Rocket Model 204 Dictionary/204 and Data Administration Guide

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About this Guide

The *Rocket Model 204 Dictionary/204 and Data Administration Guide* describes the role of Dictionary/204 in Model 204 database management and administration. It also describes the use of Dictionary/204 and its facilities in the administration of Model 204 application software, such as Workshop/204 and Access/204.

Audience

This book is for file managers, system managers, and others who need to understand Dictionary/204 and data administration.

A note about User Language and SOUL

Model 204 version 7.5 provides a significantly enhanced, object-oriented, version of User Language called SOUL. All existing User Language programs will continue to work under SOUL, so User Language can be considered to be a subset of SOUL, though the name "User Language" is now deprecated. In this guide, the name "User Language" has been replaced with "SOUL," or "SOUL (User Language)," except where the UI still uses User Language.

Model 204 documentation set

To access the Rocket Model 204 documentation, see the Rocket Documentation Library (http://docs.rocketsoftware.com/), or go directly to the Rocket Model 204 documentation wiki (http://m204wiki.rocketsoftware.com/).

Documentation conventions

This guide uses the following standard notation conventions in statement syntax and examples:

Convention	Description
TABLE	Uppercase represents a keyword that you must enter exactly as shown.
TABLE *tablename*	In text, italics are used for variables and for emphasis. In examples, italics denote a variable value that you must supply. In this example, you must supply a value for *tablename*.
READ [SCREEN]	Square brackets ([]) enclose an optional argument or portion of an argument. In this case, specify READ or READ SCREEN.
UNIQUE | PRIMARY KEY	A vertical bar (|) separates alternative options. In this example, specify either UNIQUE or PRIMARY KEY.

Convention	Description
TRUST | <u>NOTRUST</u>	Underlining indicates the default. In this example, NOTRUST is the default.
IS {NOT | LIKE}	Braces ({ }) indicate that one of the enclosed alternatives is required. In this example, you must specify either IS NOT or IS LIKE.
item ...	An ellipsis (. . .) indicates that you can repeat the preceding item.
item ,...	An ellipsis preceded by a comma indicates that a comma is required to separate repeated items.
All other symbols	In syntax, all other symbols (such as parentheses) are literal syntactic elements and must appear as shown.
nested-key ::= *column_name*	A double colon followed by an equal sign indicates an equivalence. In this case, *nested-key* is equivalent to *column_name*.
Enter your account: sales11	In examples that include both system-supplied and user-entered text, or system prompts and user commands, boldface indicates what you enter. In this example, the system prompts for an account and the user enters **sales11**.
File > Save As	A right angle bracket (>) identifies the sequence of actions that you perform to select a command from a pull-down menu. In this example, select the Save As command from the File menu.
EDIT	Partial bolding indicates a usable abbreviation, such as E for EDIT in this example.

1
Introduction to Dictionary/204

Dictionary/204 and data administration

This section addresses a critical question: Why use Dictionary/204 for data administration?

A few of the many reasons for using Dictionary/204 are noted and explained below:

• Dictionary/204 provides systemwide information about the entities in your DP environment. Only Dictionary/204 maintains this information.

For example, without using Dictionary/204, there is no way to determine which files exist in the Model 204 environment. Dictionary/204, however, can provide you with an online or printed list of all files, their maximum number of records, what procedures use those files, and many more of the files' attributes and relationships. Similarly, application programmers can query the dictionary about the particular procedures and files they are using.

For another example, without using Dictionary/204, there is no way to determine the relationship between files and procedures. Dictionary/204 not only provides you with the names of the procedures on the system, but can report on who updates those procedures, when they were last updated, what files they are stored in, which screens are used by the procedures, and many other attributes and relationships between procedures and other types of entities.

- Dictionary/204 enhances data integrity, for example, by *staging* files across sessions, which locks other users out of the "staged" file until all of one user's changes have been executed.

- Dictionary/204 reduces data redundancy by controlling the definition of database entities and by preventing duplicate entities.

- Dictionary/204 provides additional control over your database environment by providing a general Dictionary Administration facility that enables you to *extend* the dictionary to suit your changing needs.

- Dictionary/204 manages information about views, which are used by Workshop/204 facilities, such as Query/Update and Screen and Action Generator, and by products such as Access/204. Dictionary/204 also manages COBOL views for the reading of VSAM files in a Model 204 environment.

- Dictionary/204 provides a convenient user interface to simplify the tasks of data administration and data maintenance.

- Dictionary/204 provides menu-driven, fill-in-the-blank screens with PF keys to assist you when documenting your data.

- Dictionary/204 provides the convenience of *active* file definition, automatic file sizing, and the convenient setting of subsystem parameters and defaults.

Who uses Dictionary/204?

Dictionary/204 is useful to virtually any member of the data processing community, but particularly to dictionary and data administrators, file managers, system managers, and application programmers.

- Dictionary administrators determine the types of information maintained in the dictionary and who can access and update that information. If you need to maintain information about reports or programmers, an administrator can add those entity types to the dictionary, providing a template for describing REPORTs and USERs in dictionary entries.

- Data administrators provide better access to and control of data resources by using Dictionary/204 to help document data resources, to provide data definition standards, and to reduce data redundancy.

- File managers use Dictionary/204 to define information about Model 204 files and then to create the files and define the fields automatically.

- System managers use a convenient Dictionary/204 interface to create and maintain subsystem definitions for applications.

- Application programmers use Dictionary/204 to display information about subsystems and files and to store information about procedures and applications that use Model 204 data.

- Programmers can also use Dictionary/204 to define and modify views of the data for the design and testing of application prototypes.

- Access/204 administrators use Dictionary/204 to define and modify the views used by these products.

- Any Dictionary/204 user can submit ad hoc queries, using the Dictionary Reports facility, to examine information about reports, files, and other database entities, as well as information about their attributes and relationships.

Dictionary/204 facilities

Dictionary/204 provides five facilities for managing information about your data processing environment, as well as three facilities that manage the entities used by Rocket Software products other than Model 204. In addition to maintaining data about Model 204 entities, Dictionary/204 also manages information about the Workshop/204 and IIC products, and the VSAM interface to Model 204. The names of the eight Dictionary/204 facilities are shown in Figure 1-1 on page 4, on the main menu.

The remainder of this section discusses each facility in brief. The current Dictionary/204 release number is displayed at the top right.

Figure 1-1. Dictionary/204 main menu

```
Dictionary/204                    Main menu                     Release N.N

                    1. Dictionary Administration

                    2. Documentation and View Definition

                    3. Dictionary Reports

                    4. File Management

                    5. Subsystem Management

                    6. User Language Cross-Reference

                    7. Access/204 View Management



===>
1=HELp      2=          3=QUIt        4=          5=          6=
7=          8=          9=            10=         11=         12=
```
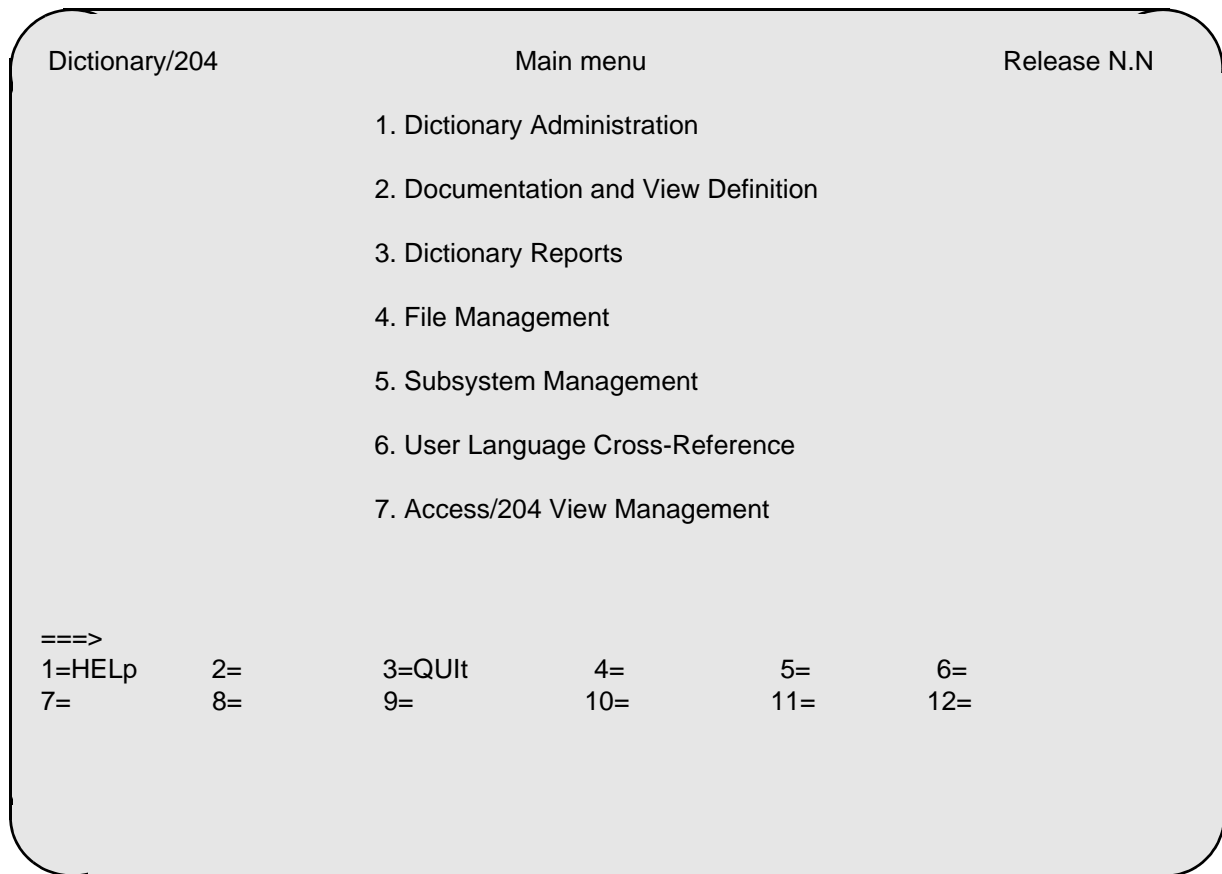
Note: Your menu might differ from this one, if you have not been defined as a user of all Dictionary/204 facilities, or if your site has not installed Access/204. (Options 6 and 7 on this screen are available only if their corresponding products are installed.)

Dictionary Administration

The dictionary administrator's responsibilities are described fully in the section "Dictionary/204 administration" on page 51. These responsibilities include defining the information to be maintained in the dictionary, establishing security and user privileges for Dictionary/204 accounts, adding user-written reports, and maintaining Dictionary/204 facilities. These tasks can be accomplished by using the Dictionary Administration facility.

The type of information that is maintained in the dictionary is controlled by the entity type definitions. By using this facility, the dictionary administrator can expand these definitions to include additional attributes and relationships for the standard entity types. Furthermore, the administrator can define new entity types to be added to the dictionary. The dictionary administrator provides the

templates for the dictionary entries, determining which attributes and relationships apply to the various types of entities.

The other capabilities of the Dictionary Administration facility are described in Chapter 6.

Documentation and View Definition

The Documentation facility is an interface for adding descriptive information to all dictionary entries. The Documentation facility also enables users to add new attributes and relationships to all entries.

This facility also defines entries for entity types that do not have a special defining interface: for example, views. Views are used by the Workshop/204 facilities Screen Painter, Screen and Action Generator, and Query/Update. Views are also used by Access/204. The Documentation facility can define views that are shared by all these facilities and products.

Dictionary Reports

Dictionary/204 provides an online interface for querying and reporting on the entries in the dictionary. The reports can include all the attributes and relationships for a given entry or entity type, or a list of all the entries for a given type of entity — all screens, all files, and so on. Reports can select entries based on name, entity type, relationship to a specified entry, or specific keywords.

File Management

The File Management facility actively defines Model 204 files. Users can specify the file's attributes and relationships using a convenient interface and can create the physical file definition automatically. File Management provides automatic file sizing and many other time-saving features.

If you have Model 204 physical files that are not defined in the dictionary, the DDGEN utility generates dictionary file and field entries from the physical file. The DDGEN utility is documented in "DDGEN and DDGENSET utilities" on page 55.

Subsystem Management

Dictionary/204 also maintains Model 204 application subsystem definitions. Subsystem Management enables the system manager to define a set of related files and procedures, including the data, procedures, and users associated with that subsystem. This interface maintains information in the Model 204 control file and in the dictionary.

The Subsystem Management interface can be invoked from the Dictionary/204 main menu. System manager privileges are required to use the Subsystem

Management facility, which is described in the Rocket Model 204 documentation wiki system management pages:

http://m204wiki.rocketsoftware.com/index.php/System_requirements_for_App lication_Subsystems#Overview_of_the_Subsystem_Management_facility

Access/204 View Management

The Access/204 View Management facility downloads view definitions stored in the dictionary to Access/204, so that Access/204 can use the views to generate reports.

Access/204 is a report writer that allows users to specify queries and reports without knowing file or field names or SOUL (User Language) syntax. These users can specify both ad hoc and stored queries and reports. The reports, based on predefined descriptions of the data (or views), can be sent to the terminal or to a printer.

Dictionary/204 terminology

In this manual, the term "Dictionary/204" refers to the collection of facilities that are used to perform data administration tasks. Dictionary/204 is a companion product to Model 204. The term "dictionary" (in lowercase) refers to a Model 204 database that contains information about files, fields, procedures, reports, users, and other types of *entities* in your database environment. Entities can also be thought of as database "objects" in your data processing environment. Entities can be of different types; FILE, FIELD, PROCEDURE, REPORT, and USER are only some of the possible types.

Dictionary/204 is installed with a set of standard *entity types*. These are defined in Appendix A and in "Defining view entries" on page 38.

Each entity in the environment is defined by an *entry* in the dictionary. The entry defines the entity in terms of its *attributes* (characteristics) and *relationships*. Each dictionary entry contains a complete description of a particular entity and its relationships to other entities. Relationships between entities are reflected in references between entries that correspond to the entities. *System* relationships (or references) and attributes are those controlled or used by Dictionary/204 or Workshop/204 facilities; *nonsystem* relationships and attributes comprise dictionary information supplied by dictionary users but not controlled or used by Dictionary/204 or Workshop/204 facilities.

See "Types of information in Dictionary/204" on page 7 for further discussion of these concepts. Also, see Figure 1-2 on page 9, which illustrates these distinct levels of information.

By convention, direct reference to particular entity types (FILE, FIELD, and so on), to attributes (NAME, NUMBER OF RECORDS), and the relationships (STORED IN) appear in uppercase throughout the book. When referred to in a generic sense, these terms appear in lowercase. Also, particular file names (PAYROLL), field names (AGE), and so on are in uppercase.

Note: *Entries* are dictionary definitions or descriptions of the *entities* and exist only in the dictionary. *Entities*, however, are "objects" in your data processing environment. The terms *relationships* and *references*, while not precisely synonymous, are virtually interchangeable.

Types of information in Dictionary/204

Dictionary/204 maintains standard definitions of such things as data, user accounts, and programs in a Model 204 environment. These definitions are maintained in dictionary entries with one entry for every named entity in the environment.

The basic dictionary terminology is defined in "Dictionary/204 terminology" on page 6, which refers to the following elements of the dictionary:

- Entries and entity types

- Attributes

- Relationships

- System and nonsystem data (attributes and relationships)

The sections that follow discuss these basic elements.

Dictionary entries

You can define a dictionary entry for each entity in your data processing environment, regardless of what type of entity it is. If you like, picture the Model 204 dictionary as similar to a printed and bound desktop dictionary. Like the Model 204 dictionary, these entries correspond to real-world entities, but they are not identical with them. They are rather a storehouse of information about the world.

In many respects, the Model 204 dictionary is more dynamic than a Webster's English language dictionary. It stores not only information about the characteristics (attributes) of entities, but also data about their relationships to one another. Your desktop dictionary, for example, contains entries that describe DOG, CAT, and MOUSE, but it does not tell you that a dog CHASES a cat, or that a cat CATCHES a mouse. But the Model 204 dictionary also defines all the relevant relationships between entities.

Secondly, the dictionary data can be queried in numerous ways, not simply alphabetically by object. You can obtain reports based on keywords, type of entity, relationships, and attributes.

To continue the metaphor of the desktop dictionary, the Model 204 dictionary is unique because it contains any number of blank pages on which you can define your own entities as the need arises. In addition to retaining information about files, views, procedures, and other standard entities, you can maintain entries about reports, terminals at your installation, departments, and so on. The

dictionary is open-ended (or *extensible*). You can also modify definitions to suit your needs.

Entities and entity types

Numerous types of entities might be useful in a data processing environment. Entities are classified by type to standardize the definitions of those entities. For example, all FILE type entities have a specific set of attributes that represent all the things you want to know about the files: NAME, NUMBER OF RECORDS, and many other characteristics. Entities of the type FILE also have a standard set of relationships to other entities (FIELDS, PROCEDURES, and so on) that need to be documented in the dictionary.

Figure 1-2 on page 9 illustrates two important points about entities, entity types, and entries in the dictionary:

- A one-to-one correspondence exists between entries in the dictionary and entities.

- Information (attributes and relationships) maintained in the dictionary entry is determined by the type of entity involved: FILEs have a predefined set of attributes and relationships, as do PROCEDURES, REPORTs, and all other types of entities. (Model 204 provides the entry template for standard types of entities; the dictionary administrator sets up the template for other types of entities.)

In this example, the dictionary data maintained on FILEs and PROCEDUREs is preset by Model 204 in an entry template, but the information on REPORTs (except for some attributes supplied by the system itself) is set up by the

dictionary administrator. The dictionary administrator decides what attributes and relationships the REPORT entity type has.

