Figure 7. Associated Identifiers in VTAM/MVS, CM/2, and DataRefresher
Figure 8 provides example values for the identifiers in VTAM/MVS, CM/2, and DataRefresher.

For PARMLIB example values, refer to “Defining SYS1.PARMLIB Members for APPC“ on page 50.
Overview of Steps to Configuring APPC

To configure APPC for DataRefresher, follow these steps:

1. Configure APPC for DataRefresher on the host
   a. Define the workstation to host
   b. Define VTAM entries for APPC communication
   c. Define the MVS APPC transaction profile (TP)
   d. Define SYS1.PARMLIB members for APPC
   e. Configure APPC security

2. Configure APPC for DataRefresher on the workstation
   a. Define DLC Adapter parameters
   b. Define SNA local node characteristics
   c. Define SNA connections
   d. Define SNA features
   e. Edit the NDF configuration file

These steps are explained in detail in the next sections, with the exception of security.

Configuring APPC for DataRefresher on the Host

You must create or modify definitions in four areas on MVS so APPC can work with DataRefresher:
- Workstation to host
- VTAM entries
- MVS APPC transaction profile (TP)
- SYS1.PARMLIB members

You should also review APPC security specifications for your system.

Defining the Workstation to the Host

To define your workstation to the host you need to:
- Define a switched major node
- Define an independent LU

Defining a Switched Major Node

Add a switched major node definition in VTAM to define the workstation. The PU name is part of the definition and is also used later as the local node name (also referred to as the CP name) in CM/2 on the workstation.

Depending on your hardware configuration, you might need to make other changes to finish adding the workstation to your network. For example, you might need to run an NCP gen, or your network systems programmer might need to create additional definitions so that your workstation can run LU 2 and LU 6.2 sessions.
Defining an Independent LU

Define the independent LU as a LOCADDR 0 LU on the switched major node definition, as shown in Figure 9.

You must define the independent LU name on the workstation as:

- An independent LU
- The default local LU alias

You use the independent LU name later as the local LU name in CM/2.

```
 ************************************************************
 * SWITCHED MAJOR NODE                                      *
 * M2TRN031 VBUILD TYPE=SWNET,MAXNO=50,MAXGRP=1             *
 * ************************************************************
 *                                                            *
 * IG2R060E PU     ADDR=C1,     STATION ADDRESS(CAN BE ANY VALUE)  *
 *                  IDBLK=05D,     ID FOR PC                    *
 *                  IDNUM=3060E,     XID                         *
 *                  DISCNT=NO,     HANG-UP ON LU LOGOFF          *
 *                  MAXDATA=265,     MAXOUT=7,                 *
 *                  SSCPFM=USSCS,     MODETAB=SNATERM#,     DYNAMIC LOGMODE *
 *                  LOGTAB=LOGTAB00,     LOGAPPL=IGJZIISL,     DIRECT LOGON TO VAMP *
 *                  USSTAB=UT2IRL,     USSTABLE                  *
 *                  PUTYPE=2,ISTATUS=ACTIVE                    *
 *                  STATOPT=('SPARE')                          *
 *                                                            *
 * IG2S1E42 LU     LOCADDR=0,MODETAB=MTCICS,DLOGMOD=APPCPCLM   *
 *                                                            *
 * IG2S1E43 LU     LOCADDR=2                                     *
 *                                                            *
 * IG2S1E44 LU     LOCADDR=3                                     *
 *                                                            *
 * IG2S1E45 LU     LOCADDR=4                                     *
 *                                                            *
 * IG2S1E46 LU     LOCADDR=5                                     *
 ***-----------------------------------------------------------***
```

Figure 9. MVS VTAM Definition for a Workstation

Defining VTAM Entries for APPC Communication

To define VTAM for APPC you must define:

- VTAM APPL
- APPC mode
Defining VTAM APPL
When defining VTAM APPL:

1. Set APPC to YES to enable APPC usage.
   
   Figure 10 shows an example of a VTAM APPL definition for APPC use.

2. Set SECACPT to CONV.
   
   This setting requires that a user ID and password be sent with the conversation allocate request from the workstation to the host. The user ID and password are validated and verified at the host.

```
* MVS/APPC LU6.2 DEFINITIONS
VBUILD TYPE=APPL
+ MVS/APPC SAMPLE LU DEFINITIONS
IGNZAPPC APPL ACBNAME=IGNZAPPC,
   APPC=YES,
   AUTOSES=0,
   DDRAINL=NALLOW,
   DLOGMOD=APPCPCLM,
   DMINWNL=5,
   DMINWNR=5,
   DRESPL=NALLOW,
   DSESLLIM=10,
   LMDENT=19,
   MODETAB=APPCMODE,
   PARSESS=YES,
   SECACPT=CONV,
   SRBEXIT=YES,
   VPACING=1
```

Figure 10. MVS/APPC LU6.2 Definitions

Defining an APPC Mode
Define the DLOGMOD value as shown in Figure 10. The DLOGMOD value must be a valid mode entry as shown in Figure 11 on page 46 (LOGMODE=APPCPCLM). You will also define a corresponding MODE in CM/2 on the workstation.
Defining the MVS APPC Transaction Profile (TP)

This section describes how to add a TP profile for DataRefresher. You can use the:

- APPC/MVS administration dialog
- APPC/MVS Administration Batch utility (ATBSDFMU)

Both the dialogs and the utility are documented in Chapters 6 and 7 of MVS/ESA Planning: APPC Management.

With the APPC/MVS Administration Dialogs

Figure 12 shows the first administration dialog panel required for the DataRefresher TP. To add a TP profile:

1. Select the TP Profile Administration service. DataRefresher does not require the remaining two services on this panel (Side Information and Database Token Administration).

```
APPC Administration

COMMAND ===>
Select one of the following with an "S". Then Enter.
Type information. Then Enter.

S TP Profile Administration
   Current TP Profile
   System file .. SYS1.APPCTP

   Side Information Administration
   Current Side Information
   System file .. SYS1.APPCSI

   Database Token Administration
   Current Database Token
   System file .. SYS1.APPCTP

Note: For a list of file names, add an "*" suffix to the partial data set.
```

F1=HELP  F2=SPLIT  F3=END   F4=RETURN  F5=RFIND  F6=RCHANGE
F7=UP    F8=DOWN  F9=SWAP  F10=REFRESH F11=RIGHT F12=CANCEL

Figure 12. APPC Administration
The panel for TP profile definitions appears, as shown in Figure 13.

2. Specify A as the command and press Enter.

```
Command ===> A
======
PF01 = Help     PF03 = Exit     PF07 = Up    PF08 = Down    PF12 = Cancel
PF02 = Scroll   PF04 = CSR

Specify an action or enter a command. Then Enter.
Actions: E - Edit   B - Browse    C - Copy    D - Delete
N - New Alias    S - Activation Status
Command: A - Add

Note: For a list of file names, add an "*" suffix to the data set name
      For other subset lists, type field or part of field with * suffix

Note: For a list of file names, add an "*" suffix to the data set name
      For other subset lists, type field or part of field with * suffix

Current system file SYS1.APPC

TP Name *                      (System/Group/User) ID *    (Group ID or UserID)
      (Ignored for System)
A TP Profile Name              Group/User
```

Figure 13. List of TP Profiles

The Add TP Profile panel appears, as shown in Figure 14

```
Command ===> A

Type information. Then Enter. More ...

Transaction Scheduler . ASCH___
To system file . SYS1.APPC

TP Name DVR110.DRIVER
      ________________
Level . . . . SYSTEM System/Group/User
ID . . . . . . . ________ Group ID or User ID
      (required for Group or User Level)
Active Status . . YES_ Yes/No
```

Figure 14. Add TP Profile

3. Specify the name of the transaction scheduler, the system file, and the TP name and press Enter. The TP name you supply in the Add TP Profile panel is also used in the APPC CM/2 configuration in OS/2. The value shown in Figure 14 is an example only.

```
The next Add TP Profile panel appears, as shown in Figure 15 on page 48.
```
4. Fill in the information in the panel and press Enter.

```
Command ===>
Add TP Profile  
More ...
Type information. Then Enter.
Transaction Scheduler: ASCH
To system file . . SYS1.APPCTP__________________________
TP Name: DVR110.DRIVER
Level . . : SYSTEM  ID . . :
Tailor Sysout . . . NO Yes/No, perform sysout tailoring
Tailor Account . . . NO Yes/No, perform account tailoring
Scheduler Class . . . ______ Scheduled class when attached
(enter "*" for list of classes)
TP Schedule Type . . STD Std (Standard) / Multi (Multitrans)
Generic Userid . . . ______ TP "owner", required for Multitrans
```

Figure 15. Add TP Profile

The Add JCL for TP Profile panel appears, as shown in Figure 16.

5. Select **Edit** to add JCL for the TP profile. Press Enter.

```
Command ===>
Add JCL for TP Profile  
Select one of the following with an "S". Then Enter.

Transaction Scheduler: ASCH
To system file: SYS1.APPCTP

  _ Edit  Create new JCL using edit
  _ Model Use a JCL model as a base for editing
```

Figure 16. Add JCL for TP Profile

An edit panel appears.

6. Customize the job card, STEPLIB DSN, and SYSOUT CLASS for your installation. A sample of what is required is shown in Figure 17 on page 49.
With the Administration Batch Utility

If the administrative panels for APPC are not installed, use the batch utility to add a TP profile. Figure 18 shows the batch utility ATBSDFMU. Specify delimiters carefully. If the delimiters are not positioned properly, the TP profiles might not be coded correctly.

Figure 17. Sample JCL for the TP Profile. Customize STEPLIB DSN and SYSOUT CLASS for the TP profile.

Figure 18. APPC/MVS Administration Batch Utility—ATBSDFMU
The APPC/ASCH handles JCL differently from the usual JES process. Some of these differences are described in “Defining the ASCHPM00 Member” on page 51. MVS/ESA Planning: APPC Management describes process differences in more detail.

**Defining SYS1.PARMLIB Members for APPC**

You need to define three SYS1.PARMLIB members for APPC:

- APPCPM00
- ASCHPM00
- IEAICS00

**Defining the APPCPM00 Member**

The APPCPM00 member contains LUADD statements. You must have an LUADD statement to direct each inbound or outbound APPC transaction. For DataRefresher, you need both an inbound and an outbound transaction, but both requirements can be satisfied with one VTAM APPL and one LUADD statement.