Figure 1-2. Entities, entity types, and dictionary entries
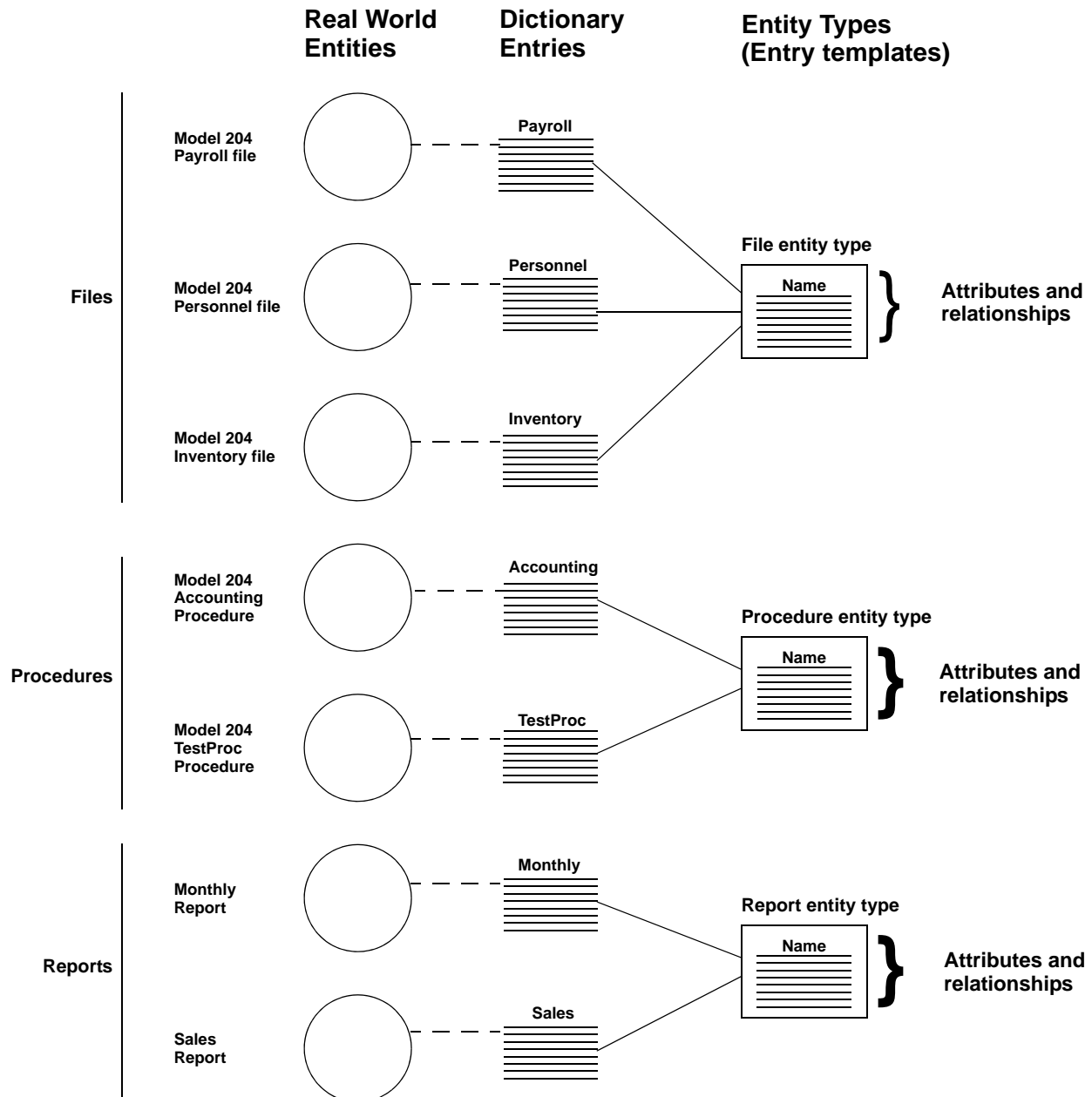
The purpose of an entity type is to ensure a standard set of defining attributes and relationships for all dictionary entries of a particular sort. Entries also can be thought of as *occurrences* of an entity type. For example, Model 204 might contain entries (occurrences of the entity type FILE) with names such as VEHICLES, CLAIMS, and PERSONNL. Each of these FILE entries in the dictionary share the same definition template: the FILE type template.

Figure 1-3 on page 10 illustrates this perspective on entries and entity types. It shows the existence of relationships between entity types and particular entries.

Figure 1-3.   Another perspective on entity types and entries
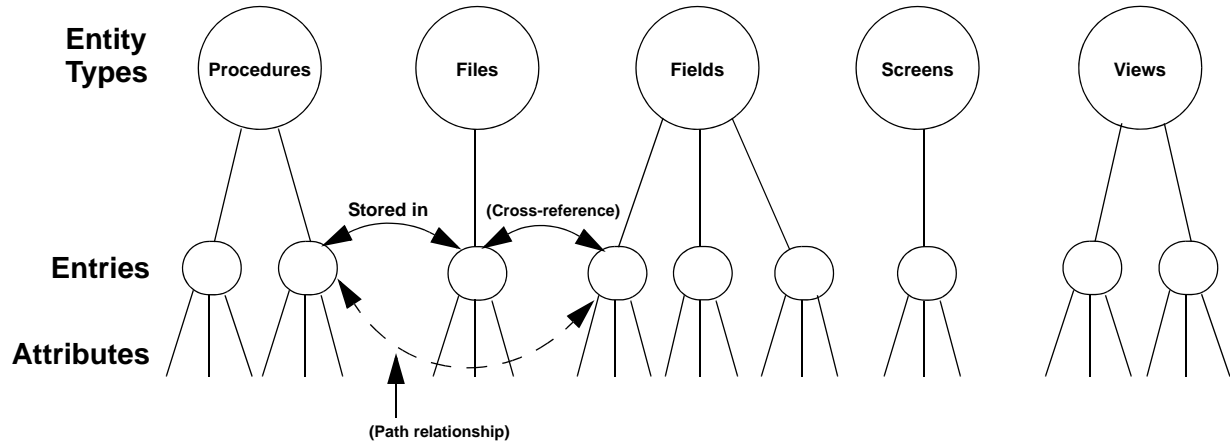
An entry is uniquely identified by its entity type and name. Thus, no Model 204 FILEs, PROCEDUREs, FIELDs, and so on, can have the same name. "Naming conventions and the uniqueness of entries" on page 79 describes how meaningful names are selected without violating the naming restrictions.

The Model 204 dictionary has 31 standard, predefined entity types. The standard entity types are defined by standard sets of attributes and relationships.

The entity types are listed on the next page. The complete definitions can be found in Appendix A, except for the definitions of VIEW, VIEW FIELD, VIEW LINK, and COMPOSITE VIEW, which are found in "Defining view entries" on page 38.

ENTITY TYPES	
ACCOUNT	PC DRIVE
COBOL FIELD GROUP	PC VOLUME
COBOL RECORD	PROCEDURE
COBOL VIEW	RECORD
COBOL VIEW FIELD	SCREEN
COMPOSITE VIEW	SCREEN ITEM
DEVELOPER DEFAULTS	STAGED FIELD
ENTITY TYPE	STAGED FILE
FACILITY	STAGED FIELD GROUP
FIELD	STAGED RECORD

ENTITY TYPES	
FIELD GROUP	SUBSYSTEM
FILE	VIEW
GROUP	VIEW FIELD
IMAGE BLOCK	VIEW LINK
IMAGE ID	VSAMT CONTROLS
PAINTER DEFAULTS	

Extensibility

The extensibility of the dictionary provides the following capabilities:

- The dictionary administrator can add new entity types to the dictionary, providing a template for the definition of the new type of entity. (See "Data administration scenario" on page 17.) After the administrator has provided the entry template, it is up to the users of the new entity type to name and define the particular entries of that type.

- The dictionary administrator can modify the predefined entry templates. But this does not include the deletion of system-controlled attributes and relationships used by Model 204, Workshop/204 facilities, and other Rocket Software products.

Introducing attributes

An attribute is a property or characteristic of an entity type. Attributes specify characteristics of an entity type that apply only to that entry. For example, the NAME of a PROCEDURE applies only to that PROCEDURE, not to any other entry.

While an attribute belongs to an entity type, the *value* of the attribute is a characteristic of an entry. For example, NAME and NUMBER OF RECORDS are attributes of the entity type FILE, whereas the name PERSONNL and "5000" are characteristics of a particular file (for example, a PERSONNL file that has 5000 records).

The following attributes are properties of every entity type, and values are required for them. These attributes are also managed automatically by the system:

```
compact. ENTITY.LI CREATE DATE LAST UPDATED.LI UPDATED-BY
NAME.mnote /MML0001E/List structure error
```

The following attributes also are properties of every entity type, but values for them are not required, nor are they managed automatically by the system. (They are managed by Dictionary/204 users through the Documentation facility.)

```
compact. SHORT DESCRIPTION .LI DESCRIPTION KEYWORD.LI
ALIAS
```

See Appendix A for a list of the attributes defined for each entity type, except for VIEW, VIEW FIELD, COMPOSITE VIEW and VIEW LINK, which are defined in "Defining view entries" on page 38.

Relationships

Relationships indicate how one entity type is related to another type, or how individual entries (occurrences of the entity types) are related. For example, there is a relationship between a particular file and the fields in that file (the FILE entity type is related to the FIELD entity type). Similarly, there are relationships between a particular subsystem and the procedures that are part of that subsystem (that is, between SUBSYSTEM and PROCEDURE).

Dictionary/204 recognizes the following types of relationships:

Relationship	Meaning
Named	Unidirectional relationship between two entries
Cross-reference	Unnamed, bidirectional relationship between two entries
Relationship path	Unnamed and indirect relationship between two or more entries derived from their relationship to other entries

Named relationships

A *named* relationship exists when a unidirectional relationship between two entity types is specified. For example, the named relationship STORED IN between a procedure and a file expresses the fact that the procedure is stored in that file. The USES relationship states that a procedure uses (reads or writes) the file.

These relationships are thought of as unidirectional, because when the procedure is stored in the file, a converse relationship of the same name would not make sense.

To allude to the earlier dictionary entry example, DOG can be defined as related to CAT by the named relationship CHASES. The relationship is diagrammed in Figure 1-4.

Figure 1-4.   A sample named relationship
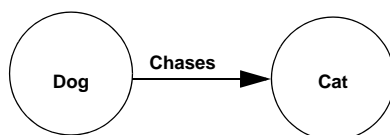
Once the relationship is defined for the entity types DOG and CAT, this relationship can be defined for all entries of this type:

```
ROVER chases TABBY

LASSIE chases FLUFF
```

Cross-reference relationships

A *cross-reference* relationship exists when two entity types are related to one another in a mutual, unspecified way. For example, a cross-reference between a procedure and a file simply means that the file and the procedure are associated in some way. The procedure might be stored in the file, it might read the file, or it might update the file. The cross-reference states only that the file and procedure are related without specifying the nature of the relationship.

A cross-reference of this type might be used to find all the procedures that are related to a file in order to change or delete the file.

These relationships are bidirectional, because if a file is cross-referenced to a procedure, the procedure is cross-referenced to the file automatically.

Suppose that you define an entity type of DOG OWNER for the previous hypothetical example. It is useful to cross-reference DOG and DOG OWNER, so that you can document that ROVER is associated with MR. JONES and that LASSIE is associated with TIMMY. Establishing this cross-reference would be useful in the event that one of the dogs is picked up by an entry of the type DOG CATCHER.

The diagram now includes three types of relationships, as shown in Figure 1-5.

Figure 1-5. Three types of relationships
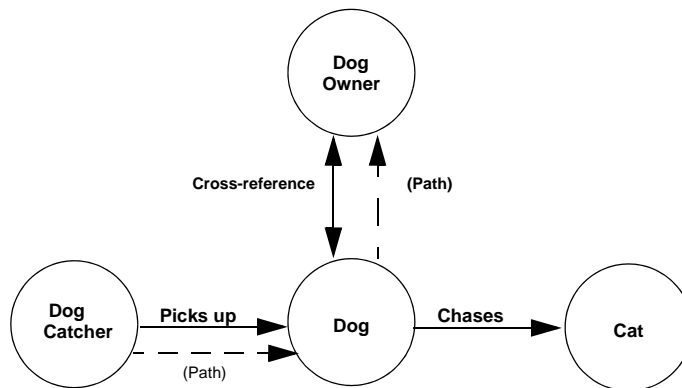
Path relationships

A *path* relationship defines a relationship between two entity types that is derived from cross-references or named relationships. There can be a maximum of eight entity types in the path. You can define path relationships between any pair in the path, regardless of the direction of the relationships. Path relationships are nondirectional.

For example, a procedure defines a screen that has screen items. A path relationship can be created to allow a user to determine (by using Dictionary Reports) SCREEN ITEMS are related to particular PROCEDUREs.

It makes sense to define certain paths, but not all paths. In the previous example, there is no need for a path between DOG CATCHER and CAT, although a path relationship could be defined. However, it is useful to define a path relationship between DOG CATCHER and DOG OWNER in case either LASSIE or ROVER is taken to the pound. You could then determine which DOG OWNERS ought to be called by the DOG CATCHER by following the path from DOG CATCHER through the DOG to the DOG OWNER.

Refer to "Path maintenance" on page 124 for a more detailed explanation of paths.

Modes of updating system and nonsystem data

Values for dictionary entries are entered in the following ways:

- Automatically through the Dictionary/204 system

- Using special product interfaces and facilities that verify the system-controlled data for consistency and integrity

- Using the Documentation facility (adding nonsystem data)

The following attributes have values that are supplied automatically by Dictionary/204 (once an entry has been created):

- ENTITY

- NAME

- CREATE DATE

- LAST UPDATED

- UPDATED-BY

Nonsystem data added through the Documentation facility can have any value; these values are not verified for consistency and integrity.

Facilities and standard entity types

When using a Dictionary/204 or Workshop/204 facility, it is important to know which entity type the facility controls and uses. Table 1-1 shows the entity types that are used by each facility. In some cases, the facility defines and controls

entries of that entity type; in other cases, it simply references entries of the entity type for the necessary dictionary data, but does not define them.

Table 1-1.   Facilities and the entity types they use

Facility	Entity types
Access/204 View Management	ACCOUNT, FIELD, FIELD GROUP, FILE, RECORD, VIEW, VIEW FIELD, VIEW LINK
Dictionary Administration	ACCOUNT, ENTITY TYPE, FACILITY, VSAMT CONTROLS
Dictionary Reports	All entity types
Documentation	Adds: user-defined entity types COMPOSITE VIEW, PAINTER DEFAULTS, VIEW, VIEW FIELD, VIEW LINK Updates: all entity types
File Management	FIELD, FIELD GROUP, FILE, RECORD
PC Volume Management	ACCOUNT, COMPOSITE VIEW, FIELD, FILE, GROUP, PC DRIVE, PC VOLUME, VIEW, VIEW FIELD, VIEW LINK
Subsystem Management	FILE, GROUP, PROCEDURE, SUBSYSTEM
VSAM View Management	COBOL FIELD GROUP, COBOL RECORD, COBOL VIEW, COBOL VIEW FIELD, COBOL RECORD, FIELD, FILE, IMAGE BLOCK, IMAGE ID, STAGED FIELD, STAGED FILE, STAGED RECORDS
Workshop/204 Procedure Editor	FILE, PROCEDURE
Workshop/204 Query/Update	ACCOUNT, DEVELOPER DEFAULTS, VIEW, VIEW FIELD
Workshop/204 Screen and Action	PAINTER DEFAULTS, PROCEDURE, SCREEN, GENERATOR SCREEN ITEM, VIEW, VIEW FIELDS
Workshop/204 Screen Painter	FILE, PAINTER DEFAULTS, PROCEDURE, SCREEN, SCREEN ITEM
Workshop/204 Single-Step Test	FILE, PROCEDURE, SUBSYSTEM

Table 1-2 provides a list of entity types and shows which facility or facilities can define entries of that type. If the defining facility is not installed, you can use the Documentation facility to maintain entries of that type.

Table 1-2.   Entity types and the facilities that define them

Entity type	Active data defined by...
ACCOUNT	Dictionary Administration

Table 1-2. Entity types and the facilities that define them (continued)

Entity type	Active data defined by...
COMPOSITE VIEW	Documentation
DEVELOPER DEFAULTS	Workshop/204 Query/Update
ENTITY TYPE	Dictionary Administration
FACILITY	Dictionary Administration
FIELD	File Management, PC Volume Management
FIELD GROUP	File Management
FILE	File Management
GROUP	File Management
PAINTER DEFAULTS	Documentation
PC DRIVE	PC Volume Management
PC VOLUME	PC Volume Management
PROCEDURE	Workshop/204 (Procedure Editor, Screen Painter, Screen and Action Generator)
RECORD	File Management, PC Volume Management
SCREEN	Workshop/204 (Screen Painter, Screen and Action Generator)
SCREEN ITEM	Workshop/204 (Screen Painter, Screen and Action Generator)
STAGED FIELD	File Management
STAGED FIELD GROUP	File Management
STAGED FILE	File Management
STAGED RECORD	File Management
SUBSYSTEM	Subsystem Management
VIEW	Documentation, Workshop/204 (Query/Update, Screen and Action Generator)
VIEW FIELD	Documentation, Workshop/204 (Query/Update, Screen and Action Generator)
VIEW LINK	Documentation
VSAMT CONTROLS	Dictionary Administration
User-defined entity types	Documentation

For information concerning the use and operation of Dictionary/204 facilities, see Chapter 5 through Chapter 12.

Data administration scenario

This section examines how the dictionary entries function in a hypothetical application. For this example, suppose that a large travel agency is using Model 204 to manage personnel and customer information.

Entity types

The following entity types are among those maintained by the company's data processing department.

Entity type	Description
FILE	The travel agency database includes standard customer, payroll, and financial files, as well as reference files that describe various vacation packages such as cruises, camps, tours, and safaris. Each of these files is defined by a corresponding dictionary entry.
FIELD	A file consists of a series of data elements called fields. Fields include separate entries for name, address, phone number, flight number, and so on.
REPORT	The travel agency regularly produces reports containing information retrieved from the database. Some sample reports might be Customer Summary, Travel Management Summary, and Cruise Inventory. Each of these printed or online reports is described in a dictionary entry. First, however, the administrator must add the REPORT entity type to the dictionary and specify its attributes and relationships. This is accomplished through the Documentation facility. Dictionary/204 users can then add the specific reports that are needed by the company.
USER	Travel agency reports are prepared for a variety of end users who have different requirements. Some examples of users might be the payroll department, travel agent, or comptroller. USERs can define user classes or individual users. These various users are defined in a dictionary entry of the entity type USER, which must be added to the dictionary by the dictionary administrator.
PROCEDURE	A number of standard Model 204 SOUL procedures have been established to manipulate data and to generate reports. Each of these stored requests, called a procedure, is defined by a dictionary entry.
ACCOUNT	The dictionary administrator defines each programmer as an ACCOUNT. Programmers at the agency are responsible for developing and maintaining procedures. Each programmer is described in a dictionary entry, but only after the administrator has added the entity type to the dictionary.

FILE, FIELD, ACCOUNT, and PROCEDURE entity types have standard definitions (see Appendix A). The dictionary administrator can add attributes and relationships to these definitions. REPORT and USER must be added by the dictionary administrator, who sets up the definition templates for entries based on the kinds of information the data processing department wants to maintain about those entities. Once these entity types have been added to the dictionary, users can define particular reports and programmers.

Attributes

The administrator determines the basic attributes for each entity type. Examples of attributes for nonstandard entity types are.

Entity Type	Attributes
REPORT	REPORT TITLE
	REPORT TYPE
	FREQUENCY
	AVERAGE LENGTH
	PAPER STOCK
	NUMBER OF COPIES
	SECURITY CODE
USER	DEPARTMENT
	SECURITY LEVEL
	POSITION
	PHONE
	SUPERVISOR

In addition to the attributes selected by the dictionary administrator, Dictionary/204 automatically includes the following attributes in the definition:

```
NAME
ENTITY TYPE
CREATE DATE
LAST UPDATED
UPDATED-BY
SHORT DESCRIPTION
DESCRIPTION
KEYWORD
ALIAS
```

Relationships

The dictionary administrator also determines which entity types are related to other types (explicitly as well as through a path) and the type of relationship and its name (in the case of named relationships).

The dictionary administrator adds these entity definitions by filling in a series of Dictionary/204 screens in an interactive online session.

After the dictionary administrator has defined all the dictionary entities and relationships, the responsibility for filling the dictionary with occurrences of the new entity types rests with the Dictionary/204 users.

As a user, suppose that you want to add a particular REPORT entry. You are prompted by Dictionary/204 to fill in values for the attributes that describe the report. Dictionary/204 also gives you the opportunity to enter additional occurrences of attributes. For example, you might want to add a second REPORT TYPE or a second ROUTING for the report.

Dictionary/204 then prompts you to specify the entries that are related to the REPORT that you have defined. Dictionary/204 displays the USER and FILE prompt, because the dictionary administrator previously indicated that the REPORT entity was related to the USER and FILE entities. You can then specify which users can read the report, as well as the file from which the report will be generated.

When all the specifications for the entry have been supplied, the entry is added to the dictionary. These entries can later be changed, deleted, or displayed.

The Dictionary/204 user might then add entries for the files related to this report, for example, the CRUISE84 file. The relationships to entries for entity type FIELD contained in this file are then added, as well as other required and optional characteristics describing this entry. When the entries for the entity type FIELD are added, the Dictionary/204 generates the definitions used to create the Model 204 file CRUISE84.

Defining relationships

When you define the relationships for an entity type in the dictionary, you can specify on the Add Entity Type References screen that certain entries are directly related to each other. (Remember, relationships can also be thought of as "references" between entries.) For example, both cross-referenced and named relationships can be established for the following pairs of entries:

Entity Type Pair	Example
ACCOUNT <-- PROCEDURE	ADBJ <-- CRUSERPT
PROCEDURE --> FILE	CRUSERPT --> CRUISE84
FILE <--> REPORT	CRUISE84 <--> CRUISE SUMMARY
REPORT <-- USER	CRUISE SUMMARY <-- TRAVEL AGENT SUPERVISOR

FILE <--> REPORT	CRUISE84 <--> CRUISE SUMMARY
REPORT <-- USER	CRUISE SUMMARY <-- TRAVEL AGENT
	SUPERVISOR

Once the administrator has defined a relationship between entity types, Dictionary/204 prompts users to specify particular relationships when they define entries.

For example, when you add an entry to the dictionary to describe a USER, you are asked to specify the particular REPORTs that the USER reads. When you add a particular REPORT, the associated USERs and FILEs are specified. When you add a particular FILE, the associated REPORTs and PROCEDUREs are specified.

As defined here, these relationships also comprise the following path:

```
ACCOUNT
PROCEDURE
FILE
REPORT
USER
```

Thus, it is possible to determine which entries along the path are related, even if no direct relationship has been explicitly defined between two entries. For example, you can ask the dictionary which files are related to a particular account, or which reports are generated by a particular procedure. The Dictionary Reports facility allows you to ask the dictionary which file is related to the account ADBJ. The report yields CRUISE84. Or, you can ask which report is related to the procedure CRUSERPT. The dictionary report yields CRUISE SUMMARY.

Figure 1-6 on page 21 diagrams the defined relationships among the entries.

Figure 1-6.   Entity type relationships in the data administration scenario
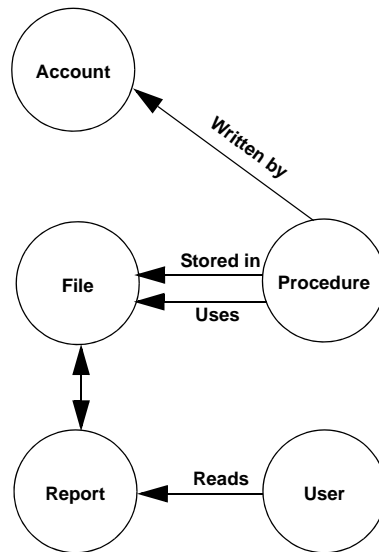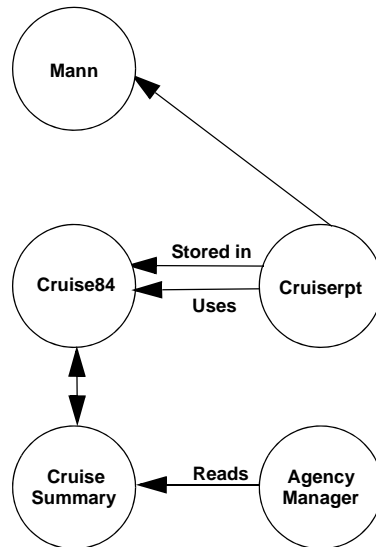
2

View Management

What are views?

Views are an aid to developing application software and to providing end users with easy access to mainframe data. A view is a defined subset of data from a Model 204 file (or files) that is displayed to the user in a prearranged format. That is, view definitions contain the information that allows certain facilities and products to generate an "external view" or "picture" of selected data based on the data in a physical file and its fields. Each view has a set of view fields with attributes that enable users to see a restricted set of the data in a defined display format.

A view includes various types of information that "filter" the Model 204 data, extracting only the desired fields and values, and formatting the display of the data. This information is included in the view definition.

Figure 2-1 on page 24 depicts this process in broad terms. The general types of information that filter Model 204 data into a view are:

Physical	Tells the system where and how information is stored. Each view MAPS TO a GROUP, a FILE, or a RECORD. A view also has VIEW FIELDs, each of which MAPS TO a Model 204 FIELD. The physical information is supplied in the definitions of the FILEs and FIELD entries that are related to the view.
	Physical information includes the PAD LEADING ZEROS, AVERAGE WIDTH, and AVERAGE OCCURS attributes of a FIELD entry.

Logical	Characterizes the data in general terms, independently of where and how it is stored. It answers questions such as:
	• Can the user update the data?
	• Is the data derived from other data?
	• What data uniquely identifies other data?
	• Is this data CHARACTER or NUMERIC?
	These questions are answered by defining the attributes of the VIEW FIELD entity type.
Restriction	Enables the system to confine the view data to the desired fields and values. The information is supplied by defining which Model 204 FIELD a view field MAPS TO, and in the RESTRICTION attribute of the VIEW FIELD entry.
Display	Tells the system how to format the view data for the user. It includes the CONVENIENT WIDTH and CONVENIENT OCCURS attributes of the VIEW FIELD entry. This information also controls the position of a field in a simple view, whether the view data is left justified on the screen or report, and whether multiple values appear within a VIEW FIELD.

Figure 2-1. Filtering data into a view
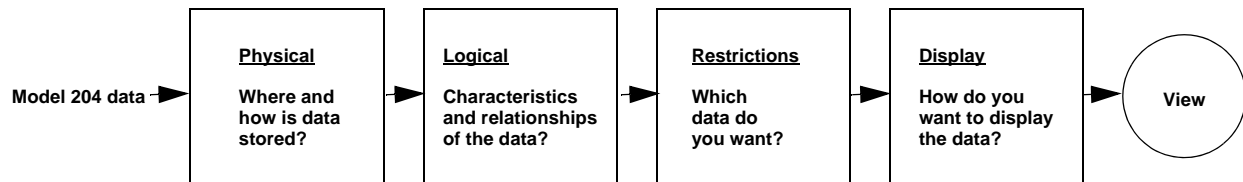
Sample view

To consider a sample view, suppose that a government agency maintains a file called PERSONNL that has the following fields:

NAME	SOC. SEC. #
AGE	DEPARTMENT
TITLE	HIRING DATE
RATING	SUPERVISOR
ADDRESS	SALARY
HOME PHONE	MEDICAL HISTORY
SECURITY LEVEL	CREDIT RATING
CHILDREN	MED. INSURANCE

NO. TAX EXEMPTIONS	FOREIGN LANGUAGES
ANNUAL REVIEW SCORE	PROBLEM AREA CODE
SPOUSE'S NAME	SPOUSE'S NATIONALITY

Any number of views can be based upon the data in this file. Suppose that a view called JOB PERFORMANCE is to be used by the Human Resources Department. This view is defined to include the following view fields:

NAME	SOC SEC. #
AGE	DEPARTMENT
TITLE	HIRING DATE
SUPERVISOR	SALARY
FOREIGN LANGUAGES	SECURITY LEVEL
ANNUAL REVIEW SCORE	PROBLEM AREA CODE

In this example, the Human Resources staff is prohibited from knowing the employee's medical history, spouse's nationality, and other private data. In addition, the VIEW can be defined to include only personnel who have salaries over $40,000 and who have a specified security level.

Without views, a programmer would have to write a program and run it against the PERSONNL file to display the selected data. The program also would have to specify how the data is displayed: the order of fields, numeric range fields, the maximum number of records that can be retrieved, and so on.

But by defining a VIEW based on the PERSONNL file, you can sidestep the need to write and run a program. The view is defined as a permanent database "object." The view definition sets out the guidelines for a system-written program that extracts the data you want and displays it according to the attributes specified in the definition. Instead of writing a program, the developer or data administrator need only define a view and the view fields, and then use one of the facilities or products that processes view information to update or display the view.

How views are used

By applications developers

Programmers use views as an aid to developing application software. Through Workshop/204's Screen and Action Generator facility, an application screen and programs that use the screen are generated automatically from a view definition. Through Workshop/204's Query/Update facility, programmers can use views to create test databases and to develop and test application prototypes.

Programmers can define their own views by using Workshop/204's Query/Update facility or by using the Dictionary/204 Documentation facility; or, they might use views that data administrators define by using the Documentation facility.

By data administrators

The data administrators of Access/204 (a query and report-writing tool) and PC/204 (a tool for retrieving Model 204 data in spreadsheet and table formats) must set up views so that the facilities and products that use them can generate data and display formats that meet the end users' needs. The Workshop/204 administration can define views by using the Dictionary/204 Documentation facility.

By end users

Views allow end users to see a subset of the data in a mainframe file without having to submit a request to the programming department. The view provides the basis for a ready-made display of selected data. The subset of data often can be further restricted by the end user through an online interface. Examples of end users are Access/204 users, PC/204 users, and the users of application software that takes advantage of views.

View fields

The data in a view is organized into view fields. Thus, a VIEW FIELD definition provides some of the information required by the facilities and products that use views. The VIEW FIELD entity type corresponds to (MAPS TO) a physical data field in a Model 204 file — the FIELD from which it extracts information. The name of the view field can be different from the Model 204 field name.

By defining the VIEW FIELD, you also can control the "convenient" field width, the type of data (character or numeric), qualifications on the range of data to be included, the position of the field within the view, and other features of the view.

The relationships among VIEW, VIEW FIELD, FIELD, FILE, RECORD, and GROUP are shown in Figure 2-2.

Figure 2-2.   Entity type relationships for simple views
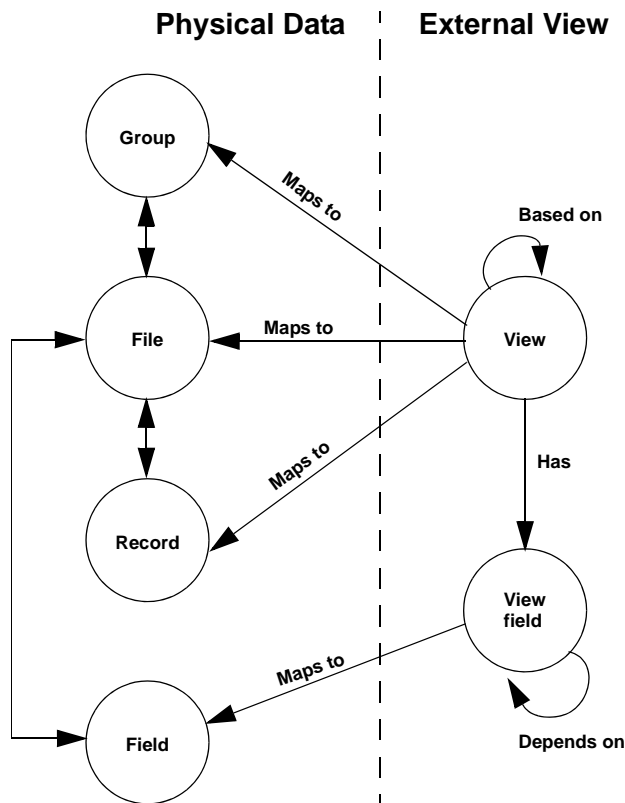
Special features of view fields

Derived view fields

Derived fields are available only for Access/204.

A derived view field is one whose value is determined by the values of other fields. The formula for derivation is contained in the DERIVATION RULE attribute of the VIEW FIELD entity type. The values can be alphabetical or numeric. If the values are numeric, the mathematical operation is specified in the DERIVATION RULE attribute. If one of the fields is an alphanumeric string, the WITH rule for concatenation is specified in the DERIVATION attribute.

Field-related (functional) dependencies

Functional dependencies are available only for PC/204.

PC/204 correctly translates the data from a Model 204 file into a spreadsheet or table, as long as the relationships between individual items in the file are

suitably defined. You define relationships between Model 204 data items in the dictionary by specifying functional dependencies for the view field entries that correspond to the data items.

PC/204 uses functional dependencies primarily to:

- Determine intelligently when it is possible to aggregate values in a cell.

- Control the elimination of certain duplicate values.

In PC/204, a view field is considered to be functionally dependent on one or more other view fields if the values in the other view fields uniquely determine the value in the first view field.

Consider the record layout of the database in Figure 2-3.

Figure 2-3. Record layout of database

REGION	SALESPERSON	YEAR	MONTH	QUOTA	SALE NUMBER	AMOUNT OF SALE
East	Tapper	83	1	20	1	3
East	Tapper	83	1	20	2	4
East	Tapper	83	1	20	3	3
East	Tapper	83	2	40	1	6
West	Newton	83	1	15	1	3

The database contains one record for each sale a salesperson has made. Each salesperson is in one region and has a predetermined quota for each month of each year. You define these relationships in your installation's dictionary by specifying the following functional dependencies for your view fields:

- REGION depends on SALESPERSON.

- QUOTA depends on SALESPERSON, YEAR, and MONTH.

- AMOUNT OF SALE depends on SALESPERSON, YEAR, MONTH, and SALE NUMBER.

Figure 2-4 illustrates the dependencies that you just defined. The arrows join dependent view fields to "depends on" view fields.

Figure 2-4. View field dependencies
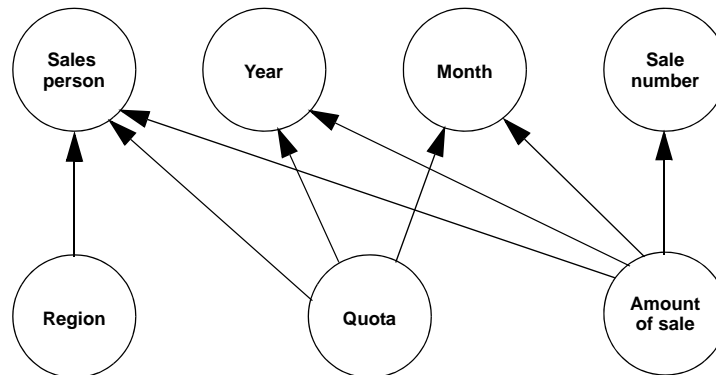
With the database dependencies that are defined here, the value of QUOTA is uniquely determined by the values in the SALESPERSON, YEAR, and MONTH view fields. In other words, there is a single quota for a particular salesperson in a particular month of a particular year. Once PC/204 has determined the salesperson's name, the year and the month, it can determine the quota for the salesperson. Neither SALESPERSON, YEAR, nor MONTH alone can determine the QUOTA value.

The following examples demonstrate how PC/204 uses the dependencies.

Example 1 Suppose that you want to build a spreadsheet that contains salesperson Tapper's average quota. PC/204 uses the functional dependencies to determine which individual quota values are to be averaged. If PC/204 were to average all the quota values for this salesperson, it would compute:

```
20 + 20 + 20 + 40 = 100 / 4 = 25
```

However, based on the dependencies defined in the dictionary (QUOTA depends on SALESPERSON, YEAR, and MONTH), PC/204 determines that there is only one quota value for each month:

• Month 1 has a quota value of 20.

• Month 2 has a quota value of 40.

Therefore, the correct average computation is:

```
20 + 40 = 60 / 2 = 30
```

Example 2 Suppose that you want to build a spreadsheet that contains the amount of Tapper's average sale. Recall that AMOUNT OF SALE depends on SALESPERSON, YEAR, MONTH, and SALE NUMBER. PC/204 uses these dependencies to determine which duplicates to include in the aggregation.

To determine the average sale, PC/204 computes:

```
3 + 4 + 3 + 6 = 16 / 4 = 4
```

Note that both of the $3.00 sales are included in the computation. Although these values are in the same year and month, they have different sale numbers associated with them, and, therefore, they are not duplicate values.

Compare this example with the previous example. In Example 1, the quota values 20, 20, and 20, without the dependency on SALE NUMBER to make them unique, are determined to be redundant. They are included just once in PC/204's computation.

Example 3 Consider the SALESPERSON view field. Because SALESPERSON does not depend on any other view field, there are cases in which PC/204 might not be able to determine when it encounters duplicate values for this field.

Suppose that a user requests a count of the salespeople in a database. In the sample database, salesperson Tapper actually appears four times. Given the dependencies defined here, PC/204 has no way of determining whether there is a single salesperson named Tapper, or several salespeople who have the same name. Therefore, a count of the salespeople results in a total of 5, rather than 2.

You can avoid this problem by specifying the following functional dependency when you know that every apparently unique value in the database actually is unique:

```
SALESPERSON depends on SALESPERSON
```

Figure 2-5 on page 31 illustrates the dependencies that are now defined.