Figure 19 shows an example of how to define the APPCPM00 member for APPC.

```
LUADD ACBNAME(IGNZAPPC) // Add LU for DataRefresher
  SCHED(ASCH) // default scheduler
  BASE // allow outbound traffic
  TPDATA(SYS1.APPCTP) // TP profiles data set
  TLEVEL(USER) // Specify the search for TP profiles
```

The parameters in the LUADD statement are:

- **ACBNAME** Must match the APPL defined in VTAM for APPC.
- **SCHED(ASCH)** Indicates that the asynchronous scheduler initiates the JCL associated with an inbound request using VTAM ACBNAME.
- **BASE** Serves as a base definition for outbound transactions. MVS DataRefresher code uses the same VTAM APPL when it issues an outbound request back to the workstation.
TPDATA(SYS1.APPCTP) Indicates that the TP profile associated with the inbound transaction must be defined in the defined data set (SYS1.APPCTP).

TPLEVEL(USER) Indicates that the USER, GROUP, and SYSTEM level profiles are all valid levels for TP profiles to be associated with the ACBNAME.

SIDEINFO DATASET Not needed by DataRefresher and is not required in the APPCPM00 member.

You can also separate the two types of transactions and use two VTAM APPL definitions and two separate LUADD definitions. Separate definitions can be helpful when debugging VTAM traffic problems because the inbound and outbound transaction activities are isolated.

**Defining the ASCHPM00 Member**

Add classes to ASCHPM00 to determine the initiation and response criteria for various APPC applications (for example, IMS, CICS, and DataRefresher APPC applications each have their own scheduling criteria).

Figure 20 shows an example of how to configure the ASCHPM00 member for APPC.

```plaintext
/*-----------------------------------------------*/
/* APPC/MVS ASCH DEFINITIONS */
/*-----------------------------------------------*/
CLASSADD CLASSNAME(SLOW) /* CLASS NAME */
MAX(05) /* MAX INITS */
MIN(00) /* MIN INITS */
RESPGOAL(60) /* RESP TIME GOAL */
MSGLIMIT(300) /* JOB LOG SIZE */
/*-----------------------------------------------*/
CLASSADD CLASSNAME(FAST) /* CLASS NAME */
MAX(05) /* MAX INITS */
MIN(00) /* MIN INITS */
RESPGOAL(0.01) /* RESP TIME GOAL */
MSGLIMIT(300) /* JOB LOG SIZE */
/*-----------------------------------------------*/
OPTIONS DEFAULT(SLOW) /* DEFAULT CLASS */
SUBSYS(JES2) /* SUB SYS INTERFACE */
/*-----------------------------------------------*/
TPDEFAULT REGION(2M) /* REGION SIZE */
TIME(1,30) /* TIME */
MSGLLEVEL(1,0) /* MSGLEVEL */
OUTCLASS(A) /* SYSSOUT CLASS */
/*-----------------------------------------------*/
```

Figure 20. ASCHPM00 Member in SYS1.PARMLIB

ASCH performs its own initiation of a job outside of JES. Therefore the classes added to ASCHPM00 are analogous to the CLASS= parameter on a typical JES initiated job.
The parameters for CLASSADD are:

**CLASSNAME** Indicates the name of the class you are adding. When a TP specifies a particular CLASSADD CLASSNAME, the TP is scheduled by ASCH according to the criteria specified in the CLASSADD statement.

**MAX** Indicates the maximum number of initiators that can be started.

**MIN** Indicates the minimum number of initiators to be prescheduled.

**RESPGOAL** Determines the speed of initiation, allowing ASCH to prioritize work.

**MSGLIMIT** Determines the maximum number of messages that can be saved in the data set specified as MESSAGE_DATA_SET in the TP profile.

The parameters for OPTIONS are:

**DEFAULT** Sets the default class used when a TP profile omits the CLASS keyword.

**SUBSYS** Specifies the subsystem under which the transaction initiators are started.

The values for TPDEFAULT are used in place of the usual parameters on a job card. The parameters are:

**REGION** Specifies the maximum amount of memory available for the job.

**TIME** Specifies the maximum amount of time allotted for the job.

**MSGLEVEL** Determines which job statements are shown in the JCL output listing.

**OUTCLASS** Specifies the SYSOUT class that the output is written to.

ASCH bypasses the JES initiation, and no JESJCL output is generated for jobs started by ASCH. The lack of output can cause some confusion and difficulty during initial debugging. However, you can refer to messages written to the data set identified by the MESSAGE_DATA_SET parameter. The MESSAGE_DATA_SET is part of the TP profile.

**Defining the IEAICS00 Member**

Create additional entries in the IEAICS00 SYS1.PARMLIB member to assign performance group numbers to the ASCH subsystem. Examples of required entries can be found in Chapter 12 “APPC/MVS Measurements and Tuning” of MVS/ESA Planning: APPC Management.

---

**Configuring APPC for DataRefresher on the Workstation**

To establish and configure the connection between the local environment (workstation) and the partner environment (MVS host system), you need to provide the following network, node, and logical unit information for both the local and partner environments:

- Network ID
- Node name
- Node alias name
- Node ID
- Logical Unit (LU) name
- Logical Unit (LU) alias name

Your task will be easier if you have this information recorded on a worksheet before you begin using CM/2. See the sample worksheet in “OS/2 Feature Installation Worksheet for MVS and OS/2” on page 20.

CM/2 uses the values you supply to update a node definition file (NDF) stored in the \CMLIB directory on the workstation. You can edit this file if you need to review all the values you supplied in CM/2. See Figure 40 on page 70 for an example of this file.

To configure your APPC API values in CM/2 for DataRefresher:

1. Open your CM/2 object from the workstation desktop. The Communications Manager/2 – Icon View window is displayed.

2. Select the Communications Manager Setup icon. The Communications Manager Setup window is displayed, as shown in Figure 21.

![Figure 21. Communications Manager Setup Window](image)

3. Select Setup. The Open Configuration window is displayed, as shown in Figure 22 on page 54.
The **Configuration** field displays the name of your current configuration. You are about to make changes to this configuration. It is recommended that you make a backup of the following configuration files before continuing:

- `LU62.CFG`
- `LU62.NDF`
- `LU62.CF2`
- `LU62.SEC`

where `LU62` is the name of your current configuration.

4. Optional: Make a backup of your configuration files:
   a. Note the name of your configuration. This is displayed in the **Configuration** field.
   b. Note the name of the directory where the files are stored. This name is displayed in the **Directory** field.
   c. Go to an OS/2 session and copy all the files with the configuration name to a safe directory or disk.

5. Make sure the configuration file you want to change is selected on the Open Configuration window.

6. Select **OK**. The Communications Manager Configuration Definition window is displayed, as shown in Figure 23 on page 55.
7. From the **Workstation Connection Type** list box, select **Token-ring or other LAN types**.

8. From the **Feature or Application** list box, select **APPC APIs**.

9. Select **Configure**. The Communications Manager Profile List Sheet window is re-displayed, as shown in Figure 24.
You need to specify information in the following four areas:

- DLC adapter parameters for token ring or other LAN types
- SNA local node characteristics
- SNA connections
- SNA features

Select each of these items from the window in turn and supply the required information. The following sections describe each task in more detail.

**Defining DLC Adapter Parameters**

To specify adapter parameters:

1. Select **DLC – Token-ring or other LAN types** from the Communications Manager Profile List Sheet window and select **Configure**. The Token Ring or Other LAN Types DLC Adapter Parameters window is displayed, as shown in Figure 25.

![Token Ring or Other LAN Types DLC Adapter Parameters Window](image)

**Figure 25. Token Ring or Other LAN Types DLC Adapter Parameters Window**

2. Specify values for the following fields:

   - **Adapter**: The value is 0.
   - **C&SM LAN ID**: An 8-character name. The network ID for your SNA network is an appropriate value to supply. You must supply a value in this field, but the information is used only for clarification in reports. It is not used to establish connections.
3. Select **OK**. The Communications Manager Profile List Sheet window is re-displayed, as shown in Figure 26.

![Communications Manager Profile List Sheet](image)

All profiles listed as Required MUST be configured to support the pictured configuration. Check marks indicate configuration for a profile is complete.

<table>
<thead>
<tr>
<th>Action</th>
<th>Profile Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td>DLC - Token-ring or other LAN types</td>
</tr>
<tr>
<td>Required</td>
<td>SNA local node characteristics</td>
</tr>
<tr>
<td>Optional</td>
<td>SNA connections</td>
</tr>
<tr>
<td>Optional</td>
<td>SNA features</td>
</tr>
</tbody>
</table>

**Figure 26. Communications Manager Profile List Sheet Window**

You have now specified information about the LAN, but you still need to supply information about the local environment where your workstation is located.

**Defining SNA Local Node Characteristics**

To specify SNA local node characteristics:

1. Select **SNA local node characteristics** from the Communications Manager Profile List Sheet window.

2. Select **Configure**. The Local Node Characteristics window is displayed, as shown in Figure 27 on page 58.
3. Specify values for the following fields:

**Network ID**
The ID of the SNA network to which you are connected. Your network administrator can provide this information.

**Local node name**
The name that identifies the node within the network to which your workstation is attached. This name is sometimes called the control point.

**Local node ID**
The values that identify the node within the network to which your workstation is attached. These values are the IDBLK and IDNUM parameters in the VTAM (VBUILD) definition for the workstation.

**Local node alias name**
The alias for the local node name. You can specify the actual local node name as the alias.

4. Select the **Activate Attach Manager at start up** check box.

5. Select **OK**.

The Communications Manager Profile List Sheet window re-displayed

You have now specified information about the local environment, but you still need to supply information about the partner environment (where the MVS host system is located). You need to supply this information to establish a connection between the local environment and the partner environment, that is, between your workstation and the MVS host system.
Defining SNA Connections

To specify SNA connections:

1. Select **SNA connections** from the Communications Manager Profile List Sheet window.

2. Select **Configure**. The Connections List window is displayed, as shown in Figure 28.

![Connections List Window](image)

*Figure 28. Connections List Window*

3. Select **Create**. The Adapter List window is displayed, as shown in Figure 29 on page 60.
4. From the Adapter Type list box, select Token-ring or other LAN types.
5. Set the Adapter number field to 0.
6. Select Continue. The Create a Connection to a Host window is displayed, as shown in Figure 30.

Figure 29. Adapter List Window

Figure 30. Create a Connection to a Host Window
7. Specify values for the following fields:

- **Link name**
  The name used to identify the link between your workstation and the MVS host system. Supply a unique name.

- **LAN destination address**
  The address of the communications controller on the token ring. This address is defined in the NCP program for the controller.

- **Partner network ID**
  The ID of the SNA network where the MVS host system is located. Your network administrator can provide this information.
  The MVS host system is the partner in the connection you are establishing for your workstation.

- **Partner node name**
  The name that identifies the node within the network to which the MVS host system is attached. This name is sometimes called the control point and is defined by the SSCPNAME parameter in the NCP program.

- **Node ID**
  The values that identify the node within the network to which the MVS host system is attached. These values are the IDBLK and IDNUM parameters in the VTAM (VBUILD) definition.