Figure 2-5.   Modified view field dependencies
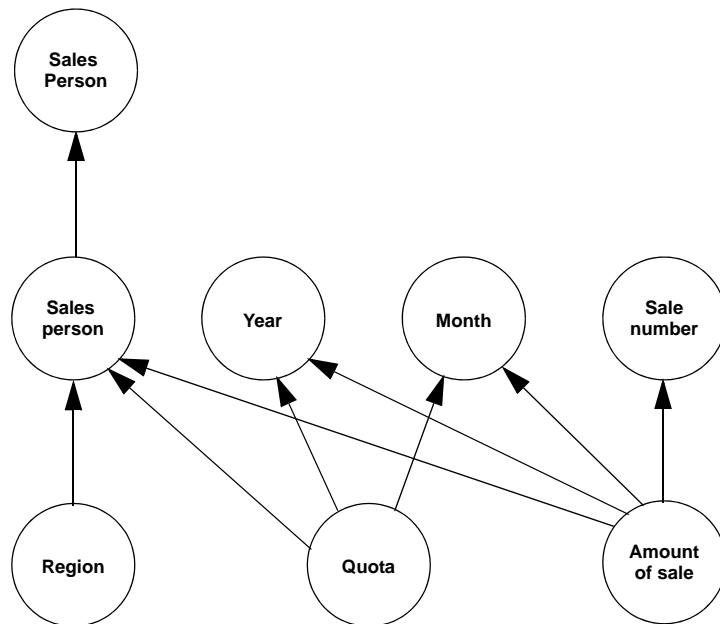
If you define the view field in this way, PC/204 correctly considers all the Tappers to be duplicate values, and produces a count of 2 salespeople, not 5.

This approach is recommended only if you are sure that identical values in the database are really duplicates. If, for example, there are two salespeople named Smith (Jane and Fred), you would not specify the "SALESPERSON depends on SALESPERSON" dependency. In this case, the apparently duplicate Smiths are not, in fact, duplicates.

What you might do instead is specify a dependency on a view field that you know has unique values. For example, SSN (social security number) has unique values. Specifying that SALESPERSON is dependent on SSN guarantees you an accurate count of the salespeople in your database.

References

For detailed information about database design and functional dependencies between data items, consult the following references:

- Kent, W. "A Simple Guide to Five Normal Forms in Relational Database Theory." *Communications of the ACM*, Vol. 26, No. 2, February 1983.

- Date, C. J. *An Introduction to Database Systems*, third edition, Addison-Wesley, Reading, MA, 1981.

- Codd, E. F. "Normalized Data Base Structure: A Brief Tutorial." *ACM SIGFIDET Workshop on Data Description, Access, and Control*, San Diego, CA, November 11-12, 1971.

Composite views and view links

Views can be connected through view links to other views. When two or more *simple views* are connected through view links, the result is a *composite view*. Simple views can be shared by the users of all facilities and products, but only Access/204 and PC/204 can use (and share) composite views.

Although Access/204 uses composite views, it does not use COMPOSITE VIEW entries from the dictionary. The administrator, however, downloads VIEW LINK entries by using Access/204 View Management and then constructs composite views in Access/204 with those view links. (See "COMPOSITE VIEW" on page 39.)

VIEW LINK is an entity type that takes one view as its source and another view as its target. That is, the VIEW LINK entity type uses the named relationships HAS SOURCE and HAS TARGET to identify the two connected views. In this way, it links two simple views to form a composite view. Technically, the two views are "joined." The composite view contains all the view fields of the combined views without duplicating join fields.

The view link must join the views on the basis of a source view field and target view field. This makes it possible to compare data in one record with data in another record across files or within a file. The source view field is identified by the relationship ON SOURCE, and the target view field by the relationship ON TARGET. Figure 2-6 on page 33 provides a comprehensive look at view relationships for composite views.

The COMPOSITE VIEW entity type has as its origin (bears the relationships HAS ORIGIN to) a simple view and also uses (bears the named relationship USES to) some number of VIEW LINKs. The view link identifies the views connected to form the composite view.

Composite views must be defined in a *tree-like* structure. The structure begins with a "base" view and then branches out to other views. The advantage of a composite view is that it can simultaneously present to the user all the branches of the structure. In addition, the restrictions on data at the outer branches of the tree (at lower levels of the composite view) can be partly determined by higher

level restrictions on the data. Figure 2-6 shows the structure of the tree with View A as the base view.

Figure 2-6. Basic structure of a composite view
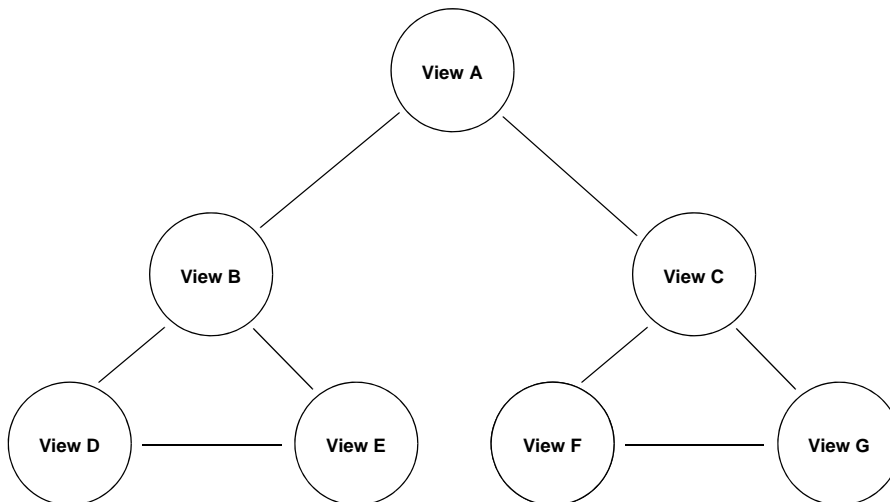
In a composite view, a VIEW LINK must be defined as connecting two simple views of the composite view. The base view, or the view closer to the base view, is the "source view," and the other view is the "target view." In more detail, then, the one branch of the composite view looks like this:

```
HAS SOURCE HAS TARGET

View A  ------------ View Link AB -------------> View B
```

The view link also joins the views on a common join field as follows:

```
ON SOURCE ON TARGET

View Field A  -------- View Link AB ---------> View Field
```

See Figure 2-7 on page 34 for an illustration of composite view relationships.

The base VIEW of the composite view is considered Level 1 of the view tree. When a view link uses for its source the target of another view link as in Figure 2-7, this establishes another level of the view. In a composite view, fields at level n (n = a positive integer) are displayed before fields at level $n + 1$. Within a member view of the composite view, the order in which fields are displayed can be controlled by the VIEW FIELD attribute POSITION. If the POSITION attribute is not assigned a number, the view fields are displayed in alphabetical order.

Access/204 can query a maximum of nine simple views connected in a composite view. The number of simple views (or nodes) in PC/204 is a function

of the amount of data in the views and the available PC memory. The maximum number of composite view levels for PC/204 is six.

Figure 2-7.   Entity type relationships for composite views
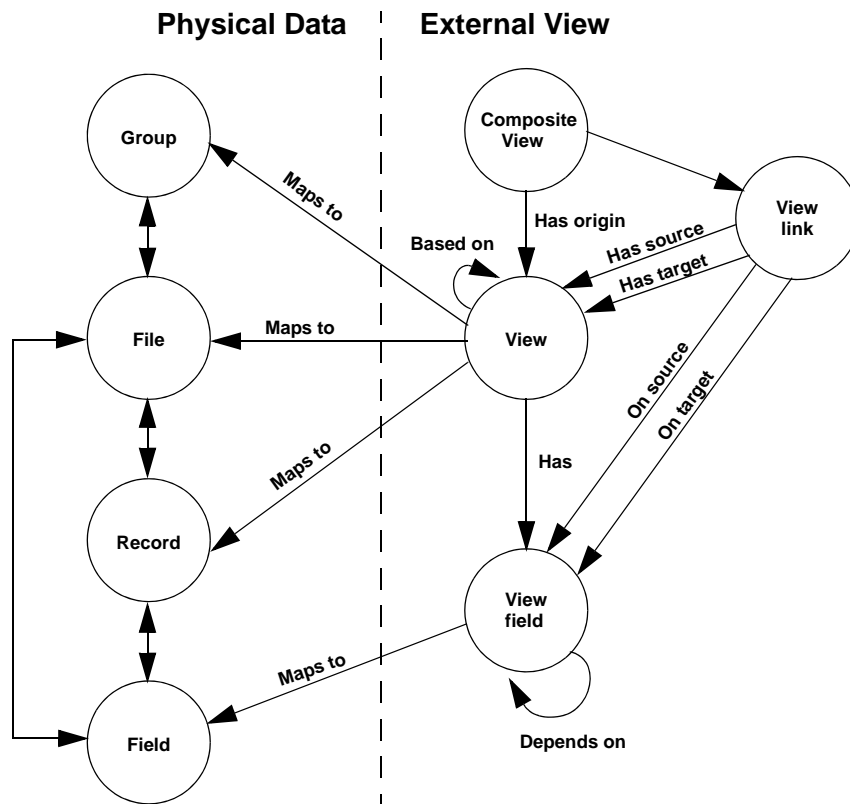
In PC/204, a VIEW LINK can use the same view for its source and target. In this case, however, the self-referring view cannot function as a connecting view for a higher level VIEW LINK. The view tree cannot grow any further from that branch.   See the VIEW LINK relationship HAS SOURCE ("VIEW LINK" on page 47) for more information. PC/204 also allows one view field to depend upon (the relationship DEPENDS ON) another. These special cases are noted

in the diagram of a PC/204 composite view (Figure 2-9 on page 36) and they are discussed in "VIEW FIELD" on page 42.

Figure 2-8.   Levels of a composite view
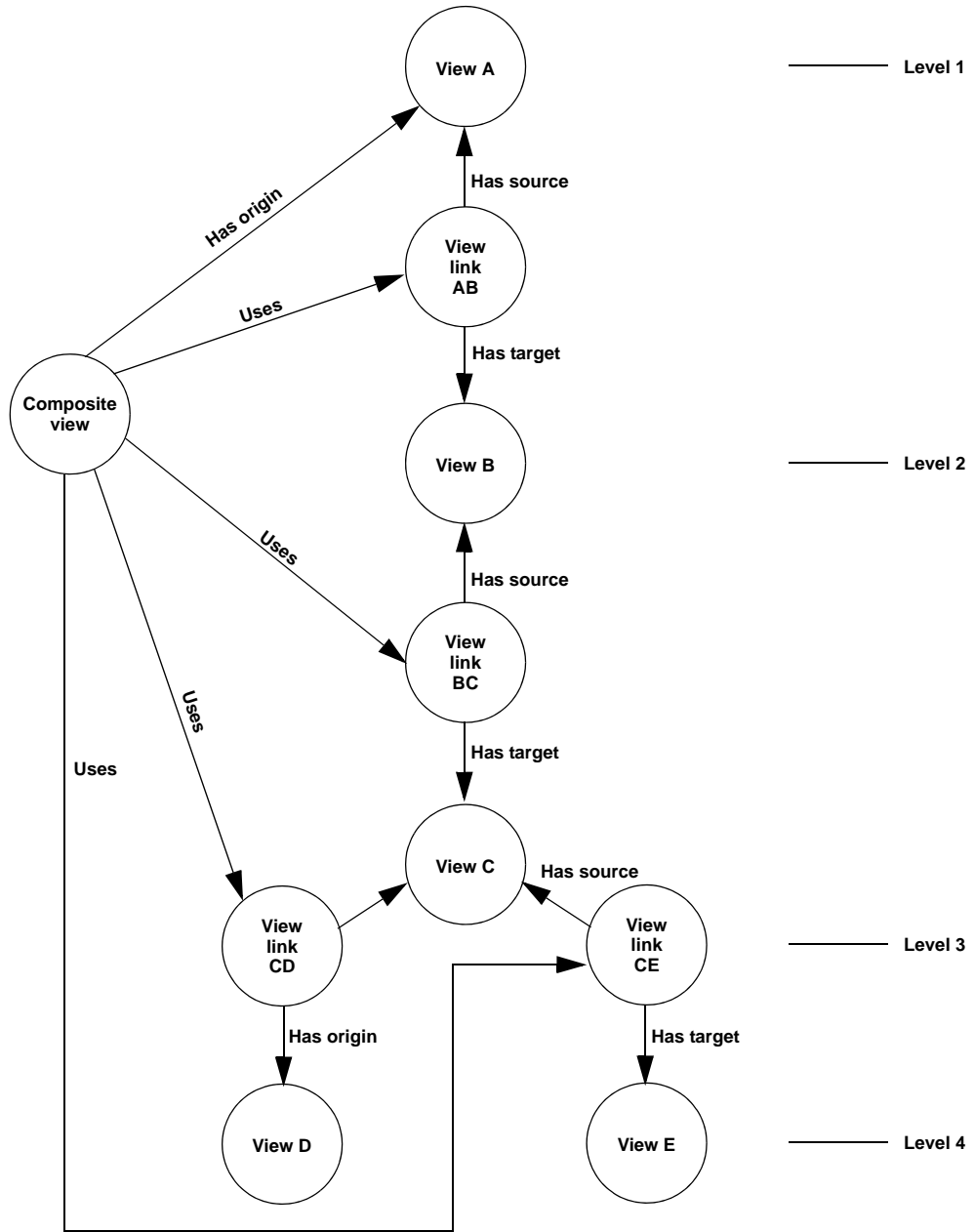
Figure 2-9. Sample composite view for PC/204
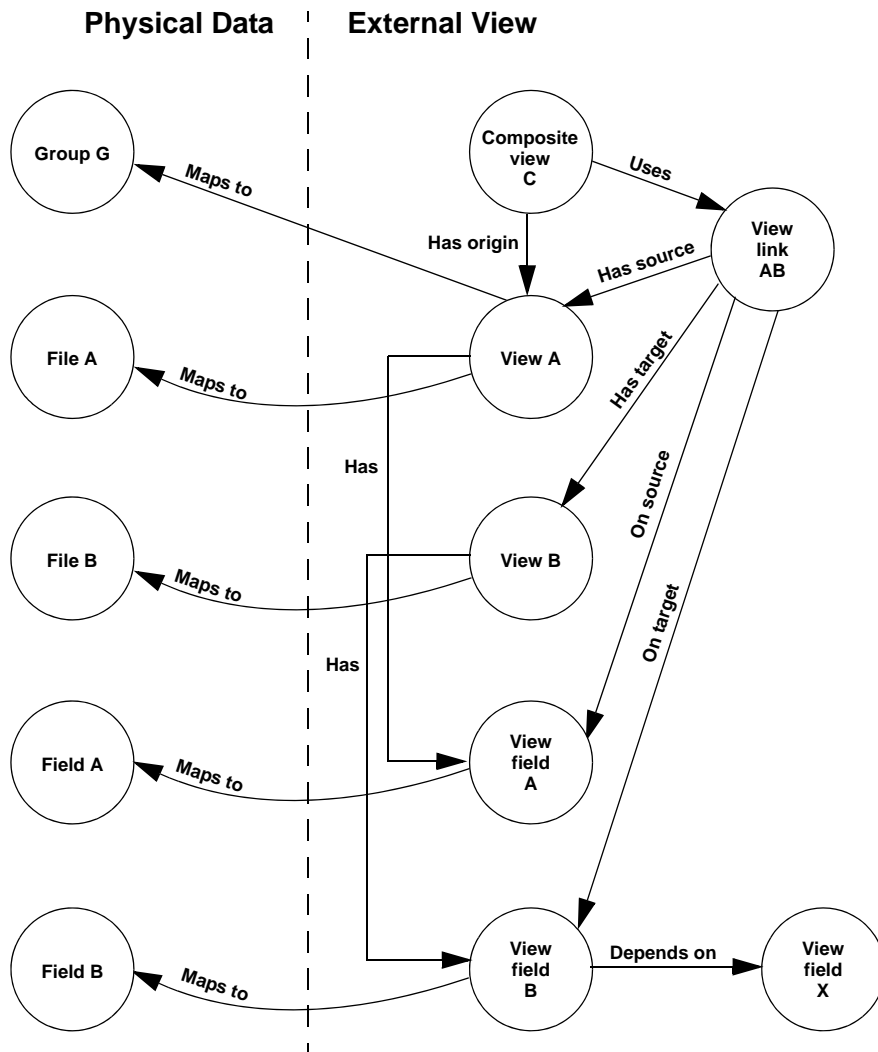
Facilities for defining views

Three facilities are available through which views can be defined. Except for views defined by the Access/204 Administrator's Dialogue, views can be shared. Views defined by using the Access/204 Administrator's Dialogue do not update the dictionary and can be used only by Access/204 users.

Access/204 users can use views defined by other facilities if the Access/204 administrator downloads them to Access/204 by using the Access/204 View Management facility. Simple views (and view fields) defined by facilities other than Access/204 can be used by all products and facilities. Composite views (and view links) can be used only by PC/204 and Access/204.

The view-defining facilities are as follows:

Workshop/204 Query/Update facility	Gives users the ability to define simple view and view field entries using a tabular interface. Views defined by Query/Update can also be used by Workshop/204's Screen and Action Generator facility.
Dictionary/204 Documentation facility	Defines all view-related entity types: VIEW, VIEW FIELD, VIEW LINK, and COMPOSITE VIEW. Access/204 and PC/204 administrators can use the Documentation facility to define views for their end users. The Access/204 administrator must also use the Access/204 View Management facility to download the view definition to Access/204.
Access/204 Administrator's Dialogue	Available only to the Access/204 administrator. Enables the administrator to set up views for Access/204 users using an online interface that is part of the Access/204 product. Composite views are allowed.

Defining view security

The function of view security is to enable the administrator to control who has access to views. Because view security is handled differently by the various products and facilities that use views, each case is discussed separately.

View security is controlled by defining the relationship between the user's ACCOUNT entry and the view. To update a user's ACCOUNT entry, the data administrator uses either the Dictionary/204 Documentation facility or a special interface within the view-using product or facility.

Note: The use of views is also subject to Model 204 security.

Query/Update

Query/Update users can assign read and update privileges for the views that they create. The administrator, however, controls which users have view-creating privileges.

The possible relationships between the ACCOUNT and VIEW entity types for the Query/Update facility are:

```
ACCOUNT      OWNS      VIEW
ACCOUNT      UPDATES   VIEW
ACCOUNT      READS     VIEW
```

These relationships can be defined within the Documentation facility or through a special interface within Query/Update. Ownership of a view implies update and read privileges. In addition, the owner of a view can assign read and update privileges to other users, and also can transfer ownership of the view.

PC/204

For PC/204, which can use COMPOSITE VIEWs, these relationships can be defined:

```
ACCOUNT      READS    VIEW
ACCOUNT      READS    COMPOSITE VIEW
```

PC/204 recognizes owners and updaters of views as readers of PC/204 views. These relationships can be defined through the Documentation facility or through Query/Update (except for composite views, which are not used by Query/Update).

Access/204

Access/204 security is controlled through the Access/204 Administrator's Dialogue, an online interface of Access/204. The administrator can document security through the Documentation facility of Dictionary/204, but the Dictionary/204 does not actively control view security for Access/204.

Screen and Action Generator

A Screen and Action Generator user can use any view to generate programs and screens. These programs enable users to read, update, and delete view data. The programs and screens, however, are subject to file and procedure security.

Defining view entries

This section discusses the definitions of the entity types VIEW, VIEW FIELD, VIEW LINK, and COMPOSITE VIEW. You can define entries for these entity types by assigning values to their respective attributes and relationships.

Through the Documentation facility, you can update all the attributes of views; through the other view-defining facilities; you can only update the attributes used by those facilities.

The Documentation facility prompts you for values for each of the attributes and relationships discussed in the following sections.

The Query/Update facility and the Access/204 Administrator's Dialogue provide specialized interfaces for defining views.

The following sections are intended to be useful to all view managers and administrators. Because simple views that map to files can be shared by all facilities, define them in a manner that anticipates the needs of all the view's users.

Views that map to records can be used only by Access/204 and PC/204.

Some of the information in the following sections is related to particular products and facilities. Thus, the names of view-using products and facilities

appear in boldface, enabling the respective administrators to spot relevant details easily.

The following sections have the same format as the entity type definitions listed in Appendix A.

COMPOSITE VIEW

A COMPOSITE VIEW is a collection of VIEWS. It forms a view of data that is a composite of the individual views. It establishes a perspective with an original view and then defines the VIEW LINKS to the connected views in the view structure.

Note: As mentioned in "Composite views and view links" on page 32, the Access/204 administrator can define composite views through the Access/204 Administrator's Dialogue, but cannot use COMPOSITE VIEW entries in the dictionary. The administrator can, however, download VIEW and VIEW LINK entries from the dictionary by using the Access/204 View Management facility (described in Chapter 5).

Used by: PC/204

Defined through: Documentation facility

System Attributes

ENTITY	Value is COMPOSITE VIEW.
CREATE DATE	Date the entry was created.
LAST UPDATED	Date the entry was last updated.
UPDATED-BY	Account that last updated this entry.
NAME	Name of the COMPOSITE VIEW is required. The limit is 70 characters.

Attributes

SHORT DESCRIPTION	Brief description of the view's data and function, supplied by the view definer. The limit is four screen-lines. This description appears as part of the header when a report is displayed through the Dictionary Reports facility. This description is also used as the HELP text by PC/204.
DESCRIPTION	More detailed description of the view that provides extended documentation. There is no limit on the number of lines of text.

KEYWORD	Keywords can be used to retrieve related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternative names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

Relationships

HAS ORIGIN	VIEW entry. This becomes the base for the COMPOSITE VIEW entry. The base view establishes level 1 of the view structure levels; lower level views are displayed before higher level views in a composite view. There can be only one origin view for a composite view.
USES	VIEW LINK entries. View links connect the member views or nodes in a composite view.
	The same view link can be used by different composite views — composite views can share sets of linked views.

Referenced by

ACCOUNT READS	Establishes security for the composite view for PC/204. Security at the COMPOSITE VIEW level overrides the security of any individual VIEW. Thus, users potentially can read a composite view, even if they are not defined as readers of the member views, or "nodes."

VIEW

One VIEW exists for each "picture" or view of the data that is to be presented to a Query/Update, Access/204, Screen and Action Generator, or PC/204 user. This entry, together with the corresponding VIEW FIELD entries, specifies the fields, records, and format of the data.

Used by: Access/204 View Management, PC/204, Workshop/204, Screen and Action Generator, and Workshop/204 Query/Update.

Defined through: Documentation facility, Query/Update

System Attributes

ENTITY	Value is VIEW.
CREATE DATE	Date the entry was created.
LAST UPDATED	Date the entry was last updated.
UPDATED-BY	Account that last updated this entry.

NAME	Name of the VIEW is required. The limit is 70 characters.

Attributes

SHORT DESCRIPTION	Brief description of the view's data and function, supplied by the view definer. The limit is four screen-lines. This description appears as part of the header when a report is displayed through the Dictionary Reports facility.
	This description is also used as the HELP text by PC/204
DESCRIPTION	More detailed description of the view. This description provides extended documentation. There is no limit on the number of lines of text.
KEYWORD	Keywords can be used to retrieve related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternative names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.
CAN UPD RECORDS Y/N	This attribute specifies whether or not the view data can be updated from the Query/Update facility. When a view entry is defined through Query/Update, the default value is Y. When the entry ID is defined through the Documentation facility, the default is null. The other possible value is N.
MAX RECORDS	Maximum number of records that can be retrieved or updated through this view in one Query/Update or PC/204 request. The value must be an integer.
	PC/204 default is no limit. When defining views through Query/Update, the default is 1000.

Relationships

BASED ON	Used only in the Query/Update facility, the value is the name of another VIEW entry. The purpose of this relationship is to allow Query/Update users the convenience of creating a new (derived) view by modifying an existing view.
HAS	Values are VIEW FIELD entries that comprise this view. Defining this relationship is required by all products and facilities.

MAPS TO	FILE entry for the file that contains the data retrieved by this view. A view MAPS TO a single file, although different views can map to the same file.
	Every view definition must define a MAPS TO relationship supported by the product and/or facility that will use the view. The supported MAPS TO relationships for products and facilities are:
	• File (for all)
	• Group (for PC/204 only)
	• Record (for PC/204 and Access/204 only)
MAPS TO	GROUP entry for the GROUP that contains the data retrieved by this view.
	This relationship can be defined only for PC/204. It enables PC/204 to define views that extract data from more than one Model 204 file. Mapping to a group precludes mapping to a file, although it does not preclude mapping to a record.
MAPS TO	RECORD entry for the RECORD that contains the data retrieved by this view.
	This relationship can be defined for the facilities noted above to specify the physical location of the data.
	Query/Update and Screen and Action Generator do not use this relationship.

Referenced by

ACCOUNT OWNS, READS, UPDATES	Establishes security
COMPOSITE VIEW HAS ORIGIN	See COMPOSITE VIEW
VIEW BASED ON	See BASED ON relationship
SCREEN MAPS TO	Used by Screen and Action Generator

VIEW FIELD

One VIEW FIELD entry exists for each field of a view that is used by Query/Update, Screen and Action Generator, or PC/204. This entry specifies the characteristics of that field. Each view field maps to a Model 204 physical field.

Used by: Access/204 View Management, PC/204, Screen and Action Generator, and Query/Update.

Defined through: Documentation facility, Query/Update

System Attributes

ENTITY	Value is VIEW FIELD.

CREATE DATE	Date the entry was created.
LAST UPDATED	Date the entry was last updated.
UPDATED-BY	Account that last updated this entry.
NAME	Name of the VIEW FIELD is required. The limit is 70 characters.

The uniqueness of a VIEW FIELD name can be maintained by concatenating a VIEW name to the front of the VIEW FIELD name. The format is *<view_field_name>* or *<view_name.view_field_name>*.

Attributes

SHORT DESCRIPTION	Brief description of the view field. The limit is four screen-lines. This description appears as part of the header when a report is displayed through the Dictionary Reports facility.
	This description is also used as the HELP text by PC/204.
DESCRIPTION	More detailed description of the view field, which provides extended documentation. There is no limit on the number of lines of text.
KEYWORD	Keywords can be used to retrieve related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternative names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.
CONVENIENT WIDTH	Width that is used initially to display Model 204 data in this field to the user. The user can normally change the width while using the facility or product. The value must be an integer.
	The Query/Update default is the length of the column header for this view field.
	The Screen and Action Generator default is 20. The value is used to generate the maximum length of a screen item and to set the maximum length of the view field.
	Access/204 uses the PHYSICAL PICTURE attribute of the corresponding FIELD to determine the view field width. PC/204 does not use this attribute.

CONVENIENT OCCURS	Value is the number of convenient occurrences to be returned through this VIEW FIELD.
	If MULTIPLE OCCURS Y/N is set to Y, then Screen and Action Generator uses this value to generate the number of occurrences of SCREEN ITEM.
	The default is 2.
DERIVATION RULE	Used only by Access/204 View Management to store/retrieve the field derivation algorithm. See "Derived view fields" on page 27. Stored in Access/204 format, this attribute is not used by any other product or facility.
DEFAULT VAL	Value specifies the default for data entered for this view field. The attribute is used by the Screen and Action Generator to generate the default for a screen item.
DOMAIN	Value of this attribute indicates the type of data in the field. The value is CHARACTER, NUMERIC, or null. The PHYSICAL PICTURE entry of the FIELD is checked first by the products. If the required information is not there, then this attribute is checked. This information is also used to determine the search strategy, if the field is restricted.
	The PC/204 and Query/Update default is CHARACTER. Access/204 takes the information from the PHYSICAL PICTURE attribute of the corresponding field entry. The Screen and Action Generator uses this attribute to generate an alphabetic or numeric screen item.
JUSTIFICATION	Indicates whether the data is to be left or right justified on a display screen. This attribute is used only by Access/204.
	Left justification is the default for Access/204 View Management.
MULTIPLE OCCURS Y/N	Value for Query/Update and PC/204 is Y, N, or null; the default is N. Query/Update, Access/204, and PC/204 first check the physical FIELD attribute AVERAGE OCCURS for the information. If the value there is 1 or greater than 1, it uses that information. If the value there is null, it uses the value supplied for this attribute.
	For the Screen and Action Generator to generate multiple screen items, this attribute must be set to Y.
	CONVENIENT OCCURS defaults to 2 if this value is not set.

PART OF REC ID Y/N	Specifies whether or not this field is one of the fields that is used to uniquely identify a record in this view. Value is Y, N, or null.
	The Screen and Action Generator uses this attribute to determine which screen items are required, and it controls uniqueness when adding or updating view fields by checking that all the view fields that are part of the record ID uniquely identify the record.
	The Query/Update default is N. For PC/204, this attribute is used to remove duplicate records at the view level. The value is Y for a view field that uniquely identifies a record in the view.
POSITION	Query/Update generates this value automatically during view definition, thereby maintaining an entry order of the view fields. PC/204 and Access/204 use this attribute. Access/204 can use the attribute to identify view field positions required for setting up derived fields. In this case, the administrator must assign a position number for every view field to ensure a predictable order. It is recommended that the Access/204 administrator set up derived fields through the Access/204 Administrator's Dialogue.
	The Screen and Action Generator uses this attribute to order the screen items on a screen.
REPORT COLUMN HEADER	Used only by Access/204 View Management. The value for this attribute is a string, which becomes the default column header when this view field is displayed.
RESTRICTION	Screen and Action Generator automatically adds this attribute to the retrieval conditions. It requires that valid restriction values be specified when adding or updating records. If there is only one RESTRICTION attribute value, the value is automatically supplied when adding records.
	All facilities and products use the RESTRICTION attribute. Unless a value is entered here, no restriction is imposed on the value at the physical level. At the product- or facility-level, users can (further) restrict the records retrieved by view field values.

USER DISPLAY Y/N	Specifies whether or not this field is to be displayed to the user. The value is Y, N, or null. Data from an undisplayed field cannot be retrieved. Thus, this attribute can also be used to restrict the records selected.
	This attribute is used by the Screen and Action Generator to determine which view fields should have generated screen items mapping to them. Use the value N for restricted fields, if you do not want the restricted fields to be displayed. The Query/Update, PC/204, and Screen and Action Generator default is Y.
ONEOF	Attribute specifies a list of valid values for this VIEW FIELD. The format for entering values is the same as the ONEOF option in the INPUT statement in SOUL.
	The attribute is used by Screen and Action Generator to generate validation criteria for a screen item.
RANGEIS	Attribute is used by Screen and Action Generator to generate validation criteria for a screen item.
	This value specifies the range of valid values for this VIEW FIELD. The format is *<range_start_value,range_end_value>*. This is not a repeating value. To specify multiple ranges, add more *<range_start_value,range_end_value>* pairs. The multiple ranges are ORed. The limit is 3 pairs.
VERIFY	This attribute is used by the Screen and Action Generator to generate validation criteria for a screen item.
	The value is a list of characters that are valid for this VIEW FIELD. The format for entering values is the same as the VERIFY option in the INPUT statement in SOUL.

Relationships

MAPS TO	FIELD entry of a Model 204 field that contains the data for this view field. The value is the NAME of the FIELD entry.

DEPENDS ON	VIEW FIELD entries that functionally determine the values for this view field. This relationship is used only by PC/204.
	VIEW FIELD entries that uniquely determine the value of this view field (the "dependent" view field). For every unique combination of DEPENDS ON view field values, there is a single value for the dependent view field. PC/204 uses DEPENDS ON values to determine the value of the dependent view field, and to remove duplicate values during aggregation.

Referenced by

VIEW HAS	All views must have view fields.
VIEW LINK ON SOURCE, ON TARGET	All views must have view fields.
VIEW FIELD DEPENDS ON	PC/204 only.
SCREEN ITEM MAPS TO	Screen and Action Generator only.

VIEW LINK

A VIEW LINK defines a relationship between two VIEWs. A VIEW LINK has a source and target VIEW and defines the nature of the relationship and the operation used to connect the VIEWs. VIEW LINKs can be shared by COMPOSITE VIEWs.

Used by: Access/204 View Management and PC/204 only

Defined through: Documentation facility

System attributes

ENTITY	Value is VIEW LINK.
CREATE DATE	Date the entry was created.
LAST UPDATED	Date the entry was last updated.
UPDATED-BY	Account that last updated this entry.
NAME	Name of the VIEW LINK is required. The limit is 70 characters. Uniqueness of the name can be achieved by concatenating the names of the views it connects. The format is:
	<view_name_1.view_name_2>

Attributes

SHORT DESCRIPTION	Brief description of the view link. The limit is four screen-lines. This description appears as part of the header when a report is displayed through the Dictionary Reports facility.
DESCRIPTION	More detailed description of the view link, which provides extended documentation. There is no limit on the number of lines of text.
KEYWORD	Keywords can be used to retrieve related entries. There is no limit on the number of keywords you can specify. The limit for each KEYWORD is 50 characters.
ALIAS	Alternative names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

Relationships

HAS SOURCE	PC/204 supports VIEW LINKs that have the same VIEW defined for HAS SOURCE and HAS TARGET. The VIEW LINK joins the VIEW to itself; this allows records in the file to which the VIEW corresponds to be joined to other records in the file.
	Records are joined as they are in any COMPOSITE VIEW — that is, when the value of one record's ON SOURCE VIEW FIELD matches the value of another record's ON TARGET VIEW FIELD.
	Note: The ON SOURCE and ON TARGET "join fields" in the COMPOSITE VIEW can be the same VIEW FIELD, or two different VIEW FIELDs.
	A VIEW LINK that joins a VIEW to itself allows PC/204 to do retrievals by matching the values of source and target fields in the same file.
HAS TARGET	Value is a view name. The target view can be any view (including the source view in PC/204).
ON SOURCE	Value is a view field name. This is the source view field that is the basis for joining the target to the source view.
ON TARGET	Value is a view field name. This is the target view field view that is the basis for joining the target to the source view.

Referenced By

COMPOSITE VIEW USES	Normally uses one or more view links. However, a composite view can simply use a single view as a base view without using a VIEW LINK to any other views.
	Access/204 can define composite views with no more than nine nodes, or member views. This limits the number of USES relationships to eight view links.

3

Product Administration

Overview

This chapter addresses the data administrators of Dictionary/204, Workshop/204, Access/204, and PC/204. In a section devoted to each product, this chapter outlines the responsibilities of the administrators and references other chapters and manuals where the administrative tasks are documented.

The system manager determines the first account that has administrator privileges during installation. The system manager can authorize as many administrators as are required by the site. The dictionary administrator has privileges for the Dictionary Administration facility and all other Dictionary/204 facilities.

The system manager must also define the administrator in the ADMIN class for each subsystem by using the Subsystem Management facility.

This definition enables the dictionary administrator to START and STOP the Dictionary/204 subsystems and to authorize other ADMIN class users to START and STOP the subsystem.

The Subsystem Management facility is described in the Rocket Model 204 documentation wiki: http://m204wiki.rocketsoftware.com/index.php/System_requirements_f or_Application_Subsystems#Overview_of_the_Subsystem_Managem ent_facility.

Dictionary/204 administration

The dictionary administrator is responsible for the following tasks:

- Starting, stopping, and testing the Dictionary/204 subsystem

- Dictionary/204 file maintenance (for example, backing up, restoring, reorganizing dictionary files)

- Maintaining dictionary structure (for example, defining, deleting, and updating new entity types)

- Maintaining Dictionary/204 facilities (for example, setting parameters and defaults)

- Maintaining Dictionary/204 security (defining Dictionary/204 and Workshop/204 users and their privileges)

- Running DDGEN and DDGENSET utilities (defining and synchronizing existing Model 204 files in the dictionary)

Information about these tasks is provided in the following sections. For documentation of the remaining tasks, the sections refer the dictionary administrator to other chapters of this manual or to other manuals. Maintenance tasks, for example, are discussed in the Dictionary Administration facility, which is part of the Dictionary/204 product and described in Chapter 6.

Starting and stopping the Dictionary/204 subsystems

Administrators of Dictionary/204 start the subsystem as follows:

1. Log in to the Model 204 system by using the LOGIN or LOGON command as the Dictionary/204 administrator, and by using the account name defined by your system manager. Refer to the Model 204 wiki pages for a description of the Model 204 START and STOP commands:

   http://m204wiki.rocketsoftware.com/index.php/START_command:_Starting_an_application_subsystem

   http://m204wiki.rocketsoftware.com/index.php/STOP_command:_Stopping_an_application_subsystem

   Refer to the Rocket Model 204 installation instructions for your operating system for a discussion of modifying the JCL.

2. To start Dictionary/204, enter:

   ```
   START SUBSYSTEM DICTIONARY
   ```

3. To use Dictionary/204, enter:

   ```
   DICTIONARY
   ```

   This command invokes the Dictionary/204 subsystem after it has been started.

Note: Starting Dictionary/204 starts only the Dictionary/204 main menu. It does not automatically start the individual subsystems (or facilities) that make up the Dictionary/204 product.