8. Select the **Use this host connection as your focal point support** check box.

9. Deselect the **APPN support** check box.

10. Select **Define partner LUs**. The Partner LUs window is displayed, as shown in Figure 31.
11. Supply the required information in the fields on the window:

**Network ID**
The ID of the SNA network to which you are connected. Your network administrator can provide this information.

**LU name**
The name that identifies where the logical unit, in this case the MVS host system, is located on the node on the network.

The MVS host system (or logical unit) is the partner in the connection you are establishing for your workstation.

**Alias**
The alias for the partner LU name. You can specify the actual partner LU name as the alias.

12. Deselect the **Partner LU is dependent** check box.
13. Select **Add**. The Create a Connection to a Host window is re-displayed.
14. Select **OK**. The Connections List window is re-displayed.
15. Select **Close**. The Communications Manager Profile List Sheet window is re-displayed.
You have now specified network, node, and LU information for the MVS host system (or partner) so that you can establish a connection. You still need to supply information about the local LU and modify the following features:

- Modes
- Transaction programs
- Security information, as specified in the CPI communications side information.

**Defining SNA Features**

You need to modify:

- Local LUs
- Modes
- Transaction program definitions
- CPI-C side information

You perform these tasks from the SNA Features List window. To access the window:

1. Select **SNA features** from the Communications Manager Profile List Sheet window.
2. Select **Configure**. The SNA Features List window is displayed, as shown in Figure 32.

![SNA Features List Window](image)

**Figure 32. SNA Features List Window**

You select an item from the window and supply the required information, as described in the following steps.

3. Select **Local LUs** from the **Features** list box.
4. Select **Create**. The Create a Local LU window is displayed, as shown in Figure 33 on page 64.
5. Supply the required information in the fields on the window:

- **LU name**
  The name that identifies where the logical unit, in this case your workstation, is located on the node on the network. This name is defined in the VTAM (VBUILD) definition.

- **Alias**
  The alias for the logical unit. You can specify the actual logical unit name as the alias.

6. Select the **Independent LU** radio button.

7. Select **OK**. The SNA Features List window is re-displayed.

8. From the **Features** list box, select **Modes**.

9. Select **Create**. The Mode Definition window is displayed, as shown in Figure 34 on page 65.
10. Supply the required information in the fields on the window:

- **Mode name**: APPCPCLM
- **Class of service**: #CONNECT
- **Mode session limit**: 6
- **Minimum contention winners**: 3
- **Receive pacing window**: 7
- **Maximum RU size**: 256

Use the defaults for the **Compression** fields.

11. Select **OK**. The SNA Features List window is re-displayed.

12. From the **Features** list box, select **Transaction program definitions**.

13. Select **Create**. The Transaction Program Definition window is displayed, as shown in Figure 35 on page 66.
14. Deselect the Service TP check box.

15. Supply the required information in the fields on the window:

**Transaction Program (TP) name**
A unique name. The value you specify here must match the symbolic destination name and must match the name used in the DataRefresher database to describe the host.

**OS/2 program path and file name**
The OS/2 path and file name where the DataRefresher program will be located, for example:
```
C:\DVRDIR\DvrMVSCx.EXE
```

16. Deselect the Conversation security required check box.

17. Select **Continue**. The Additional TP Parameters window is displayed, as shown in Figure 36.

**Figure 36. Additional TP Parameters Window**
18. Select the **VIO-Windowable** radio button.
19. Select the **Queued, operator preloaded** radio button.
20. Select **OK**. The SNA Features List window is re-displayed.
21. From the **Features** list box, select **CPI Communications side information**.
22. From the **Definition** list box, select the symbolic destination name for the MVS host system.
23. Select **Change**. The CPI Communications Side Information window is displayed, as shown in Figure 37.

![CPI Communications Side Information Window](image)

Figure 37. CPI Communications Side Information Window

24. In the **Symbolic destination name** field, supply a unique name. The value you specify here must match the DataRefresher database name used to describe the host and must match the TP name for the workstation.
25. Select the **Alias** radio button, then select the alias name that you assigned to the partner LU from the list box.
26. Deselect the **Service TP** check box then type the TP name for the partner, that is, the MVS host system.
27. Select the **Program** radio button.
28. From the **Mode name** field, select **APPCPCLM**.
29. Select **Continue**. The CPI Communications Program Security window is displayed, as shown in Figure 38 on page 68.
30. Supply the required information in the fields on the window:

   **User ID**  Type your TSO/E user ID for the MVS host system.
   **Password**  Type your password for the MVS host system.
   **Retype the password**  Type your password again for confirmation.

31. Select **OK**. The SNA Features List window is re-displayed.

32. Select **Close**. The Communications Manager Profile List Sheet window is re-displayed.

33. Close this window and continue closing windows until you exit CM/2.

You have now finished using CM/2 to configure the connection between your workstation and the MVS host system.
Editing the NDF Configuration File

In CM/2 Release 1 Version 1 modification 1, it is possible to set the DEFAULT_LOCAL_LU_ALIAS through Communications Manager Setup. For prior releases, you need to edit the NDF file to set this parameter.

The NDF configuration file is stored in the \CMLIB directory on your workstation. You can manually edit the NDF file to review or update the APPC API values you supplied in CM/2. Use the workstation editor to display the file and then change the values that need to be updated.

For example, to add an alias name for your local LU, add the following line to the file:

```
DEFAULT_LOCAL_LU_ALIAS(youralias)
```

Add the line to DEFINE_DEFAULTS, as shown in Figure 39.

```
DEFINE_DEFAULTS IMPLICIT_INBOUND_PLU_SUPPORT(NO)
DEFAULT_MODE_NAME(BLANK)
DEFAULT_LOCAL_LU_ALIAS(IG2S1E42)
MAX_MC_LL_SEND_SIZE(32767)
DEFAULT_TP_OPERATION(NONQUEUED_AM_STARTED)
DEFAULT_TP_PROGRAM_TYPE(BACKGROUND)
DEFAULT_TP_CONV_SECURITY_RQD(NO)
MAX_HELD_ALERTS(10);
```

*Figure 39. Updating the Local LU Alias Name in the NDF File*

To verify your manual changes, run the CMVERIFY command from the OS/2 command line (for example, CMVERIFY configfilename) and then stop and restart CM/2.

Figure 40 on page 70 shows an example of an NDF file.
DEFINE_LOCAL_CP  FQ_CP_NAME(GBIBMIG.IG2R060E)  
     CP_ALIAS(IG2R060E)  
     NAU_ADDRESS(INDEPENDENT_LU)  
     NODE_TYPE(EN)  
     NODE_ID('X'/zerodot5D3/zerodot6/zerodotE')  
     HOST_FP_SUPPORT(YES)  
     HOST_FP_LINK_NAME(HOST/zerodot/zerodot/zerodot1);  

DEFINE_LOGICAL_LINK  LINK_NAME(HOST0001)  
     FQ_ADJACENT_CP_NAME(GBIBMPN.IGJYHJ)  
     ADJACENT_NODE_TYPE(LEN)  
     DLC_NAME(IBMTRNET)  
     ADAPTER_NUMBER(0)  
     DESTINATION_ADDRESS('X'400074511092')  
     CP_CP_SESSION_SUPPORT(NO)  
     ACTIVATE_AT_STARTUP(YES)  
     LIMITED_RESOURCE(USE_ADAPTER_DEFINITION)  
     LINK_STATION_ROLE(USE_ADAPTER_DEFINITION)  
     SOLICIT_SSCP_SESSION(YES)  
     NODE_ID('X'/zerodot5C3/zerodot5/zerodotF')  
     EFFECTIVE_CAPACITY(USE_ADAPTER_DEFINITION)  
     COST_PER_CONNECT_TIME(USE_ADAPTER_DEFINITION)  
     COST_PER_BYTE(USE_ADAPTER_DEFINITION)  
     SECURITY(USE_ADAPTER_DEFINITION)  
     PROPAGATION_DELAY(USE_ADAPTER_DEFINITION)  
     USER_DEFINED_1(USE_ADAPTER_DEFINITION)  
     USER_DEFINED_2(USE_ADAPTER_DEFINITION)  
     USER_DEFINED_3(USE_ADAPTER_DEFINITION);  

DEFINE_LOCAL_LU  LU_NAME(IG2S1E42)  
     LU_ALIAS(IG2S1E42)  
     NAU_ADDRESS(INDEPENDENT_LU);  

DEFINE_PARTNER_LU  FQ_PARTNER_LU_NAME(GBIBMPN.IGNZAPPC)  
     PARTNER_LU_ALIAS(IGNZAPPC)  
     PARTNER_LU_UNINTERPRETED_NAME(IGNZAPPC)  
     MAX_MC_LL_SEND_SIZE(32767)  
     CONV_SECURITY_VERIFICATION(NO)  
     PARALLEL_SESSION_SUPPORT(YES);  

DEFINE_PARTNER_LU_LOCATION  FQ_PARTNER_LU_NAME(GBIBMPN.IGNZAPPC)  
     WILDCARD_ENTRY(NO)  
     FQ_OWNING_CP_NAME(GBIBMPN.IGJYHJ)  
     LOCAL_NODE_NN_SERVER(NO);  

Figure 40 (Part 1 of 2). Sample NDF File
DEFINE_MODE  MODE_NAME(APPCPCLM)
  COS_NAME(#CONNECT)
  DEFAULT_RU_SIZE(NO)
  MAX_RU_SIZE_UPPER_BOUND(256)
  RECEIVE_PACING_WINDOW(7)
  MAX_NEGOTIABLE_SESSION_LIMIT(32767)
  PLU_MODE_SESSION_LIMIT(6)
  MIN_CONWINNERS_SOURCE(3);

DEFINE_DEFAULTS  IMPLICIT_INBOUND_PLU_SUPPORT(YES)
  DEFAULT_MODE_NAME(BLANK)
  DEFAULT_LOCAL_LU_ALIAS(IG2S1E42)
  MAX_MC_LL_SEND_SIZE(32767)
  DIRECTORY_FOR_INBOUND_ATTACHES("")
  DEFAULT_TP_OPERATION(NONQUEUED_AM_STARTED)
  DEFAULT_TP_PROGRAM_TYPE(BACKGROUND)
  DEFAULT_TP_CONV_SECURITY_RQD(NO)
  MAX_HELD_ALERTS(10);

DEFINE_TP  TP_NAME(WINMVS3)
  PIP_ALLOWED(NO)
  FILESPEC(C:\DVRDIR\DvrMVSCx.exe)
  CONVERSATION_TYPE(EITHER)
  CONV_SECURITY_RQD(NO)
  SYNC_LEVEL(EITHER)
  TP_OPERATION(QUEUED_OPERATOR_PRELOADED)
  PROGRAM_TYPE(VIO_WINDOWABLE)
  INCOMING_ALLOCATE_QUEUE_DEPTH(255)
  INCOMING_ALLOCATE_TIMEOUT(INFINITE)
  RECEIVE_ALLOCATE_TIMEOUT(INFINITE);

DEFINE_CPI_SIDE_INFO  SYMBOLIC_DESTINATION_NAME(WINMVS3 )
  PARTNER_LU_ALIAS(IGNZAPP)
  MODE_NAME(APPCPCLM)
  TP_NAME(DVR110.DRIVER);

START_ATTACH_MANAGER;

---

Figure 40 (Part 2 of 2). Sample NDF File
Conversation Flow between Workstation and Host

Figure 41 gives an overview of the inbound flow during a DataRefresher APPC conversation.