You must start each subsystem independently, using the word SUBSYSTEM and facility name as the arguments of the START command.

The facility names are:

Facility	Facility Name
Access/204 View Management	ACCESSVIEW
Dictionary Administration	DICTADMIN
Dictionary Reports	DICTREPORT
Documentation	DOCUMENT
File Management	FILEMGMT
PC Volume Management	PCVOLMGMT
Subsystem Management	SUBSYSMGMT
User Language Cross-Reference	XREF

You can start all the subsystems along with starting Dictionary/204 by adding the START SUBSYSTEM commands to the CCAIN file for your Model 204 Online system. Consult your system manager about adding these commands to CCAIN.

If you are having trouble with one of the Dictionary/204 subsystems, you might want to delete the corresponding START command from CCAIN before starting Dictionary/204 and its other subsystems.

Typically, you stop Dictionary/204 subsystems at the end of the day. You might also need to stop the subsystems periodically to perform utility functions. For example, it might be necessary to stop the Dictionary/204 subsystems to open and use the individual files that make up the dictionary.

Refer to the Rocket Model 204 installation instructions for your operating system for a discussion of these utility functions. For information about more generalized Model 204 file maintenance, see the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/File_management_overview

To stop Dictionary/204, issue the following command:

```
STOP SUBSYSTEM DICTIONARY
```

After you issue the STOP command for Dictionary/204 and its subsystems, users cannot invoke the main menu or any of its subsystems. If no one is currently using the subsystem, Model 204 displays:

```
DICTIONARY STOPPED
```

If any Dictionary/204 facilities are in use when the STOP SUBSYSTEM command is issued, the following message is displayed on your terminal:

```
DICTIONARY SET TO STOP, REMAINING USERS = n
```

where *n* represents the current number of active users. Current users of Dictionary/204 are allowed to finish their work, but additional users cannot start a session. When all users have ended their sessions, Dictionary/204 is stopped.

This STOP command applies only to the Dictionary/204 main menu, the subsystem for which you have entered the STOP command. Each subsystem must be stopped individually, just as each must be started individually. If any other subsystems are running, users can still access them, but not through the main menu.

If you stop the Dictionary/204 (main menu) subsystem before stopping other Dictionary/204 facility subsystems, users who logged on to the other subsystems through the main menu receive an error message when logging off. The error, however, does not interfere with saving data or any other facility function.

Even though Dictionary/204 is now shut down, you as administrator are still logged on to Model 204 and can issue any of the Model 204 commands.

You can restart Dictionary/204 by typing the Model 204 command:

```
START SUBSYSTEM DICTIONARY
```

You can use the Model 204 BROADCAST command to send a message to subsystem users. After you send a message, it is displayed on a user's screen as soon as that user completes the current function and returns to a menu selection screen. The BROADCAST command can be used to alert subsystem users to end a session so that file maintenance or other utility functions can be performed. The BROADCAST command is described in detail in the Model 204 wiki pages:

http://m204wiki.rocketsoftware.com/index.php/BROADCAST_command:_Sending_a_file_message

If during a Dictionary/204 session a "DICTIONARY SESSION ERROR" occurs, you can use the TEST command to diagnose the problem. The TEST command displays all messages on your terminal. From these messages, you can determine the source of the session error and resolve the problem. To run the TEST command, you must first stop Dictionary/204. This is necessary, because the command puts Dictionary/204 in a single-user mode while the system displays all messages to the terminal.

To use the TEST command, issue the following commands:

```
STOP SUBSYSTEM DICTIONARY
TEST DEBUG DICTIONARY
```

You can either try to duplicate the session with the TEST command or consult the audit trail for a listing of the messages.

Dictionary/204 file maintenance

See the relevant sections of the Rocket Model 204 installation instructions for your operating system.

Defining and maintaining Dictionary/204 structure

Use the Dictionary Administration facility, described in Chapter 6.

Maintaining Dictionary/204 facilities

Use the Dictionary Administration facility, described in Chapter 6.

Maintaining Dictionary/204 security (defining Dictionary/204 users)

Use the Dictionary Administration facility, described in Chapter 6.

DDGEN and DDGENSET utilities

You can use the DDGEN utility (a Dictionary/204 subsystem) to create or update dictionary entries that describe the characteristics and contents of existing Model 204 files. The DDGEN utility enables you to populate your dictionary with entries for physical files, fields, field groups, records, and procedures. Following the completion of DDGEN, you can use Dictionary/204 to add any desired attributes or values to these entries. DDGENSET is a supplementary utility for DDGEN that creates a file of file names from existing dictionary entries, enabling you to edit the list of files to run through DDGEN. DDGENSET updates the entries. You can run DDGEN against as many as 100 files at one time.

Before you can update Dictionary/204 files with external procedures, you must have the required update privileges.

Note: Transaction backout files must be updated without accessing non-transaction-backout files.

DDGEN and standard definitions

For each file that is processed, DDGEN creates or updates the following dictionary entries:

For this item...	One entry is added to the dictionary...
FILE	For file parameters and table sizes for the file
PROCEDURE	For each procedure in the file, along with any of its aliases
FIELD	For each field in the file to specify the attributes of the field
RECORD	If there is no record defined for the file

References from the FILE entry to each FIELD, and from the FILE entry to each PROCEDURE are also created when DDGEN is run.

When running DDGEN, you must ensure that the attributes required by DDGEN are not deleted from the entity type definitions.

Note: If any of these required attributes have been deleted from the entity type definitions, you can add the attributes again with the Dictionary Administration facility (by selecting the Entity Type Maintenance option).

When DDGEN stores an entry in the dictionary, the utility writes the entry to a report file (OUTFILE). You can optionally send the report to CCAPRINT. If the dictionary already contains an entry with the same name as the file, procedure, or field being stored, the entry is updated and a message is written to both the CCAPRINT data set and the Model 204 journal or audit trail.

Item	Required attributes
FILE	DDGEN creates a FILE entry for the Model 204 file that it is processing. The values for the FILE attributes are derived from the parameters or table sizes defined for the Model 204 file.
	A list of the FILE attributes can be found in Appendix A, where the FILE entity type is defined.
FIELD	DDGEN creates a FIELD entry for each field defined for the Model 204 file. The values for the FIELD attributes are derived from the field definition statements for the Model 204 file.
	A list of the FIELD attributes can be found in Appendix A, where the FIELD entity type is defined.
PROCEDURE	DDGEN creates a PROCEDURE entry for each procedure defined for the file.
	Each entry consists of attributes and relationships that are defined in Appendix A, where the PROCEDURE entity type is defined.
	One occurrence of the ALIAS attribute is added to the PROCEDURE entry for each alias associated with the procedure.
RECORD	DDGEN creates a record entry, if no record exists for that file. The record is given the UNQUALIFIED NAME *<filename>*. Thus, the (unique) NAME of the entry will be *<filename.filename>*.
	Additionally, all preallocated fields will be cross-referenced to a RECORD entry.
	See Appendix A for information about the attributes of the RECORD entity type.

Using the Batch utility to run DDGEN

Use the DDGEN Job and/or the DDGENSET Job (z/OS or z/VSE) or the DDGEN option of the D204 EXEC (z/VM) to run the DDGEN utility. Customize this Job or EXEC for your installation, as described in your installation guide. (Consult the relevant chapter of your installation guide.) You must specify a DD statement (z/OS); DLBL, EXTENT, and ASSIGN (z/VSE); or LINK, ACCESS, and FILEDEF (z/VM) for the multiple Model 204 files to be used. You must also specify this filename in the CCAIN (User 0) along with a password, if required. You can specify up to 100 Model 204 files in a single DDGEN run.

The following example shows the CCAIN stream for DDGEN when run in batch mode:

```
PAGESZ=6184,SPCORE=20000,SERVSIZE=180000,LGTBL=1000,NFILES=110, X
NDCBS=110,NDIR=110,INCCC=0,MINBUF=10,LENQTBL=6000


******************************************************************
* MAKE THE FOLLOWING MODIFICATIONS TO THIS CCAIN INPUT STREAM: *
* 1) USERID = THE PRIVILEGED ID *
* 2) PASSWORD = THE PASSWORD FOR THAT ID *
* 3) ENTER FILENAME AND FILE PASSWORDS AS SPECIFIED BELOW *
* 4) THE WORD "END" MUST FOLLOW THE LAST FILE,PASSWORD ENTERED *
* NOTE: OUTFILE REFERS TO THE REPORT FILE FOR THE RUN *
* OUTDDGN IS THE TEMPORARY WORK FILE FOR THE RUN *
******************************************************************
LOGON USERID
PASSWORD
START SUBSYS DDGEN
DDGEN
OUTFILE
OUTDDGN
*ENTER FILENAME 001 *
*ENTER FILENAME 001 PASSWORD OR BLANK LINE *
*ENTER FILENAME ... *
*ENTER FILENAME ... PASSWORD OR BLANK LINE *
*ENTER FILENAME 100 *
*ENTER FILENAME 100 PASSWORD OR BLANK LINE *
END
```

As the CCAIN stream indicates, OUTFILE is the name of the report file for the batch run. OUTDDGN is the name of the work file that you must specified for this batch run.

The OUTDDGN record format must be FBA.

Running DDGEN Online

DDGEN can be run Online with certain restrictions. Each user who runs DDGEN must have an exclusive report OUTFILE and work OUTDDGN file. This is necessary to maintain the integrity of the report and of the updates.

Optionally, the report can also be routed to the screen, but an exclusive work file is required in any case.

To run DDGEN Online, follow the flow of the CCAIN stream for DDGEN shown in "Using the Batch utility to run DDGEN" on page 57. Although the first two lines (or the User 0 line) are not necessary to run DDGEN Online, be sure that all the relevant parameters are set to values at least equal to those given in the example. Follow these steps:

1. Log in to Model 204.

2. Issue the command START SUBSYS DDGEN.

3. To run the job, type:

   DDGEN

4. You are prompted for the report OUTFILE filename. Enter the report outfile name for spooled output, or press enter to have the report printed on the screen.

5. You are prompted for an exclusive work OUTDDGN. Enter the name of the work OUTDDGN. For each file to run through DDGEN, you are prompted for a filename and then a password. Press Enter to receive prompts for additional files to be processed.

6. To end the entry of filenames, enter END for the file name and press Enter. To cancel the DDGEN run, enter QUIT for the file name (instead of END) and press Enter.

You can process up to 100 files in a single run. It is recommended that you start with only a few files to determine how long it takes to run DDGEN in your environment.

Modifying and running DDGENSET

The DDGENSET job can be used as a front end to the DDGEN job described in "Running DDGEN Online" on page 57. DDGENSET reads your installation's dictionary and automatically creates the CCAIN stream. For z/VSE it creates the step override statements for DDGEN JCL. For z/OS, it creates the FILEDEF statements to be included in D204FDEF EXEC.

DDGENSET processes existing dictionary entries only. Each entry must contain valid data set and DDname attribute values. If there are more than 100 files in your dictionary (the limit for DDGEN), DDGENSET creates multiple sets of CCAIN and step override statements.

After DDGENSET has created statements, be sure to edit these statements to specify any missing data set or password information and to delete files that do not actually exist as Model 204 files.

Replace...	With...
USERID	Your installation's privileged system manager login account name.
PASSWORD	Password for the USERID account name.

Refer to your Model 204 installation guide for more information.

Note: Run DDGENSET in batch mode to help prepare you for a batch run of DDGEN.

Recovering from system problems

When a system error (for example, a system crash) causes you to exit from a Dictionary/204 facility, the protection (or lock) for the data you were using at the time of the error might not be returned. This occurs because the subsystem error routines cannot run. If this happens, the dictionary administrator must run the procedure SHRO.LOCKFREE to maintain the lock for the data.

Also, if an individual user is restarted, locks can be restored by running SHRO.LOCKFREE.

(See the appropriate sections of the Rocket Model 204 installation instructions for your operating system for more information.)

To run SHRO.LOCKFREE:

1. Open M204TEMP.

2. Enter:

   INCLUDE SHRO.LOCKFREE

   This utility deletes the locks for specified entries.

3. You are prompted to provide the entity type and entry name. Specify the entry, or, to quit the utility, press Enter in response to this prompt.

4. If you specify the entry, press Enter. The system displays a message confirming that the lock has been freed.

Locks are maintained across sessions for files. Thus, the utility leaves the file locked to the same user ID.

Workshop/204 administration

Starting and stopping the Workshop/204 subsystems

The name of the Workshop/204 subsystem is Workshop/204. Follow the instructions provided for starting and stopping the Dictionary/204 subsystem in "Starting and stopping the Dictionary/204 subsystems" on page 52.

Starting Workshop/204 starts only the Workshop/204 main menu. It does not start the individual subsystems (or facilities) that make up the Workshop/204 product. Each Workshop/204 facility must be started independently, using the facility name as the argument of the START SUBSYSTEM command. The facility names are:

Facility	Facility Name
Procedure Editor	PROCEDIT
Query/Update	QUERYUPDT
Screen and Action Generator	SCREENGEN
Screen Painter	PAINTER
Single-Step Test	SSTEST

You can start all the subsystems, including the Workshop/204 subsystem, by adding the START SUBSYSTEM commands to the CCAIN file for your Model 204 Online system. Consult your system manager about adding these SUBSYSTEM commands to CCAIN.

If you are having trouble with one of the Workshop/204 subsystems, you might want to delete the corresponding START SUBSYSTEM command from CCAIN before starting Workshop/204 and its other subsystems.

Setting Screen and Action Generator defaults

Setting default file names and procedure names for the Workshop/204 Screen and Action Generator facility is accomplished by using the Facility Administration function of the Dictionary Administration facility. See Chapter 6 for more information.

Setting Query/Update defaults

The Query/Update facility lets you create and maintain views of data files, and enter, retrieve, and update the data in those files without writing any SOUL (User Language) code. It is a powerful prototyping tool, allowing you to design and redesign the data views and to create other views derived from the initial base views.

The Query/Update data administrator maintains security and controls access to the facility's features in a manner consistent with its view-oriented structure. The administrator uses the following system views:

- VIEWS view

- VIEW FIELDS view

- SYSTEM PARAMETERS view

Maintaining these views is the responsibility of the Query/Update (or Workshop/204) administrator. The system views are described in "Query/Update system views" on page 63.

Query/Update and Dictionary/204 entity types

When Query/Update defines a view of the data, it creates entries in the dictionary that define the view and control access to the data described in the view, as well as controlling access to the view description itself. The entity types used by the Query/Update facility are:

- FILE

- FIELD

- VIEW

- VIEW FIELD

- ACCOUNT

- DEVELOPER DEFAULTS

The following sections describe the definition phases of the facility interface and the dictionary entries involved in each phase.

Logical view field definition

Enter the name of a previously undefined view, which initiates the Logical View Field Definition Phase. Supply various descriptions of the view, including the names, sizes, and display characteristics of the view field.

Physical view field definition

When the Logical phase has been completed, Query/Update enters the Physical View Field Definition Phase, if the referenced file is DEVDATA and a new view field is being defined. Enter descriptions of the Model 204 fields to which the view fields are linked. If the file referenced is not DEVDATA, use the File Management facility to define the fields before using the view with Query/Update. New DEVDATA fields can be defined without using the File Management facility.

View security definition

The final phase is the Security Phase, in which you identify the account names of users allowed to read and/or update the data described by the view. This view security feature is administered within Query/Update using the Query/Update screens similar to those shown in the following sections.

If the account is unknown to the dictionary, an entry is created for it. Then a relationship is created that describes the connection between the account and the view. The user who has created the view is listed as the view OWNER. The owner can transfer ownership to the account of another user. Only the owner of the view can see or modify the security for that view; changing the owner yields control to the new owner. The owner also has the ability to give UPDATE access to the view data by listing a user account in the UPDATERS column of the Security screen. UPDATE access also implies READ access to the view data. If read-only access is the only access needed for a user, that user account can be listed in the READERS column of the Security screen. Any user not listed on a Security screen is prohibited from using the view.

```
QUERYUPDT                    Security Definition            Page   1  of   1

VEHICLES                    | OWNER      | UPDATERS    | READERS
------------------------------------------------------------------------------------
                            | ADJANET    | JLSMITH     | PJONES
                            |            |             |
                            |            |             |
                            |            |             |
                            |            |             |
                            |            |             |
                            |            |             |
                            |            |             |
                            |            |             |
                            |            |             |

Security definition for view VEHICLES


===>


1=HELp      2=           3=QUIt       4=          5=          6=
7= BACk     8=FORward    9=PERform    10=         11=         12=
```

Query/Update system views

The system views for Query/Update are updated through the Query/Update interface using Query/Update screens similar to those shown in the following sections.

Query/Update is installed with three views of its own that control the environment in addition to view security.

VIEWS view

The VIEWS view is the master control for Query/Update view definition. The Display Phase screen of the Query/Update facility controls the access to the data for this view. In this case, however, the data is a list of the views with which the user has some connection (that is, the views that the user either owns, reads, or updates).

The user listed as a reader of the VIEWS view can display only views with a READS access level. If the user is an updater of the VIEWS view, the user can define new views. Only users whose accounts are listed as updaters on the Security screen for the VIEWS view are allowed to create views through Query/Update. The owner of the VIEWS view controls overall security. The owner of the VIEWS view is the Query/Update administrator.

At installation, there are three system views. The VIEWS view is owned by the data administrator, whose account is supplied during installation. Initially, therefore, no other users are listed on the VIEWS view Security screen, and their names must be entered by the administrator before Query/Update can be used by others.

```
 _____
/                                                                 \
|  QUERYUPDT                     Display Phase                     |
|                                                                 |
|  Page 1 of 1                                        Line 1 of 14 |
|                                                                 |
|  VIEWS   | *VIEW NAME                   | *ACCESS LEVEL          |
|  -------------------------------------------------------------- |
|  | OPTION VIEW| -OWNS                                           |
|  | VIEWS| -UPDATES                                             |
|  | VIEWS| -READS                                               |
|  | VIEW FIELDS| -READS                                         |
|  | VEHICLES| -READS                                            |
|  | DVEHICLES| -OWNS                                            |
|  | SYSTEM PARAMETERS| -READS                                   |
|  | VIEW FIELDS| -UPDATES                                       |
|  | VEHICLES| -UPDATES                                          |
|  | CLAIMS80| -READS                                            |
|  | CLAIMS80| -UPDATES                                          |
|  | TONY2| -READS                                               |
|  | TONY2| -UPDATES                                             |
|  | VEHICLES VIEWS| -OWNS                                       |
|                                             VIEW PAGE (+/-)NN    |
|  ===>                                                           |
|                                                                 |
|  1=HELp     2=          3=QUIt      4=         5=        6=ZOOm  |
|  7=BACk     8=FORward   9=QUEry     10=LEFt    11=RIGht  12=     |
_____/
```

VIEW FIELDS View

The VIEW FIELDS view is displayed with the fields grouped by the views to which they belong. Like the VIEWS view, data is displayed only for those views that the user owns, reads, or updates. The Security screen is the interface for controlling who can read the characteristics of the view fields for the views they own. Update access to view fields is implicit in the update access to views.

At installation, only the view fields for the Query/Update system views exist, and only the data administrator has read access for the VIEW FIELDS view. Like the VIEWS view, updates through this view are not allowed. The following screen is a sample VIEW FIELDS view for a TESTVIEW.

```
 QUERYUPDT                    Display Phase

 View Fields      | TESTNM        | TESTADDR      | TESTZIP|       | OTHER
 ----------------------------------------------------------------------------------------------
 Domain           | CHARACTER     | CHARACTER     | CHARACTER      | CHARACTER
 Conv width       | 10            | 8             | 7              | 5
 Rec id Y/N       | N             | N             | N              | N
 Mult Occ Y/N     | N             | N             | N              | N
 M204 Name        | NAME          | ADDRESS       | ZIP CODE       | FIELD1
 Display Y/N      | Y             | Y             | Y              | Y
 Restriction      |               |               |                |




 Field definitions for view:    TESTVIEW

 ===>                                                        VIEW QUERY


 1=HELp      2=NARrow     3=QUIt        4=            5=WIDen      6=
 7=BACk      8=NEXt       9=QUEry       10=LEFt       11=RIGht     12=
```

SYSTEM PARAMETERS View

The SYSTEM PARAMETERS view shows the values stored in the DEVELOPER DEFAULTS entries in the dictionary. Initial values are set during installation and are displayed to the user during the View Definition phases. The installation values correspond to the Model 204 defaults.

For example, the default value for the characteristic that indicates whether or not a Model 204 field KEY is no (that is, NONKEY) and so the default value for the FIELD's KEY attribute is N when it is displayed during the Definition Phase.

Some attributes are not initially included, because they are not applicable as defaults, such as PREALLOCATED OCCURRENCES. However, because the needs of an individual site might be different from the distributed default values, the SYSTEM PARAMETERS view is provided to allow you to add or change the defaults.

Users specified on the Security screen as READERS can view the existing default values. UPDATERS can change the default values in the SYSTEM PARAMETERS view. An additional feature is a field in the SYSTEM

PARAMETERS view that specifies whether or not the default value can be overridden during view definition. The combination of these features gives the data administrator control over the view definition process. For example, the data administrator might specify that the default setting for a field is KEY rather than NONKEY, or that the default is NONKEY and cannot be changed.

```
QUERYUPDT                  Display Phase
     Page 1 of 1                                               Line 1 of 14

 SYSTEM PARAMETERS |  *TYPE |  *ATTRIBUTE                  | VALUE    | MOD?
 -------------------------------------------------------------------------------------------------------

 | FIELD  | KEY                              | N          | Y
 | FIELD  | FRV | N | Y
 | FIELD  | NUMERIC RANGE | N | Y
 | FIELD | NUMBER UNIQUE VALUES | | Y
 | FIELD | VALUED | | Y
 | FIELD | SIGNIFICANT DIGITS | | Y
 | FIELD | CODED | N | Y
 | FIELD | PREALLOCATED LENGTH | | Y
 | FIELD | PREALLOCATED OCCURREN | | Y
 | FIELD | PAD | | Y
 | FIELD | STRING OR BINARY | S | Y
 | FIELD | DEFERRABLE | | Y
 | FIELD | AVERAGE LENGTH || Y
 | FIELD | UPDATE IN PLACE | Y | Y
 | FIELD | AVG OCCURRENCES | | Y
                                           ===>
 VIEW PAGE (+/-) NN

  1=HELp      2=            3=QUIt          4=           5=          6=ZOOm
```

One additional parameter is the MAX RECORD setting, which specifies the limit for the number of records that can be accessed by a particular retrieval or update. The initial setting is 1000. This default can be set to a lower value. In a test environment, a lower limit prevents unnecessary processing.

Setting Screen Painter defaults

Screen Painter is designed to speed the application development process through the interactive design and maintenance of User Language screens. You can use this tool to create, modify, delete, and display screens. Because this facility is fully integrated with Dictionary/204, it allows you to see the procedures that use a screen and the screens that comprise an application.

Screen Painter maintains Dictionary/204 entries and relationships for the following entity types:

• PAINTER DEFAULTS

• SCREEN

• SCREEN ITEM

• PROCEDURE

• FILE

When a screen is created using this facility, these entity types are used in the following manner:

• Default attributes for a screen are taken from the named PAINTER DEFAULTS entry (if the name is omitted, they are taken from the entry named DEFAULT).

• SCREEN entry is created that references each SCREEN ITEM entry for that screen.

• PROCEDURE entry is created that corresponds to the generated User Language screen definition procedure.

• Reference is created between the PROCEDURE and FILE entries, indicating that the file in which the screen procedure is stored.

• Reference is created between the PROCEDURE and SCREEN entries, indicating that the procedure that defines the screen.

• Reference is created between the PAINTER DEFAULTS and SCREEN entries, indicating that the defaults are used in that screen.

The following information can be defined only by using the Dictionary/204 Documentation facility:

• All other references, such as references that specify procedures that use a screen

• PAINTER DEFAULTS entries (analogous to the entry called DEFAULT)

• User-defined attributes for any of the entries noted above

Screen Painter enables users to obtain reports at the terminal for the following references:

• Screens that use a particular PAINTER DEFAULTS entry

• Procedures that use a particular screen (if references are updated by using the Dictionary/204 Documentation facility)

Using the PAINTER DEFAULTS entry

The PAINTER DEFAULTS entries define sets of defaults that can be used in screens created by Screen Painter. These defaults specify the color and display options of screen titles, prompts, and input items for READ, REREAD, and PRINT SCREEN statements. When creating a new screen using Screen Painter, you can request that a set of default attributes for the screen be taken from a specific PAINTER DEFAULTS entry.

You can use the PAINTER DEFAULTS entity to define a set of defaults for each of your applications. Using the Screen Default Attributes screen in this facility is not the same as defining a set of defaults. Defaults assigned within the facility apply only to individual screens; however, a PAINTER DEFAULTS entry, or set of defaults, can be applied to any screen.

Example An application has a PAINTER DEFAULTS entry named APPLIC1, which specifies the following screen default attributes for all screens written for that application:

- Titles always appear bright.

- Prompts always appear white.

- Inputs appear blue for READ and REREAD.

- Inputs appear red for print.

- Tag character is a question mark.

- Tagged fields appear yellow and are displayed blinking.

- Screens are stored in file APPLIC1.

You must define a PAINTER DEFAULTS entry through the Documentation facility. A sample, based on these specifications, is shown on the following screens. These screens are available using the Dictionary/204 Documentation facility (see Chapter 8).

```
  DOCUMENT                          Add Entry Attributes


   Name: APPLIC1
   Entity type: PAINTER DEFAULTS
   Create Date: 31 JUL 90
  Short desc.: This entry defines a set of default attributes for a
  : test application.
  :
  :








  ===>

   1=HELp        2=           3=QUIt        4=           5=           6=
   7=            8=FORward    9=            10=          11=REF       12=END
```

```
╭─────────────────────────────────────────────────────────────────────────╮
│                                                                           │
│   DOCUMENT                   Add Entry Attributes              Line 1 of 13│
│                                                                           │
│                                                                           │
│    Name: APPLIC1                                                          │
│    Entity type: PAINTER DEFAULTS                                          │
│    Create Date: 31 JUL 90                                                 │
│                                                                           │
│   _ DESCRIPTION :                                                         │
│   _ KEYWORD :                                                             │
│   _ ALIAS :                                                               │
│   _ INPUT PRINT COLOR  : RED                                              │
│   _ INPUT PRINT OPTION :                                                  │
│   _ INPUT PRINT COLOR  : BLUE                                             │
│   _ INPUT PRINT OPTION  :                                                 │
│   _ INPUT PRINT COLOR : BLUE                                              │
│   _ INPUT PRINT OPTION :                                                  │
│   _ INPUT PRINT COLOR  : WHITE                                            │
│   _ INPUT PRINT OPTION  :                                                 │
│   _ INPUT PRINT COLOR  : WHITE                                            │
│   _ INPUT PRINT OPTION  :                                                 │
│                                                                           │
│                                                                           │
│   ===>                                                                    │
│                                                                           │
│   1=HELp       2=          3=QUIt         4=          5=          6=       │
│                                                                           │
╰─────────────────────────────────────────────────────────────────────────╯
```

```
DOCUMENT                    Add Entry Attributes              Line 12 of 24


 Name: APPLIC1
 Entity type: PAINTER DEFAULTS
 Create Date: 31 JUL 90

_ PROMPT RREAD COLOR : WHITE
_ PROMPT RREAD OPTION :
_ TAG CHAR : ?
_ TAG COLOR : YELLOW
_ TAG OPTION : BLINK
_ TITLE PRINT COLOR : BRIGHT
_ TITLE PRINT OPTION :
_ TITLE RREAD COLOR : BRIGHT
_ TITLE RREAD OPTION :
_ TITLE RREAD COLOR : BRIGHT
_ TITLE RREAD OPTION :




===>

1=HELp       2=         3=QUIt       4=          5=         6=
```

Using the selection screen on the next page, instead of defining a PAINTER
DEFAULTS entry, means that the defaults apply to a single screen. The
following screen shows how the Screen Default Attribute screen looks if the
same default attributes are assigned through the Screen Painter facility.

```
 _____
/                                                                   \
|   PAINTER                    Screen Default Attributes             |
|                                                                    |
|                  Brt Blue Grn Pink Red Turq Wht Yel Blink Rev Uscr Inv Prot |
|   TITLE      Read:   X    _   _   _   _   _    _   _    _    _    _   _   _ |
|            Reread:   X    _   _   _   _   _    _   _    _    _    _   _   _ |
|             Print:   X    _   _   _   _   _    _   _    _    _    _   _   _ |
|                                                                    |
|   PROMPT    Read: _    _   _   _   _   _    X   _    _    _    _   _   _    |
|           Reread: _    _   _   _   _   _    X   _    _    _    _   _   _    |
|            Print: _    _   _   _   _   _    X   _    _    _    _   _   _    |
|                                                                    |
|   INPUT     Read: _    X   _   _   _   _    _   _    _    _    _   _   _    |
|           Reread: _    X   _   _   _   _    _   _    _    _    _   _   _    |
|            Print: _    _   _   _   _   _    _   X    _    _    _   _   _    |
|                                                                    |
|                                                                    |
|                                                                    |
|    Tag Char:    ?          _   _    _   _   _    _    _   X   X         |
|                                                                    |
|   ===>                                                              |
|                                                                    |
|   1=HELp        2=             3=QUIt         4=          5=          6=    |
|   7=            8=             9=             10=REInit   11=         12=END |
_____/
```

Access/204 administration

Starting and stopping the Access/204 subsystem

The name of the Access/204 subsystem is ACCESS. Follow the instructions provided for starting and stopping the Dictionary/204 subsystem in "Starting and stopping the Dictionary/204 subsystems" on page 52.

Access/204 Administrator's Dialogue

Many of the administrator's tasks are carried out through the Access/204 Administrator's Dialogue, which is an online interface that is part of the Access/204 product.

Administrators can define views for use with Access/204 using the Administrator's Dialogue. To define views that can be shared by other products and facilities, use the Dictionary/204 Documentation facility described in Chapter 8.

Access/204 view definition and view management

The Access/204 administrator must define views so that Access/204 users can make queries and obtain reports. See Chapter 2, which describes views and how to define them. Views defined using the Dictionary/204 Documentation facility can be shared by other products and by Workshop/204 facilities.

Also see Chapter 5, which describes the use of the Dictionary/204 Access/204 View Management facility to download view definitions from the dictionary to Access/204.

The Access/204 View Management facility is a subsystem that is part of the Dictionary/204 product. Its subsystem name is ACCESSVIEW. To use Access/204 View Management, you must first start the Access/204 View Management subsystem, unless it has already been started by the Dictionary/204 administrator. If you need to start this facility, use the method described in "Starting and stopping the Dictionary/204 subsystems" on page 52, substituting the name ACCESSVIEW for Dictionary/204.

PC products administration

PC volume management

PC/204 administrators use PC Volume Management to maintain mainframe PC-type volumes. These volumes provide PC users with the virtually unlimited storage capacity and data sharing capabilities of a mainframe computer. With access to mainframe PC volumes, PC users can upload PC files to the mainframe, perform operations on the uploaded files from the PC, create and store procedures on the mainframe, and transfer files to other PC users.

Dictionary/204 PC Volume Management facility performs these specific tasks:

- Formats "target" Model 204 files as mainframe PC volumes

- Attaches and detaches mainframe drive designators to the volumes

- Removes mainframe PC volumes from the list of available volumes

See Chapter 10 for more information.

The PC/204 Volume Management facility is a subsystem that is part of the Dictionary/204 product. Its subsystem name is PCVOLMGMT. To use PC/204 Volume Management, you must first start the subsystem, unless it has already been started by the Dictionary/204 administrator. If you need to start this facility, use the method described in "Starting and stopping the Dictionary/204 subsystems" on page 52, substituting the name PCVOLMGMT for Dictionary/204.

PC/204 View Management

PC/204 administrators define views for PC users from the dictionary. The contents of a view determine the type and quantity of data that a user can download from Model 204 into a spreadsheet or table.

For more information, see Chapter 8. This chapter describes the characteristics of views and the entity types that make up views. The chapter also lists the facilities that administrators use to define views. Views are most readily defined by the Dictionary/204 Documentation facility, which is described in Chapter 8.

4

Using Dictionary/204

Overview

In Chapter 1, the Model 204 database dictionary is compared loosely to the common lexical dictionary on your desktop. Because the online database dictionary is much more flexible and dynamic, there is more involved in its use than simply looking up entities alphabetically by their names. In fact, several specialized facilities enable you, depending on your user privileges, to access information about particular entity types, specific entries, or relationships between entries; other facilities let you define new entries, attributes, and relationship, and add or modify information about existing entries.

Dictionary/204 also includes facilities to control data administration for these Rocket Software products: Workshop/204, Access/204, PC/204, and Dictionary/204 itself.

Security considerations

The Dictionary/204 main menu displays a list of the facilities you have privileges to use. The dictionary administrator defines each user's privileges by updating the user's ACCOUNT entry through a Dictionary Administration interface described in Chapter 6. The Dictionary/204 installation procedure gives the dictionary administrator user privileges for all Dictionary/204 facilities.

When you have privileges to use a Dictionary/204 facility, no distinction is made between update and read-only privileges. Access to a facility implies the ability to use whatever functionality that facility allows, except for conflicts with the your Model 204 privileges.

Dictionary/204 users are limited by their Model 204 privileges. Model 204 restrictions override facility privileges. For example, as a File Management facility user, you can define or update file attributes, but you cannot create a new file, if your Model 204 privileges do not include that function (that is, superuser privileges). These restrictions are implemented through the facility commands. In the Workshop/204 Screen Painter, for example, attempting to delete a procedure (without the required privileges) causes the system to display an error message.

Facility restrictions are also implemented through the main menu. As noted, if you are not an authorized user of a particular facility, the main menu does not display that facility as a choice. If you attempt to invoke the facility from a command line (using the INVOKE command), the system prevents this and displays an error message.

The Documentation facility allows users to document data that is not updated automatically by the system or through the controlled interface of another facility. Users with Documentation facility privileges can add descriptive data to the dictionary for all entity types, even those used by facilities from which the user is restricted. For example, users who have access to the Documentation facility can document the DESCRIPTION of a file, even if they are restricted from using the File Management facility, because the DESCRIPTION attribute is not system-controlled.

The dictionary administrator can restrict a user's Documentation facility privileges by specifying which entity types the user is allowed to update. For details, see Chapter 8.

Users without Documentation facility privileges can update only those entries used by facilities for which they do have privileges. For example, a Workshop/204 Procedure Editor user can issue the DOCUMENT command from the Model 204 command prompt and update the DESCRIPTION attribute (or some other nonsystem controlled attribute) of the procedure, even without Documentation facility privileges. Users can also invoke the facility from a Dictionary/204 or Workshop/204 primary screen, or issue the DOCUMENT command from facilities that support it.

Logging on to Dictionary/204

To initiate a Dictionary/204 session, from Model 204 command level:

1. Connect to Model 204 through the appropriate teleprocessing interface; see the *Rocket Model 204 Terminal User's Guide* for instructions.

2. Log on to Model 204.

3. At the Model 204 command level prompt (>), type:

    `DICTIONARY`

    Press Enter. If the dictionary administrator has not started the Dictionary/204 subsystem, called Dictionary/204, the following message is displayed:

```
M204.1126: SUBSYSTEM DICTIONARY MUST BE STARTED
```

To have the Dictionary/204 subsystem started, contact your dictionary administrator.

To initiate a Dictionary/204 session from a Workshop/204 facility, type on the command line:

===>INVoke DICTIONARY

In this case, if the Dictionary/204 subsystem has not been started, the following message appears:

SHR003: INVOKE'd facility not currently active

To have the Dictionary/204 subsystem started, contact your dictionary administrator.

If you are not an authorized Dictionary/204 user, the system prevents you from logging on to Dictionary/204 and displays an error message.

Logging on to the Dictionary/204 facilities

Dictionary/204 is composed of a set of subsystems: one for each facility, and a subsystem for the main menu.

To log on to Dictionary/204 facilities, you can either use the facility name from Model 204 command level, or use the Dictionary/204 main menu.

If you have the required user privileges, you can call an individual facility by typing its facility name at the Model 204 command prompt. Facility names are:

Facility	Facility Name
Access/204 View Management	ACCESSVIEW
DDGEN	DDGEN
Dictionary Administration	DICTADMIN
Dictionary Reports	DICTREPORT
Documentation	DOCUMENT
File Management	FILEMGMT
PC Volume Management	PCVOLMGMT
Subsystem Management	SUBSYSMGMT
User Language Cross Reference	XREF

Note: System manager privileges are required to use the Subsystem Management facility. For more information on this facility, see the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/System_requirements_for_App
lication_Subsystems#Overview_of_the_Subsystem_Management_facility

Dictionary/204 main menu

The Dictionary/204 main menu provides a simple means of selecting one of the
Dictionary/204 facilities.