When a workstation activity initiates an APPC conversation, values specified in CM/2 are used to send the allocate request to the host. Data passed from the workstation to the host includes:

- Partner LU name
- Partner TP name
- User ID and password
- Local TP name
- Default local LU alias name

VTAM is the first point of contact on the host for a request. Validation of the user ID and password is performed at this point.

APPC represents the address space started with the S APPC, SUB=MSTR command, and ASCH represents the address space started with the S ASCH, SUB=MSTR command. After VTAM verifies the conversation allocation request from the workstation, the flow passes to APPC. Within APPC the TP profiles are searched for the matching TP name. When the TP is located, APPC recognizes that the TP is to be scheduled by ASCH. ASCH uses the JCL from the TP profile and the defaults within the ASCHPM00 member to build a job.

A transaction initiator is started based on the CLASS criteria. ASCH starts the ASCHINT procedure which, in turn, starts the initiator. The initiator start is visible on the MVS console. The TP job runs within the initiator.
When the TP job starts successfully, an outbound conversation is started by DataRefresher, which communicates back to the workstation. DataRefresher saves the workstation TP and default local LU alias names that were passed to the host during the inbound flow and uses them to direct the output of the outbound conversation.

Figure 42 gives an overview of the outbound flow during a DataRefresher APPC conversation.

![Diagram of DataRefresher APPC Conversation: Outbound Flow]

When the workstation receives the response, DataRefresher tasks start using the communications path that is established. Typically, the workstation builds JCL input and sends the JCL input to DataRefresher running on MVS. DataRefresher MVS translates the JCL input and runs the input through an MVS internal reader. Multiple jobs might be run in this manner to complete a particular single action initiated on the workstation.

The DataRefresher APPC TP is defined as scheduling type STANDARD, which means that when the task terminates, the TP job completes and the initiator terminates.
Debugging the APPC Connection

This section offers:

- A list of tools you can use to test your APPC connection
- A problem/resolution table to help you troubleshoot
- Additional troubleshooting tips

Tools to Test APPC and DataRefresher

You can use the DataRefresher create data type function to test the APPC connection. To use the create data type function to create a dummy User Data Type from DataRefresher OS/2:

1. Open the DataRefresher World.
2. Create a new Data Type exit using the following parameters:
   - Load Lib member name=DVRXAXUT
   - Load Lib=your_exit_load_lib
   - Data Type=XY
3. Select Create.

If you are able to create a data type, your APPC connection is operating correctly. If you are unable to create a data type, begin problem determination. You can test APPC and the DataRefresher connection to APPC using:

- CM/2 trace
- GETSENSE from the GETSENSE package on the OS/2 tools disk
- OS/2 system logs
- MVS/JES/VTAM/TP logs
- VTAM trace
- TP job log
- TP DXTPRINT and DXTDUMP

Also refer to “Problem/Resolution Table” on page 75 when you try to determine the problem.
## Problem/Resolution Table

Table 21 lists some common APPC connection problems, common causes, indicators, and suggested actions to resolve them.

### Table 21 (Page 1 of 2). Common APPC Connection Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Causes, Indicators, and Suggested Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communications do not reach the host</strong></td>
<td></td>
</tr>
<tr>
<td>Common causes</td>
<td>• CM/2 is not started.</td>
</tr>
<tr>
<td></td>
<td>• CM/2 configuration file has errors.</td>
</tr>
<tr>
<td>Indicators</td>
<td>• DataRefresher messages and CM/2 show nonzero return codes.</td>
</tr>
<tr>
<td></td>
<td>• No host activity.</td>
</tr>
<tr>
<td>Suggested actions</td>
<td>• Check <em>Communications Manager/2 Messages and Codes</em> to see if any messages you received point to specific problems. Look for CPI-C side information.</td>
</tr>
<tr>
<td></td>
<td>• Use a CM/2 trace:</td>
</tr>
<tr>
<td></td>
<td>– Select a detailed trace.</td>
</tr>
<tr>
<td></td>
<td>– Locate any CPI-C API return codes and APPC Sense Data codes in the trace title.</td>
</tr>
<tr>
<td></td>
<td>– Look up CPI-C API return codes in <em>MVS/ESA SP V4 Writing TPs for APPC/MVS</em>.</td>
</tr>
<tr>
<td></td>
<td>– Check the Sense Data codes in SENSEDATA.INF.</td>
</tr>
<tr>
<td></td>
<td>• Check the last API call on a successful connection to see if it is “MCReceive and Wait, with RC=0”.</td>
</tr>
<tr>
<td><strong>DataRefresher communication servers do not start</strong></td>
<td></td>
</tr>
<tr>
<td>Common causes</td>
<td>• APPC/MVS driver is not found or is not valid.</td>
</tr>
<tr>
<td></td>
<td>• MVS system constraints.</td>
</tr>
<tr>
<td>Indicators</td>
<td>• A DataRefresher message indicating a host timeout (no MVS job number in the message).</td>
</tr>
<tr>
<td>Suggested actions</td>
<td>• Examine MVS, VTAM, and APPC logs for communication activity.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that APPC/MVS is active.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that DVRS0000 was started on the host.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that the internal reader job was spooled (job name=USERIDnr).</td>
</tr>
</tbody>
</table>
### Table 21 (Page 2 of 2). Common APPC Connection Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Causes, Indicators, and Suggested Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communications do not reach the workstation</strong></td>
<td><strong>Common causes</strong>&lt;br&gt;• Incorrect communication parameters were passed to the host.&lt;br&gt;• The workstation TP driver is incorrect.&lt;br&gt;• JES3 is used without a routing statement, causing jobs to be routed to alternate processors. The alternate processors might not have APPC defined within them.&lt;br&gt;&lt;br&gt;<strong>Indicators</strong>&lt;br&gt;• A DataRefresher message about a host timeout (MVS job number is in the message).&lt;br&gt;• The MVS job is in a long WAIT state.&lt;br&gt;• Return code 20.&lt;br&gt;&lt;br&gt;<strong>Suggested actions</strong>&lt;br&gt;• Check MVS, VTAM, and APPC logs for communication activity.&lt;br&gt;• Check the MVS job spool output (DXTPRINT, SYSTSPRT, and DXTDUMP)&lt;br&gt;• Ensure the LU that was passed to the host from the workstation (the default local LU alias definitions in CM/2) is valid. Make sure that it is:&lt;br&gt;  − Controlled by the PU (see SYS1.VTAMLST)&lt;br&gt;  − Enabled for LU 6.2 (LOCADD=0 in SYS1.VTAMLST)&lt;br&gt;• Verify that the local TP definition in CM/2 is correct.&lt;br&gt;• Make sure the LUADD definition in APPCPM00 contains the keyword BASE.&lt;br&gt;• If using JES3, include a routing statement in the JCL to ensure the communication is directed back to the workstation.</td>
</tr>
<tr>
<td><strong>Intermittent communications problems</strong></td>
<td><strong>Common causes</strong>&lt;br&gt;• TP is not active.&lt;br&gt;• DB2 for OS/2 is not active.&lt;br&gt;&lt;br&gt;<strong>Indicators</strong>&lt;br&gt;• DataRefresher messages indicating a host timeout.&lt;br&gt;• An MVS job is in a WAIT state.&lt;br&gt;&lt;br&gt;<strong>Suggested actions</strong>&lt;br&gt;• Cancel the MVS job and check the output.&lt;br&gt;• Restart APPC on the host. Cancel and then start the APPC and ASCH address spaces.&lt;br&gt;• Restart APPC on the workstation. Stop and then start APPC Attach Manager.</td>
</tr>
</tbody>
</table>

### Additional Troubleshooting Tips

This section contains some common errors and the resulting symptoms, as well as pointers for debugging problems.

- If you receive an error immediately following a workstation request to the host, suspect the CM/2 setup. Usually the error message indicates CPI-C side information problems or an inactive CM/2.

If you encounter a problem and make changes but the changes you made were not recognized:

1. Reboot the workstation or stop the DataRefresher processes with a tool such as the Process Status Presentation Manager (PSPM) tool for OS/2.

2. Make sure that the CONFIG.SYS file specifies
   ```
   RESTARTOBJECTS=STARTUPFOLDERSONLY
   ```
   to ensure that failing processes are not automatically restarted by OS/2 during reboot.

A CM/2 trace can be an extremely valuable tool for debugging communications problems. To use a trace:
1. Set the traces for the type of net you are using (for example, Token ring or Ethernet) and all APPC entries.

2. Format the trace output and look for -RSP entries that might give clues to the failure point.

You can also use the CM/2 Subsystem Management tool to query links and sessions. Try to establish a session between the local independent LU and the VTAM APPC APPL.

- Use the display commands provided for APPC and ASCH to check on the status of inbound and outbound conversations. The command syntax and information on interpretation of output is included in Chapter 11 “Operating APPC/MVS” of MVS/ESA Planning: APPC Management.

If the message S ASCHINT shows on the MVS console, and then nothing happens, an inbound transaction appears to have occurred. Check for two strong problem possibilities:

- Check that a performance group has been assigned for ASCH. The lack of this assignment causes “hangs” that are not immediately obvious.

- Check the data set specified as MESSAGE_DATA_SET in the TP profile. If no data set is assigned, the default name is &SYSUID.&SYSWUID.&TPDATE.&TPTIME.JPGLOG. The default attributes specify that a new data set be built when an error occurs.

The data set can contain good information, but the job might end with only an indication of JCL error. The way ASCH checks the JCL is similar to the way it is checked in JES, but with exceptions. Chapter 5 “Controlling the Execution of Transaction Programs” of MVS/ESA Planning: APPC Management lists JCL restrictions for the APPC environment.

In one case, SYSOUT= caused such a JCL error, and the problem was resolved by creating the data sets (LRECL of 121) and referring to them as DSN= in the TP JCL.

In another case, a JCL error was caused by the mismatch between an accounting code valid only for batch and the actual foreground task submission of the TP job by ASCH.

---

**APPC Information Sources**

This section lists sources for information on APPC.

**Highly recommended**

- Multi-platform APPC Configuration Guide
- MVS/ESA Planning: APPC Management

**For advanced users**

- APPC Connection newsletter. Send e-mail to appcnews@vnet.ibm.com for a free subscription.
- CPI-C Reference for Programmers

**IBM support**

- IBM Marketing Technical Support.
• MKTTOOLS conference disk.
• APPC forum on OS2BBS on IBMLINK.
• Enterprise Communication Partner in Development program in the IBM Worldwide Developer program

For additional information or to receive a membership application, contact:

U.S. and Canada 1-800-553-1623
Worldwide 1-770-835-9902
Fax 1-214-280-6116
E-mail commsrv@vnet.ibm.com
Internet URL http://www.austin.ibm.com/developer
Internet FTP networking.raleigh.ibm.com. Use the ID anonymous to access /pub/appc_appn.


• IBM APPC publications:
  – APPC and CPI-C Product Implementations
  – APPC Application Examples in MVS/ESA and OS/2
  – APPC Programming Considerations in MVS/ESA and OS/2
  – APPC System Definitions in MVS/ESA and OS/2
  – APPC/MVS Handbook for the OS/2 System Administrator
  – The Best of APPC, APPN, and CPI-C (a CD-ROM collection of sample applications and documents to support APPC, APPN, and CPI-C products)
  – MVS/ESA Application Development: Writing Transaction Programs for APPC/MVS
  – Performance Considerations in an APPC/MVS Environment
  – SAA Common Communication Support Summary
Chapter 7. Downloading and Installing DataRefresher OS/2 (PWS) on Your Workstation

The following overview summarizes the tasks for downloading and installing the DataRefresher OS/2 (PWS) feature on the OS/2 workstation. An LU 2 connection between the host and the workstation is needed for this process. After you complete this download and installation process you need an LU 6.2 APPC connection between the MVS host and OS/2 CM/2 to run DataRefresher on both the host and workstation.

Although you do not use the LU 6.2 APPC connection until after you download and install DataRefresher OS/2 on your workstation, we highly recommended that you install and configure the LU 6.2 APPC connection before you download and install DataRefresher using LU 2. Both network connections, LU 2 and LU 6.2, are usually installed and configured by the network team in your organization.

Installing DataRefresher on the workstation involves three components:

- DataRefresher database
- DataRefresher code
- DataHub Integration code

You must install the code and the sample database that is provided. You can optionally install the DataHub Integration component, which allows you to launch DataRefresher from the DataHub product.

To access DataRefresher V1 from DataHub, you need DataHub V1R2. You cannot invoke DataRefresher from DataHub V1R1. Before you install the DataHub/DataRefresher integration code, you must first install DataHub V1R2.

You can install DataRefresher on either a single independent workstation, or on several workstations that are serviced by a DB2 for OS/2 remote server containing the DataRefresher database. You can install DataRefresher directly from the MVS system, or transfer DataRefresher from the MVS host system to a LAN and then install from there.

The recommended process is to:

1. Customize the connection between the workstation and the MVS host system.
   Use CM/2 on the workstation to supply APPC API values that allow your workstation to communicate with the network station where the MVS host system is located. Refer to Chapter 6, “Configuring APPC for DataRefresher” on page 40 for information on customizing the APPC connection.

2. Download the PWS installation tool. Make sure that the 3270 emulator session you use to access the MVS host system from your workstation is configured to receive both binary and text files. Refer to “Downloading DataRefresher” on page 80 for information on how to set up your system and receive DataRefresher files.

3. Install the DataRefresher database and code.
   You must install the database before you install the code.
• If you are installing DataRefresher on a single independent workstation, you can install both the database and the code simultaneously.

• If you are installing DataRefresher on several workstations connected to a LAN, you need to install the code on each workstation where DataRefresher is used.

Refer to “Installing DataRefresher” on page 81 for information on how to install DataRefresher onto a workstation or in a multiuser environment.

4. Configure the DataRefresher database using the DVRMAINT tool. Refer to DataRefresher OS/2 User’s Guide Chapter 11, “Customizing Your DataRefresher Database”.

To help you gather the information necessary for installation, use the worksheets provided in Chapter 3, “Preparing for Installation” on page 13. Also refer to Part 3 (Chapter 9 through Chapter 11) of the DataRefresher OS/2 User’s Guide for more details.

---

### Downloading DataRefresher

To download DataRefresher you must:

1. Set up the system.
2. Receive the files.

This section explains these steps in detail.

### Setting Up the System

To set up the system:

1. Choose names for directories on the workstation where the following files will reside:
   
   **.EXE files** Executables
   **.DLL files** Dynamic link libraries
   **.HLP files** Help files

   You can put all of the files in one directory, or you can put them in separate directories. The examples in this section use one directory, C:\DVRDIR, for all the files. However, if you choose to use separate directories, you might use directory names like:

   DVRDIR\EXE Executable files
   DVRDIR\DLL DLL files
   DVRDIR\HLP Help files

2. Create the directory where the executables will reside (.EXE files). You will download the installation file, INSTALL.EXE, to this directory later.

3. Update CONFIG.SYS so that:
   
   • It includes the statement, SET RESTARTOBJECTS=NO.
   • The PATH variable includes the name of the directory where the executables will reside.
   • The LIBPATH statement includes the name of the directory in which the DLLs will reside.

4. Reboot your workstation.
Receiving the Installation Files

To receive the files:

1. Log on to the MVS host system using a 3270 emulation session. Ensure that you are in the TSO command processor option, and ensure that the command line is ready to receive OS/2 commands.

2. In an OS/2 window type one of the following commands from the new directory:
   
   For the English version of DataRefresher:
   
   RECEIVE drive:\directory\INSTALL.EXE b: 'hlq.DVRPWSE(INSTALLE)'
   
   For the Japanese version of DataRefresher:
   
   RECEIVE drive:\directory\INSTALL.EXE b: 'hlq.DVRPWSE(INSTALLK)'
   
   Where:
   
   drive:\directory Is the location on the workstation where the INSTALL.EXE file will be stored.
   
   b Is the name of the 3270 emulation session where you logged on to TSO, for example, session B
   
   hlq Is the high-level qualifier on the MVS host system, for example, DVR110
   
   If you use the example values, the command is:
   
   RECEIVE C:\DVRDIR\INSTALL.EXE B: 'DVR110.DVRPWSE(INSTALLE)'
   
   The INSTALL.EXE file is now downloaded to the directory you named.
   
   If you downloaded each of the files to different directories using the sample names listed in “Setting Up the System” on page 80, the RECEIVE command is:
   
   RECEIVE C:\DVRDIR\EXE\INSTALL.EXE B: 'DVR110.DVRPWSE(INSTALLE)'

Installing DataRefresher

After you successfully download the files, you can install them. To install the files:

1. Change to the directory where the INSTALL.EXE file is now stored by typing:
   
   C:\DVRDIR
   
   (or whatever you named the directory)
2. Type INSTALL to run the installation tool.

   The Installation window is displayed, as shown in Figure 43.

   ![Installation Window](image)

   *Figure 43. Installation Window*

3. Select the **MVS host system** radio button.

4. Select **Continue**.

   The Install from MVS host window is displayed, as shown in Figure 44 on page 83.
5. Supply the following information in the fields on the window:

   - **Host session** Select the letter representing the 3270 emulator session that you plan to use to download the DataRefresher files.

   - **Data set name** Supply the MVS high-level qualifier or qualifiers for the data set DVRPWSE containing the DataRefresher code. For example, if the filename is DVR110.DVRPWSE, the high-level qualifier is DVR110.

   - **Destination** Supply the name of the workstation drive and directory where you want to store the installation utility and the DataRefresher code.

6. Select **OK**.

   The Install – progress window is displayed, and then the Instructions window is displayed, as shown in Figure 45 on page 84.
7. Select **Continue**.

The Installation and Maintenance window is displayed. You can either install the DataRefresher code directly onto a workstation, or you can transfer the code to a server on a LAN.

8. Select a choice:

**DataRefresher**

To install onto a workstation. If you are installing DataRefresher onto a workstation from a LAN, select **DataRefresher**.

**DataRefresher (LAN version)**

To install onto a server on a LAN. The code is transferred to the LAN server and stored, but is not installed there. Later you can use the stored code to install DataRefresher from the LAN server onto other workstations or server machines.

9. Complete the installation steps. If you are installing onto a workstation, go to “Installing onto a Workstation.” If you are installing onto a server on a LAN, go to “Installing DataRefresher in a Multiuser Environment” on page 90.

### Installing onto a Workstation

This section describes how to install DataRefresher onto a workstation.

1. Follow the installation instructions as described in “Installing DataRefresher” on page 81.
2. From the **Action** menu, select **Install**, as shown in Figure 46.

![Installation and Maintenance Window](image)

*Figure 46. Installation and Maintenance Window*

The Install window is displayed, as shown in Figure 47.

![Install Window](image)

*Figure 47. Install Window*

3. Select the **Update CONFIG.SYS** check box to indicate that you want the CONFIG.SYS file on your workstation to be updated with the information required to run DataRefresher. The following paths will be changed in the CONFIG.SYS:
   - LIBPATH
   - SET HELP
   - SET PATH

   If you deselect this option, an alternative CONFIG.SYS file will be created with the appropriate values and stored on your workstation.

4. Select **OK**.

   The Install – directories window is displayed, as shown in Figure 48 on page 86.
5. Select all of the components you want to install:

- **DataRefresher Database**: Select this item if you want to install the database.
- **DataRefresher Client code**: Select this item if you want to install the DataRefresher code.
- **DataHub Integration code**: Select this item if you want to use DataHub to access DataRefresher.

**Note**: Integrating DataRefresher with DataHub is not required. Both products require significant amounts of memory, and the combined usage can cause slower response time.

6. Specify the target directories where you want the components to be stored:

- **DLL target directory**: This directory will be added to the LIBPATH statement in your CONFIG.SYS
- **Work target directory**: This directory will be added to the SETPATH statement in your CONFIG.SYS
- **Help target directory**: This directory will be added to the SET HELP path in your CONFIG.SYS

It is recommended that you use the same target directory for all components.
7. Select **Install**.

The Install – progress window is displayed, as shown in Figure 49.

![Install - progress window](image)

**Figure 49. Install – Progress Window**

It takes approximately 30 minutes to download the files. If you are installing the database component, the Create DataRefresher Database window is displayed during the procedure, as shown in Figure 50.

![Create DataRefresher Database window](image)

**Figure 50. Create DataRefresher Database Window**
8. If you are installing the database component:
   a. Supply the following information in the fields on the Create DataRefresher Database window:

   **Database name**  The physical name for the DataRefresher database. The alias for the database is always set to DVRSYSDB. You cannot have an existing database with this name.

   **Drive**  The workstation drive where the database will be created, for example, C:

   b. Select **OK**.

   The **Progress log** provides a report while the DB2 for OS/2 database is being created, as shown in Figure 51.

   ![Create DataRefresher Database Window](image)

   **Figure 51. Create DataRefresher Database Window, during Database Creation**

   When the database has been created, the Install – progress window, as shown in Figure 49 on page 87 is re-displayed. When the files have all been downloaded, the Catalog DataRefresher Remote Database window is displayed, as shown in Figure 52 on page 89.
You must catalog the database before the code can be bound to it.

c. Select the **Local** radio button if you are installing both the database and the DataRefresher code onto a workstation.

d. Select **OK**.

The Install – progress window is then re-displayed while the code is binding to the database. When this process is complete the Installation and Maintenance window is re-displayed, as shown in Figure 46 on page 85. This window indicates that the installation procedure is complete.

9. Select **Close** from the system menu to close the Installation and Maintenance window.

10. Select **Exit** to close the installation tool.

After successfully completing your DataRefresher installation, customize the DataRefresher database using the DVRMAINT tool. For more information refer to *DataRefresher OS/2 User's Guide* Chapter 11, “Customizing Your DataRefresher Database”.

---

**Figure 52. Catalog DataRefresher Remote Database Window**

- **Local**
- **Remote**

Database name (Remote)

Remote Workstation name

Server name

Adapter

[OK] [Cancel] [Help]
Installing DataRefresher in a Multiuser Environment

You can install DataRefresher on a LAN server so that several users can access the DataRefresher control database simultaneously.

To install DataRefresher in a multiuser environment you need to:

- Download DataRefresher from the MVS host system to a LAN server.
- Install the DataRefresher database component on a DB2 for OS/2 server workstation.
- Install the DataRefresher code component on each workstation where DataRefresher is used.

This section describes these steps.

Downloading DataRefresher to a LAN

To download DataRefresher to the LAN:

1. Follow the installation instructions as described in “Installing DataRefresher” on page 81.

2. Select **DataRefresher (LAN version)** from the Installation and Maintenance window, shown in Figure 53.

![Installation and Maintenance Window](image)

*Figure 53. Installation and Maintenance Window*

2. Select **DataRefresher (LAN version)** from the Installation and Maintenance window, shown in Figure 53.
3. From the **Action** menu, select **Install**.

   The Install – directories window is displayed, as shown in Figure 54.

![Install - directories](image)

Figure 54. Install – Directories Window (LAN Version)

4. Select **LAN drive files**.

5. Specify the LAN drive and directory where you want to store the DataRefresher files in the **LAN destination path** field.

6. Select **Install**. The Install – progress window is displayed, as shown in Figure 49 on page 87, and the files are then transferred to the LAN drive.

When the download procedure is complete, install the DataRefresher database on a server, and then install the code onto one or more workstations.

**Installing the Database onto a Server**

To install the database onto a server machine attached to the LAN:

1. Type **INSTALL** to run the installation tool.

2. Supply the required information on the windows that are displayed, until the Install – directories window is displayed, as shown in Figure 48 on page 86.

3. Select **DataRefresher Database** and specify your target directories.
4. Select **Install**. The database is created, as described in “Installing onto a Workstation” on page 84. When the database is created and ready to be catalogued, the Catalog DataRefresher Remote Database window is displayed, as shown in Figure 55.

![Catalog DataRefresher Remote Database Window](image)

**Figure 55. Catalog DataRefresher Remote Database Window, with Values for a Remote Server**

5. Select the **Remote** radio button.

6. You also need to supply the following information:
   - The name of the database
   - The name of the workstation where the code is installed
   - The name of the server machine

7. Set the **Adapter** field to 0.

8. Select **OK**.

   The Install – progress window is then re-displayed while the code is binding to the database. When this process is complete, the Installation and Maintenance window is re-displayed, as shown in Figure 46 on page 85. This indicates that the installation procedure is complete.

9. Select **Close** from the system menu to close the Installation and Maintenance window.

10. Select **Exit** to close the installation tool.

   The database is now installed on the server. Next, you will install the code onto one or more workstations.
Installing from a LAN to a Workstation

You can install DataRefresher onto your workstation in a LAN environment provided DataRefresher code was downloaded from the host and stored on the LAN server and the DataRefresher database is already installed on a server machine.

To install DataRefresher onto a workstation using code stored on a LAN server:

1. Create a directory on the workstation where you can store the DataRefresher code, for example, C:\DVRDIR.

2. Update the LIBPATH statement in your CONFIG.SYS file with the new path and directory and then reboot your workstation.

3. Go to the LAN drive and directory where the DataRefresher code is stored.

4. In an OS/2 or DOS window, type the following command from the LAN directory:

   INSTALL /S:l:\landir

   where:

   l:\landir Is the location drive and directory path on the LAN where the DataRefresher files are stored

   The Installation window is displayed, as shown in Figure 43 on page 82.

5. Select the Drive (Diskette or LAN) radio button and select Continue. The Installation and Maintenance window is displayed, as shown in Figure 53 on page 90.

6. Select DataRefresher.

7. From the Action menu, select Install. The Install window is displayed, as shown in Figure 47 on page 85.

8. Select the Update CONFIG.SYS radio button to indicate that you want the CONFIG.SYS file on your workstation to be updated with the information required to run DataRefresher.

9. Select OK.

   The Install – directories window is displayed, as shown in Figure 48 on page 86.

10. Select the components you want to install and specify the target directories where you want the DataRefresher code to be stored.

11. Select Install.

   The Install – progress window is displayed, as shown in Figure 49 on page 87.

After successfully completing your DataRefresher installation, customize the DataRefresher database using the DVRMAINT tool. For more information refer to the DataRefresher OS/2 User's Guide, Chapter 11, “Customizing your DataRefresher Database.”
Installing DataRefresher in Unattended Mode

You can simplify the installation procedure by performing it in unattended mode. To perform this type of installation you need a response file containing all the installation values. The response file must contain the required values before you can use it. The file provides all the required information so you do not need to use the windows in the installation tool.

This method is appropriate if several users need to install DataRefresher on their workstations. A LAN coordinator, or other central person, can edit the response file and supply the required values.

To perform an unattended installation:

1. Go to the directory on the LAN where the DataRefresher files are stored. These files are transferred from the MVS host to the LAN during the DataRefresher LAN installation.

2. In an OS/2 or DOS window type the following command from the new directory:

   `CIDINST drive:\directory logfile`

   Where:

   - `drive:\directory` is the location on your workstation where you want to store the DataRefresher files
   - `logfile` is a name you specify for the log file that will be created by the installation procedure
Appendix A. Applying Service Upgrades to DataRefresher OS/2 (PWS)

Service upgrades for DataRefresher OS/2 are distributed as MVS SMP/E installable program temporary fixes (PTF). After a PTF is received and applied on the MVS system, the DataRefresher OS/2 (PWS) installation tool is used to download and install the fixes on the workstation.

To download and install fixes to DataRefresher OS/2:
1. On MVS, ensure that you have an active TSO session in native mode or at the TSO command option of ISPF.
2. On the workstation, ensure you are in the drive and directory where DataRefresher is installed and the upgrades are to be applied.
3. From the workstation, type install to invoke the installation tool.
4. From the Installation window, select the MVS Host system radio button and select Continue.
5. Specify the host session ID, the DataRefresher MVS high-level qualifier, and the drive and directory under which DataRefresher is installed.
   The installation tool downloads any required catalog and package files from the MVS data set 'hlq.DVRPWSE'.
6. Select DataRefresher.
7. From the Action menu, select Update.
   The installation tool downloads any changed parts and performs any actions required to complete the upgrade.
8. Exit the installation tool.
Appendix B. Removing DataRefresher from a Workstation

The installation tool provides a delete facility for removing DataRefresher from a workstation.

To remove DataRefresher:

1. Open the CONFIG.SYS file for your workstation and make sure it contains the following command:

   SET RUNWORKPLACE C:\OS2\PMSHELL.EXE

2. Go to the directory on your workstation where the installation tool is stored.

   If you installed DataRefresher as part of a multiuser installation you need to receive the installation tool from the MVS system as described in Chapter 7, “Downloading and Installing DataRefresher OS/2 (PWS) on Your Workstation.”

3. Type INSTALL to open the tool.

   The Installation window is displayed, as shown in Figure 43 on page 82.

4. Select the MVS host system radio button.

5. Select Continue and then select OK.

   The Install – progress window is displayed, and then the Instructions window is displayed, as shown in Figure 45 on page 84.

6. Select Continue.

   The Installation and Maintenance window is displayed, as shown in Figure 46 on page 85.

7. Select DataRefresher.

8. From the Action menu, select Delete.

   The Delete window is displayed, as shown in Figure 56 on page 97.
9. From the list box, select the components you want to delete and then select Delete.
The Delete – progress window is displayed, as shown in Figure 57, and the components are removed.

![Delete – progress window](image)

Figure 57. Delete – Progress Window

When the components are deleted, a message is displayed, as shown in Figure 58.

![Installation and Maintenance Message](image)

Figure 58. Installation and Maintenance Message

The database is not deleted.

10. Optional: Delete the database. Use the DB2 Query Manager tool to remove the database from your workstation. If you intend to re-install DataRefresher later, make sure your old database is deleted first.

11. Re-boot the machine.
Appendix C. Migrating from DXT to DataRefresher

This appendix provides information on how to migrate from DXT to DataRefresher. You must finish installation DataRefresher before migrating from DXT to DataRefresher.

Before Removing DXT

Before you delete or overwrite any previous release of DXT, make a backup copy of the FDTLIB for that release. If you later decide to re-install DXT, use the copy of the old FDTLIB, and follow the installation procedures given in the appropriate DXT program directory.

Migrating from DXT Version 2 Releases 4 and 5

Migration from DXT to DataRefresher should be performed by a system programmer.

Many components of DXT Version 2 Releases 4 and 5 are compatible with Version 1. However, to use DXT dialogs data sets and exit routines, you need to:

- Save or rename your existing DXT dialogs user data sets.
- Recompile and link-edit the Assembler exit routine, DVRXAACX. In addition, link-edit any Accounting exit routines written to work with DXT to include the new control blocks.
- Recompile and link-edit your Map Capture exit routines to include the new control blocks.

If your site is planning to extract data from an IMS/VS DL/I database, a VSAM data set, a physical sequential data set, or a data source accessed by a GDI exit routine, you need two permanent data sets:

- File description table library (FDTLIB)
- Extract request library (EXTLIB)

The FDTLIB contains the submitted data descriptions and the EXTLIB contains the submitted extract requests. Neither the FDTLIB or EXTLIB should reside on a DASD shared by multiple processors, unless Global Resource Serialization is used.

The FDTLIB and EXTLIB are created by installation verification procedures. The installation procedures provide the control statements necessary to create both of these libraries. For information on how to define single or multiple FDTLIBs or EXTLIBs after installing DataRefresher, refer to the DataRefresher Administration Guide, Chapter 9, “Setting Up FDTLIB and EXTLIB Data Sets.”
Summary of Migration Steps

In order to migrate, you must:

1. Select an FDTLIB/EXTLIB pair to be migrated.
2. Create a DataRefresher World for this pair using DVRMAINT.
3. In DataRefresher, register the IMS PSBs, IMS databases, VSAM data sets and PSDSs for which you want to migrate sources and extract requests from the FDTLIB/EXTLIB pair. Also register any exit routines that are used by objects in the FDTLIB/EXTLIB pair.
4. Create import files at the host that will ultimately be downloaded to the workstation and used to create DataRefresher Source, Extract and Exit objects in the DataRefresher database.
   a. Create the initial import files by using CLIST DVRXLMG0 to punch the required information from the FDTLIB/EXTLIB pair.
   b. Link the objects described in the files to the objects you registered in Step 3 above. Queries and forms are provided to extract the information you require from the DataRefresher database.
5. Use the RECDB.CMD command file to download the completed import files to the workstation.
6. Use the IMPORT.CMD command file to import the data into your DataRefresher database.

The Migrate Utility

The Migrate utility runs on the host and workstation.

The host uses the DataRefresher PUNCH command to punch out the contents or individual objects from the specified FDTLIB and EXTLIB pair to be migrated. The punch data is then parsed to extract the data to be imported into the DataRefresher database. This procedure produces 11 files. The files contain some of the data to import. Other information, such as the IMS PSB, is not in the DXT libraries. You must add this information to the files before you do the import step. You can use either the workstation or the host to add the information.

The workstation uses the RECDB.CMD command to transfer the files from the host to the workstation and the IMPORT.CMD command to import the data into the DataRefresher database.

Things to Do Before Running the Migrate Utility

Before you run the Migrate utility, you must complete these steps:

- Select the FDTLIB and EXTLIB pair to migrate, or individual objects in the FDTLIB AND EXTLIB to migrate.
- Register in the appropriate worlds any IMS Databases, IMS PSBs, VSAM data sets, and PSDSs that were used to build the DXTFILES and DXTPSBS in the FDTLIB you are migrating.
- Import the following queries and forms into the Query Manager, and run them. The queries and forms were installed on your workstation when DataRefresher
was installed. The reports from these queries and forms provide useful information on the existing state of the DataRefresher database.

**DXTWORLD.QRY, DXTWORLD.FRM**  
Produces a report from which you can choose the target DataRefresher World for the FDTLIB and EXTLIB.

**USERWRLD.QRY, USERWRLD.FRM**  
Produces a report from which you can choose the target User Defined World for any EXITs referenced by the DXTFILEs, DXTPSBs and Extract Requests in the FDTLIB and EXTLIB.

**IMSPSB.QRY, IMSPSB.FRM**  
Produces a report from which you can choose the IMS PSB, IMS PCB and PSBLIB which correspond to each DXTPSB being migrated.

**VSAMPSDS.QRY, VSAMPSDS.FRM**  
Produces a report from which you can choose the VSAM data set or physical sequential data set corresponding to each DXTFILE being migrated.

---

**Migrating DXT 2.5 Data Descriptions to DataRefresher**

To migrate your DXT 2.5 data descriptions to DataRefresher, complete the following five steps.

**Step 1 - Edit the DVRXLMG0 CLIST**

The DVRXLMG0 CLIST contains information about what is to be migrated and passes this information to the Migrate utility.

The Migrate utility migrates DXT 2.5 libraries, FDTLIB and EXTLIB. In doing so, it assumes that the EXTDATA keyword in an extract request uses a data set name. If your extracts were saved using a DDNAME, you must provide a data set name to the data file produced by the Migrate utility before you use the import utility to update the DataRefresher database.

This CLIST is in `hlq.DVRINCLS`, where the high-level qualifier (`hlq`) is the same as the high-level qualifier for DataRefresher. Edit this CLIST with information about what you want to migrate. Figure 59 on page 102 shows the DVRXLMG0 CLIST.
Edit the CLIST by entering the following information:

**hostname = 'MVS'**
Replace MVS with the name of the host from which you are migrating. Ensure that the host name is the same as that used when creating the host in the DataRefresher database on the workstation. The name can be up to eight characters long.

**fdtlib = 'DVR250.FDTLIB'**
Replace DVR250.FDTLIB with the data set name of the FDTLIB to be migrated.

**extlib = 'DVR250.EXTLIB'**
Replace DVR250.EXTLIB with the data set name of the EXTLIB to be migrated.

**hlq = 'DVR110'**
Replace DVR110 with the high-level qualifier for the data sets to be created by the Migrate utility. These data sets will contain the data to be transferred to the workstation and imported into the DataRefresher system database.

**uimload = 'DVR110.DVRLOAD'**
Replace DVR110.DVRLOAD with the DataRefresher Load Library if your DataRefresher Load Library name is other than the default.

**data_refresher_world = '0000000000'**
Replace 0000000000 with the identifier of DataRefresher World to which the objects are to be migrated. The DataRefresher World identifier can be found on the Query Manager report from the DXTWORLD.QRY query in the column headed “DataRefresher World.” See “Things to Do Before Running the Migrate Utility” on page 100 for Query Manager report information.

**user_defined_world = '0000000000'**
Replace 0000000000 with the identifier of the User Defined World to which EXIT objects will migrate. The User Defined World identifier can be found on the Query Manager report from the USERWRLD.QRY query in the column headed “User Defined World.” See “Things to Do Before Running the Migrate Utility” on page 100 for Query Manager report information.
Objects to be migrated
You can migrate any of these objects:

- DXTPSBs
- DXTFILEs
- DXTVIEWs
- DATATYPEs
- Extract Requests

The CLIST DVRXLMG0 migrates the complete contents of the FDTLIB and all the extracts awaiting execution in the EXTLIB. Figure 60 shows how you specify all objects for migration.

```
/* Set up objects to be migrated */
dxpsb = 'DXTPSB=*'
dxfile = 'DXTFILE=*'
dxview = 'DXTVIEW=*'
datatype = 'DATATYPE=*'
extid = 'EXTID=*'
```

**Figure 60. Example of Specifying All Objects for Migration**

You can exclude objects from migration by removing the asterisk in the statement. The example in Figure 61 migrates DXTFILEs only.

```
/* Set up objects to be migrated */
dxpsb = 'DXTPSB='
dxfile = 'DXTFILE=*'
dxview = 'DXTVIEW='
datatype = 'DATATYPE='
extid = 'EXTID='
```

**Figure 61. Example of Excluding Objects from Migration**

You can migrate specific objects by specifying the name of the object. The example in Figure 62 migrates all DXTFILEs and DXTVIEW VIEW1.

```
/* Set up objects to be migrated */
dxpsb = 'DXTPSB='
dxfile = 'DXTFILE='
dxview = 'DXTVIEW=VIEW1'
datatype = 'DATATYPE='
extid = 'EXTID='
```

**Figure 62. Example of Specifying Specific Objects for Migration**

**Step 2 - Run the Migrate Utility**
To run the Migrate utility, you can either:

- Enter TSO EX ‘HLQ.DVRINCLS(DVRXLMG0)’ on the ISPF command line.
- Enter EX ‘HLQ.DVRINCLS(DVRXLMG0)’ from the TSO Command Processor, Option 6 on the ISPF Primary Options Menu.

The Migrate utility displays progress messages to indicate its status. Upon successful completion, the Migrate utility produces the following data sets:
Where hlq is the value entered in DVRXLMG0.

**Step 3 - Add Required Data to the IMPORT Files**

All the information required to complete the tables is not in the FDTLIB and EXTLIB. You must provide some information. For example, the IMSPSB is not in the DXT libraries although it is used to associate the DXTPSBs and DXTFILEs with the IMS databases and VSAM/PSDS data sets. You cannot import data into the DataRefresher database until you provide the information because of the referential integrity constraints.

Table 22 shows the files that require additional data, what data they require, and the column positions in which to add the data. See “Things to Do Before Running the Migrate Utility” on page 100.

<table>
<thead>
<tr>
<th>File Name</th>
<th>Data Required</th>
<th>Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>hlq.PC.DXTPCB</td>
<td>IMSPSB</td>
<td>73 to 80</td>
</tr>
<tr>
<td></td>
<td>IMSPCB</td>
<td>82 to 86</td>
</tr>
<tr>
<td></td>
<td>PSB_LIB_NAME</td>
<td>88 to 131</td>
</tr>
<tr>
<td>hlq.PC.DXTFILE</td>
<td>VSAM_PSDS_DB</td>
<td>88 to 97</td>
</tr>
</tbody>
</table>

**Step 4 - Transfer the Files to the Workstation**

Run the command file, RECDB.CMD, on the workstation to download the data sets produced by the Migrate utility.

To transfer the files to the workstation:

1. Switch to the DataRefresher directory on the workstation.
2. On your MVS session, go to the TSO Command Processor Option. Select Option 6 from the ISPF Primary Options Menu to display the TSO command processor panel.
3. At the workstation, run the RECDB.CMD command file to transfer the files from your MVS session to the workstation. You can specify values for the following optional parms:
   - /D=dir The directory to which the import files will be transferred. The default is D:\MIGRATE.
   - /A=qualifier The high-level qualifier of the files to transfer. The default is DVR110.
The host emulation session to use for the file transfer. The default is A.

Figure 63 shows how to import files to directory C:\DR\MIGRATE with the default qualifier and use CM/2 session B for the transfer.

RECD /D=C:\DR\MIGRATE /A=DVR110 /S=B

Figure 63. Example of the RECD Command

If you prefer to edit the files from the workstation, transfer the files first, then perform the edit step (Step 1).

**Step 5 - Import the Files**

The order in which the files are imported is important because of the referential integrity constraints that exist between the tables. The command file, IMPORT.CMD, imports files in the correct order into the DataRefresher database. The IMPORT.CMD file was installed on your workstation when DataRefresher was installed.

To invoke the IMPORT command:

1. Switch to the DataRefresher directory on the workstation.
2. Run the IMPORT.CMD command file to import the data. Specify values for the following parameters:

   `/D=dir` The directory from which the data will be imported. The default is D:\MIGRATE.

   `/A=qualifier` The qualifier used for the tables in the database. The default is DVR110.

   `/N=name` The name of the database. The default is DVRSYSDB.

   `/M=messagefile` The name of the file to which the Import command sends messages. The default is IMPORT.MSG.

The IMPORT.CMD command file uses a file called IMPORT.DOC, which contains information about the data to be imported, and about the tables and the column positions. IMPORT.CMD should reside in the same directory as the command file and should not be changed.

The IMPORT.CMD command file calls the DB2 for OS/2 IMPORT API. The API concatenates messages for each imported file into the message file specified.

**Migrate Utility Error Conditions**

Migrate utility error conditions can occur at either the host or the workstation, and could result in the migration not completing successfully.

**Host Error Conditions**

If the User Input Manager (UIM) finishes with a return code of 8 or higher at the host, the Migrate utility will stop processing. The temporary data sets allocated for running the UIM will not be deleted. These are called:

```
hlq.MIGRATE.DXTIN
hlq.MIGRATE.DXTPRINT
```
The Migrate utility also stops processing if an error is detected while allocating, reading, writing, or deallocating files.

The messages in the DXTPRINT data set will indicate why the UIM did not complete successfully. Use these messages to diagnose the problem, correct the error condition, and then retry the procedure.

**Workstation Error Conditions**

The Migrate utility on the workstation concatenates messages from the DB2 for OS/2 IMPORT API into one file (the default is IMPORT.MSG). Messages can be produced during import for a number of reasons:

- If duplicates are found.
- If the data added to the import files does not match the registered IMS databases or VSAM/PSDS data sets.
- If any views or extract requests that are being migrated are obsolete. That is if the DXTFILEs or DXTPSBs/DXTPCBs (views), or DXTVIEWs (extracts) on which they are based, do not exist.

Use the error messages to diagnose the problem, correct the error condition, and then retry the procedure.
Appendix D. How to Save and Reuse Job Files Presented by the Installer

You can use the Installer to save and reuse the job files you modified during DataRefresher installation. After modifying a job file, you must copy the contents of the file to a new member of the PDS. To use the modified file, you must then copy the new member back to the old member file.

To modify and save job files:

1. From any Installer panel, place your cursor on the name of the operation that you want to modify and press the F5 key. The job appears, with the data set name appearing in the status line.
2. Edit the job.
3. Type CREATE and the name that you want to give the modified job on the command line. Do not press Enter.

   It is recommended that you change the first three characters of the original job file name to create a new file name. For example, if you made modifications to the DVREJURC job, change the characters DVR to something different but leave the rest of the file name the same: HPAEJURC.
4. Before pressing Enter, enter CC at the first and last line of the job file to indicate that you want the entire file copied.
5. Press Enter. The modified job file is copied to a new member.

At this point, you can perform other tasks in the Installer or exit the Installer.

To use modified job file:

1. Invoke the Installer.
2. Go to the panel that lists the operation you want.
3. Move the cursor to the operation and press F5. What appears on the panel is the original unmodified job.
4. Make note of the member name in the original job file.
5. Press F3 to release the data set so that the copy operation can be done.
6. Open a second ISPF session on MVS so that both the Installer panel in ISPF and the second ISPF session are open on your screen.
7. Access the copy utility in the second ISPF session (option 3.3).
8. Complete the required fields (including the Partition field: YES) to copy the new job file to the original data set.
10. Return to the Installer panel.
11. Press F5 to activate the new job file.
12. Press F3 to exit the panel.
13. Press F7 to submit the job.
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPC</strong></td>
<td>advanced program-to-program communications</td>
</tr>
<tr>
<td><strong>APPN</strong></td>
<td>advanced peer-to-peer networking</td>
</tr>
<tr>
<td><strong>ASCH</strong></td>
<td>asynchronous scheduler</td>
</tr>
<tr>
<td><strong>CPI-C</strong></td>
<td>common programming interface for communications</td>
</tr>
<tr>
<td><strong>CM/2</strong></td>
<td>Communications Manager for OS/2</td>
</tr>
<tr>
<td><strong>GDE</strong></td>
<td>General Data Extract</td>
</tr>
<tr>
<td><strong>GUI</strong></td>
<td>graphical user interface. DataRefresher OS/2 workstation end-user interface to the General Data Extract Feature</td>
</tr>
<tr>
<td><strong>JLF</strong></td>
<td>The Japanese Language feature supports the use of the dialogs.</td>
</tr>
<tr>
<td><strong>PWS</strong></td>
<td>personal workstation. DataRefresher OS/2 workstation end-user interface to the General Data Extract Feature</td>
</tr>
<tr>
<td><strong>SMP/E</strong></td>
<td>System Modification Program Extended</td>
</tr>
<tr>
<td><strong>UCF</strong></td>
<td>Upper Case Feature</td>
</tr>
</tbody>
</table>

The Japanese Language feature supports the use of the dialogs. Personal workstation. DataRefresher OS/2 workstation end-user interface to the General Data Extract Feature. System Modification Program Extended. Upper Case Feature. The Upper Case Feature is required to support display device with Katakana keyboards.
Bibliography

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this document.

DataRefresher-specific documents are:

- DataRefresher Version 1: Administration Guide, SH19-6995
- DataRefresher Version 1: Command Reference, SH19-6999
- DataRefresher Version 1: Diagnosis Guide, LY19-6386
- DataRefresher Version 1: Exit Routines, SH19-6998
- DataRefresher Version 1: An Introduction, GH19-6993
- DataRefresher Version 1: Licensed Program Specifications, GH19-9994
- DataRefresher Version 1: Messages and Codes, SH19-5000

Other related documents are:

- APPC Application Examples in MVS/ESA and OS/2, GG24-3819
- APPC and CPI-C Product Implementations, GG24-3520
- APPC/MVS Handbook for the OS/2 System Administrator, GC28-1133
- APPC Programming Considerations in MVS/ESA and OS/2, GG24-3818
- APPC System Definitions in MVS/ESA and OS/2, GG66-3224
- The Best of APPC, APPN, and CPI-C, CD-ROM SK2T-2013
- CPI-C Reference, SC26-4399
- Host Connection Reference, SC31-6170
- Multi-platform APPC Configuration Guide, GG24-4485
- MVS/ESA Application Development: Writing Transaction Programs for APPC/MVS, GC28-1121
- MVS/ESA Planning: APPC Management, GC28-1110
- Performance Considerations in an APPC/MVS Environment, GG66-3206
- SAA Common Communication Support Summary, GC31-6810
- Communications Manager/2 V1.1 Scenarios, SC31-6174
- VTAM Network Implementation Guide, SC31-6404
- VTAM Resource Definition Reference, SC31-6412
Index

A
abbreviations 108
acronyms 108
APPC
assistance 78
configuring for DataRefresher 40
connection requirements 6
conversation flow 72
debugging the connection 74
host configuration 43
information sources 77
performance 52
side information 40
software requirements 7
troubleshooting tools 74
working with DataRefresher 40
workstation configuration 52
authorization failure 36

B
Base feature
installing 29
overview 1

C
client code, DataRefresher 86
communication link 40
component identifiers for MVS, OS/2 and DataRefresher link 41
control table, installer 37
conversation flow, APPC 72
CPI-C side information 40

data set naming convention 35
database
creating during installation, DB2 for OS/2 88
installing DataRefresher's 86
DB2
software required 9
under MVS 4
defining LAN types 56
deleting
DataRefresher from workstation 96
DXT 99
DLC adapters, defining 56
double-byte character set (DBCS) data 2
downloading and installing DataRefresher components 79
procedure steps 80, 81
to a LAN 90
DVR110.DVRSAMPE library 24
DVRXLG0 CLIST, editing 101
DXT 2.5 data descriptions 101
DXT, re-installing 99

e
errors
migrating from DXT 105
using the Installer 38

features
DataRefresher OS/2 2
deciding which to install 3
General Data Extract 2
Installer and Base 1
MVS and VM 1
National Language 2
optional software 8
Relational Data Extract 2

G
General Data Extract feature
installing 30
overview 2
software requirements 8
g graphical user interface (GUI) 2

H
hardware requirements
MVS and VM 6
OS/2 6

I
IMPORT files, migrating from DXT 104, 105
IMS
software required 8
under MVS 3
installation
Base feature 29
DataRefresher OS/2 31
files 81
from LAN to workstation 93
General Data Extract (GDE) 30
installation (continued)

Installer 27
knowledge required 10
multiuser environment 90
National Language features (NLF) 32
on LAN server 90
on MVS 26
on OS/2 workstation 80
packaging 4
pre-installation tasks 26
re-installing DXT 99
Relational Data Extract (RDE) 32
removing from workstation 96
task overview 10
tips 35
unattended mode 94
installation files (PWS)
downloading 80
installing 81
Installer
installing 27
overview 22
unexpected errors 38
using 37

J
Japanese language 2
JCL, modifying 107
job name
  character length, Installer samples 36
  Installer default 36
  summary of installation jobs 33

L
LAN server, installing on 90
libraries, distribution and target 24
linkages, MVS to OS/2 41
LU 6.2, connection requirements 6

M
Migrate utility 100, 103
migrating
  DXT 2.5 data descriptions 101
  DXT to DataRefresher 99
  from DXT V2 99
  summary of steps 100
modifying job files 107
multiuser environment 90

N
naming convention, data set 35
National Language features (NLF)
  installing 32
  (continued)
  Kanji 3
  overview 2
  Uppercase 2
  NDF configuration file 69

O
optional software 8
ordering features 4
OS/2 end-user interface 2
OS/2 feature
  installing 31
  overview 2
  overview, product 1

P
packaging, features 4
performance, APPC 52
personal workstation (PWS) 2
prerequisites, hardware and software 6
publications 109

R
RACF 8
record format 35
Relational Data Extract feature
  installing 32
  overview 2
  software requirements 9
Relational Extract Manager (REM) 2
removing
  DataRefresher from workstation 96
  DXT 99
requirements
  environment 13
  hardware 6
  knowledge 10
  software 7
reusing job files 107

S
security for data 8
server, installing on 90
service upgrades, workstation 95
side information, CPI-C 40
SMP/E
  commands 23
distribution libraries 24
  overview 22
  sharing data sets 24
target libraries 25
SMPCS1 data set 23
SNA
  defining connections  59
  defining features  63
  defining local nodes  57
software requirements  7
system requirements
  Base feature, optional  8
  MVS and support program  7
  OS/2  7
  VM  7

T
  task overview  10
tool
    APPC troubleshooting  74
    Installer  22
    SMP/E  22
trademarks  viii
transaction program (TP) profile  46
transfer files to workstation, when migrating from
  DXT  104

U
  unattended installation, workstation  94
utility
    Administration Batch  49
    Data Reformat  2
    Migrate  100

V
  VM DataRefresher, requirements  9

W
  worksheets
    GDE feature for MVS  17
    MVS  14
    MVS Base feature  15
    RDE feature for MVS  18
    Uppercase and Kanji features for MVS  19
    workstation  20
workstations
  downloading and installing DataRefresher  79
  installing DataRefresher  84
  installing from a LAN  93
  set up for installation  80