Your screen might differ from the one shown here, if you have not been defined
as a user of all Dictionary/204 facilities. If you have not been given user
privileges for a facility, the facility name does not appear as an option on your
main menu. Moreover, option 7 involves the administration of Access/204. If
this product is not installed at your site, the option does not appear on your
menu.

```
DICTIONARY                    Main Menu                         Release N.n


 1. Dictionary Administration

 2. Documentation and View Definition

 3. Dictionary Reports

 4. File Management

 5. Subsystem Management

 6. User Language Cross Reference

 7. ACCESS/204 View Management



 Enter Number:
 ===>
 1=HELp     2=          3=QUIt        4=          5=          6=
 7=         8=          9=            10=         11=         12=
```
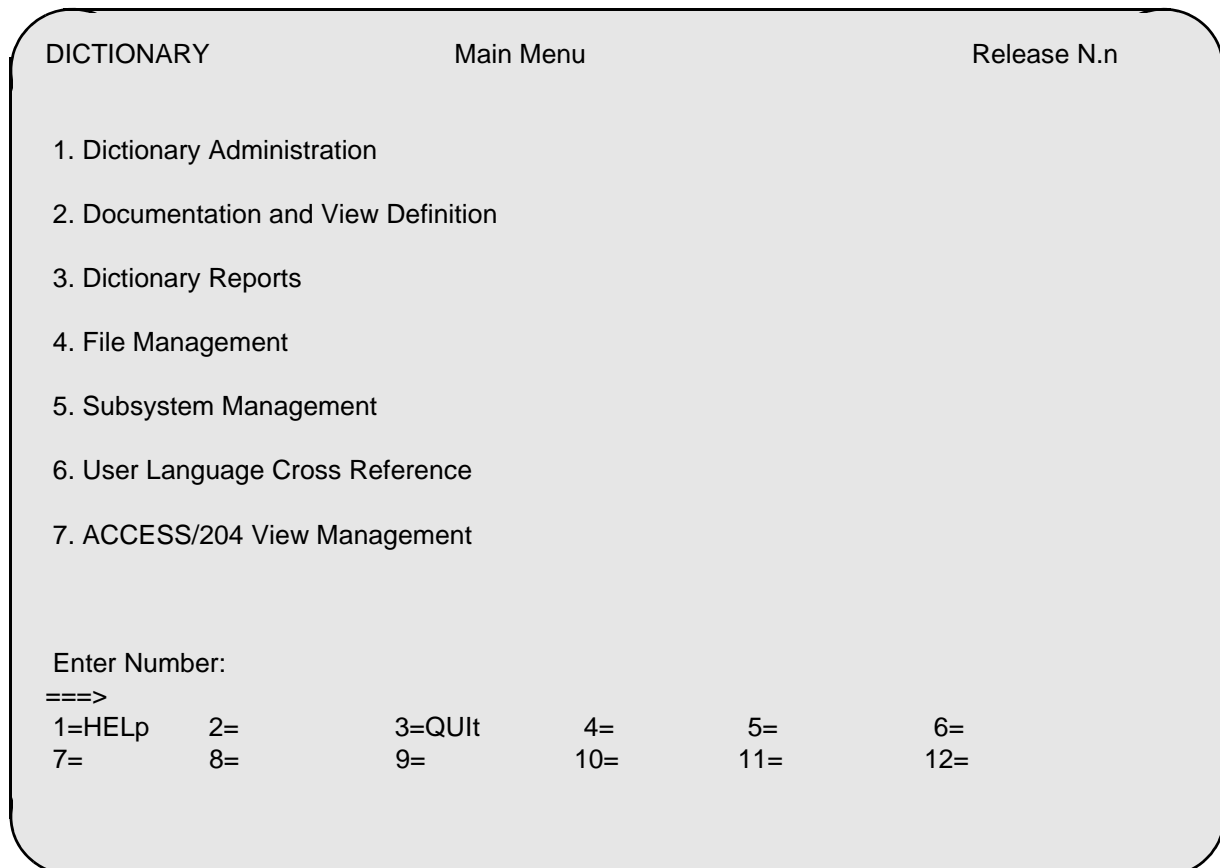
The current Dictionary/204 release number is displayed at the top right. Each
of the numbered menu choices selects a different Dictionary/204 facility. At
logon, the cursor is positioned at the Enter number: prompt.

To select a facility from the menu, do one of the following:

* Type the number of your choice and press Enter.

* Move the cursor to the command prompt (===>), and type:

  INVoke *<facility_name>*

  Press Enter.

You can use the following commands from the main menu:

Key	Command	Meaning
PF1	HELp	When you press PF1, the first in a series of HELP screens appears. The screens offer brief explanations of the options available from the main menu. You can also issue this command by typing HELp at the command prompt and pressing Enter. Press Enter to read each screen of text and to exit from the HELP function.
PF3	QUIt	When you press PF3, Dictionary/204 returns you to the facility from which Dictionary/204 was invoked or to Model 204 command level. (Returning to Model 204 command level means that you must log on to Dictionary/204 again to use the Dictionary/204 facilities. To terminate a Dictionary/204 session, use the QUIT command (PF3).
	INVoke	To invoke a facility, type INV *<facility_name>* at the command prompt. You can invoke any facility for which you have user privileges. A list of facility names appears on page 77.

Naming conventions and the uniqueness of entries

Dictionary/204 identifies an entry by its entity type and name. Thus, to avoid ambiguity, Dictionary/204 does not allow duplicate names of entries of the same type. That is, you cannot have two files named PERSONNL, or two procedures named REPTGEN. Attempting to duplicate an entry name generates an error message.

Because it is common to have fields in various files designate the same type of information (age, address, job title, comments, and so on), Dictionary/204 preserves the uniqueness of entry names by concatenation. These field names are useful in a number of files: PERSONNL, CUSTOMER, MEDIA, and so on.

Dictionary/204 prefixes the field, field group, record, and procedure names with the name of the file that is cross-referenced to it. For example, when File Management names the JOB TITLE fields for the three files mentioned above, it uses the following concatenated names:

```
PERSONNL.JOB TITLE
CUSTOMER.JOB TITLE
```

```
MEDIA.JOB TITLE
```

The FIELD, FIELD GROUP, RECORD, and PROCEDURE entry name without its prefix is called its UNQUALIFIED NAME. This allows users to find information about all entries that have the same UNQUALIFIED NAME using Dictionary Reports. The proper NAME of these types of entries, however, must include the file name prefix followed by a period. The format is:

<filename.unqualified_name>

See Appendix A for the definition of FIELD, FIELD GROUP, RECORD, and PROCEDURE entity types.

Implications for dictionary reports, documentation, and file management

When naming entries by concatenating names, keep the following guidelines in mind:

- When naming view fields using the Documentation facility, you can preserve the unique names of view field entries by prefixing the view field name with the view name. Because the values for view field attributes are not system-controlled or verified by the Documentation facility, the definers of the view must add the view name prefix.

- When specifying the entry to be processed by Dictionary Reports, Documentation, or File Management, at most 70 character positions are available for specifying the entry name. When specifying FIELD, FIELD GROUP, RECORD, and PROCEDURE entries, the UNQUALIFIED NAME and its file name might be greater than 70 characters. A WIDEN command (PF6) is provided; it provides a screen for entry names greater than 70 characters.

Naming of entity types, attributes, and relationships

The naming of entity types, attributes, and relationships is discussed in the context of the Dictionary Administration facility. User privileges for the Dictionary Administration facility are required to assign names to new entity types and attributes. New (named) relationships, however, can be entered through the Documentation facility by Dictionary/204 users.

Input conventions for Dictionary/204 screens

Three types of input are required in response to prompts on the Dictionary/204 facilities screens:

- Alphanumeric strings, such as the name of an entity, the value of an attribute or relationship. For example,

```
Entity type:   FILE
Name:   PERSONNL
```

- Letter X, when checking off requested items on a list. For example, type an X at the underscore (or sometimes, within the parentheses) in selecting from the following list:

```
Display references: X
Display system attributes: X
Display system references: _
```

The Xs tell the system to display the marked items. Leaving the item blank tells the system to bypass the item.

If you change your mind after selecting an item on a list, delete the X by typing a blank in its place or by using the Erase EOF key.

- The letters Y or N, when responding to a YES/NO option. In these cases, the default choice appears to the right of the prompt, as shown below:

```
Paper copy wanted: N
```

To change the default option, type the opposite value over the default value.

Dictionary/204 commands

Issue Dictionary/204 commands by typing the command name (or its first three letters) on the command line and then pressing Enter. In most cases, you can implement the command by pressing the assigned PF key. PF key assignments are displayed on the two lines below the command line. (See the main menu for examples.)

Although system commands are supported by every facility, a command is not necessarily available from every screen within the facility. These commands, however, are available from the primary screen of each facility, and at all points

in a process at which the command is useful or meaningful. The system commands are defined below.

Table 4-1.   Dictionary/204 commands

This command or key...	Performs this function...
Enter key	Press the Enter key after typing a command on the command line, or after typing a selection or a menu. If Enter is pressed without one of the required commands, a message is displayed:
	`ENTER A VALID COMMAND OR PF KEY.`
	Enter is never used to update or store information. It initiates processing such as selecting from a menu, requesting a report, or paging through a multiscreen report. Use Enter to advance to the next screen of an updating process, when updating takes place over a series of screens.
	However, Enter never commits the user to the updates; updates can always be retracted by using QUIT. Final updates are accomplished by using END or by using some from of an EXECUTE command.
INVoke *<facility_name>*	Invokes the facility named in the argument. The command takes the form:
	`INV facility_name`
	Issue the command from the primary screen of any Dictionary/204 or Workshop/204 facility.
	From Dictionary/204, you can invoke facilities within Dictionary/204 or Workshop/204, provided that you are an authorized user of the facility. When you issue the INVOKE command, the system checks your ACCOUNT entry to determine whether you have user privileges for the facility you are invoking. If you have the required privileges, the system displays the primary screen of the invoked facility. (The facility names are listed on page 77.)
	You can, however, invoke the Documentation facility even if you are not an authorized user. See "Security considerations" on page 75 for more information.
Attn (PA1)	Interrupts processing and redisplays the current screen. Pressing PA1 or typing ATTN on the command line and pressing Enter amounts to canceling the current processing.
HELp (PF1)	Displays a screen or series of screens of HELP text. Press Enter to read each screen in the series or to exit from the HELp function.

Table 4-1.   Dictionary/204 commands (continued)

This command or key...	Performs this function...
QUIt (PF3)	Terminates the processing of the current screen and returns you to the previous screen or facility. If the current screen is part of a series of screens, issuing QUIT ignores all input entered throughout the series of screens. In short, QUIT abandons whatever was in progress. Be sure that you understand the distinction between QUIT and END.
BACkward (PF7)	Permits backward scrolling, which allows you to view lines of data previously visible on your terminal screen. It reverses the FORWARD command. It also can take an argument (BACkward *n*), where *n* equals the number of lines of data to be scrolled back. This command does not store data.
FORward (PF8)	Permits scrolling forward, which allows you to view additional data, when the lines of data exceed the number visible on your terminal screen. This command sometimes takes an argument (FORward *n*), where *n* equals the number of lines you want to advance. This command does not store data.
END (PF12)	Processes and saves the current values on the screen and returns you to the previous level of processing or the previous facility. Use the END command to complete a process. If you have not supplied all the values necessary for completing the process, END generates an error message.

END does not appear on menus or reports or any screens that do not update or store information. Use the QUIT command to terminate report or menu functions. |
| NEXt | Processes and preserves the data on the current screen and displays the next screen in a series. This command advances you to the next screen of a process on a single logical level. Thus, the last screen of a multiscreen process does not allow the NEXT command.

The NEXT command can also be applied to data items. In this case, the command means that the system processes the current data item and then moves to the next data item in the series. |
| PREvious | Processes and preserves the data on the current screen and displays the previous screen in the series. This command also applies to data items that are processed in a series. This command reverses the direction of the NEXT command. Thus, the first screen in a multiscreen process does not allow the PREVIOUS command. |

Table 4-1. Dictionary/204 commands (continued)

This command or key...	Performs this function...
SAVe or STOre	Process and save the data on the current screen. The current screen is redisplayed to allow for additional processing.
EXEcute or PERform	Takes different forms (such as CREate, PERform, STOre, and so on) depending on the context. Some of these commands operate like the END command and others operate like the Enter key. See the documentation or HELP text to clarify the meaning in each case.

Record enqueuing conflicts

The following types of problems can occur when the system enqueues records for updating:

- In any Dictionary/204 or Workshop/204 facility where updating occurs, the system prevents the simultaneous updating of records by more than one user to protect the integrity of the data. If one user attempts to update a record that is being accessed by someone else, the system is prevented from obtaining the exclusive enqueue it needs to update that record. The system retries ten times (for approximately one minute). If the record is still not available, the following message is displayed:

  ```
  Reenter command or quit
  ```

  If you retry the command, the system tries to access the record another ten times. This cycle continues until the record is available or the user presses PF3 to quit.

- When using the Add an Entry or Update an Entry function in the Documentation facility, another type of enqueuing conflict might occur. During the use of these functions, updating records might occur frequently over the entire Documentation session. Thus, Dictionary/204 does not retry the record; instead it issues the following message:

  <Entity_type/Name> is in use.

  If you receive this message, move on to a different task. Return to document the entry at a later time.

- When updating non-system-controlled data for a FILE, FIELD, FIELD GROUP, or RECORD entry with the Documentation facility, the conditions for an enqueuing conflict are broader to ensure data integrity. Dictionary/204 does not allow you to access the record if another user has accessed a staged version of the entry. In this case also, Dictionary/204 displays the message

  <Entity type/Name> is in use.

If you receive this message, move to a different task. Document the entry at a later time.

5

Access/204 View Management Facility

Overview

This chapter describes Access/204 View Management, a facility of Dictionary/204 that allows the administrator to download specific file, record, view, and view link information from Dictionary/204 to Access/204. You can also load information by using the Access/204 full-screen interface or by using a batch Access/204 utility.

With Access/204 View Management, an administrator inputs the name of a file from which data is to be copied into Access/204. The administrator can then:

- List all records and views in that file

- Specify the records and views to be copied from the file

- Specify the authorized users for views

- Specify what view links to be copied from Dictionary/204 to Access/204 to make composite views

When using the facility, the administrator copies view definitions, or dictionary definitions — dictionary data, and not the physical data. The information must be copied to Access/204 only once, unless the file, view, or record is modified. If changes are made to the dictionary data, the administrator must recopy the modified file, view, or record definitions to Access/204. Conversely, if views or record profiles are

changed within Access/204, Dictionary/204 records must be updated to keep Access/204 and Dictionary/204 in synchronization.

When looking at Dictionary/204 for information you want to copy to Access/204, it is important to note that Dictionary/204 gives field, field group, record, and view field names a prefix. This prefix is the name of the file or view that the record or view references. The prefix guarantees the uniqueness of the entry names.

Access/204 View Management uses prefixes when determining the position of fields used as operands in derived fields. However, it removes these prefixes before the records or view fields are stored in Access/204.

Access/204 places limits on the lengths of file, record, field, view, and view field names. If you try to copy an entry from the dictionary to Access/204 and the entry name exceeds the limit, you are informed that the entity cannot be copied. These limits are as follows:

File	8 characters
Record	10
Field	50
View	20
View Fields	32

Access/204 View Management lets you copy new information or update existing information. When you are copying new information about files, fields, records, or view links and some of that information is unavailable in the dictionary, the Access/204 View Management facility uses standard defaults. This chapter explains these defaults. Access/204 copies only the definitions of existing entries, not staged entries. See Chapter 9 for an explanation of staged entries.

To define authorized users of a view, you can enter the Access/204 account names on the View Security screen (described on page 99) during the process of copying views. However, when you update a view definition, Access/204 View Management retains previously defined view security.

Access/204 View Management keeps a log, called the Access View Log, of the results of running the facility. For example, if you copy a record you receive the message "Record *<record_name>* copied" (for whatever record you are copying). After each transaction, a message is generated. The default is to send this log to your terminal. However, you can optionally send a log to a designated output device such as a printer or a specified file.

Facility privileges

Several restrictions apply when using Access/204 View Management. To use the facility, you must be known to Access/204 as an Access/204 administrator and to Dictionary/204 as an Access/204 View Management facility user.

You must be designated as an Access/204 administrator at installation or be added as an administrator by another Access/204 administrator. In addition, you cannot be logged on to both Access/204 and Access/204 View Management simultaneously.

For further information about Access/204, see the appropriate Access/204 manuals.

Logging on

You can log on to the Access/204 View Management facility in any of the following ways:

• Select the number of the Access/204 View Management facility option from the Dictionary/204 main menu.

   Note: If your main menu does not display the Access/204 View Management option, you have not been authorized to use this facility.

• Invoke the Access/204 View Management facility from the primary screens of another Dictionary/204 or Workshop/204 facility with the INVOKE command. The syntax of the command is:

   `INVoke ACCESSVIEW`

• Call the Access/204 View Management facility subsystem from the Model 204 command prompt by typing the subsystem name:

   `> ACCESSVIEW`

You can log on to the Access/204 View Management facility using any of these methods only if the ACCESSVIEW subsystem has been started. To have the subsystem started, contact your dictionary administrator.

For instructions about how to start the Access/204 View Management subsystem, see Chapter 3.

A sample ACCESSVIEW Login screen is on the next page.

Type in your user name (as in the sample) and press Enter. If you are not an Access/204 administrator, the following message is displayed:

```
Your name is not known to ACCESS - check with your admin-
istrator
```

If you are already logged on to either Access/204 or Access/204 View Management, under the name you just typed, the following message is displayed:

```
You are already logged in
```

```
 ACCESSVIEW                        Login

   ----------------------------------------------------------------------------------------------



                                 A C C E S S V I E W



                    Please enter your Access/204 User Name: MARJORIE






   ----------------------------------------------------------------------------------------------


 ===>
 1=HELp      2=         3=            4=         5=           6=
 7=          8=         9=            10=        11=          12=END
```

Selecting an option

When you have successfully logged on to Access/204 View Management, the
Access/204 View Management Primary Menu is displayed:

```
ACCESSVIEW                          Primary Menu

                            1. Copy File to Access/204


                            2. Copy Records to Access/204


                            3. Copy Views to Access/204


                            4. Copy View Links to Access/204


                            Enter Number:

Filename:
Password:


                            Paper Copy Wanted: N
                            Output File:

===>
1=HELp      2=        3=            4=        5=          6=
7=          8=        9=            10=       11=         12=END
```
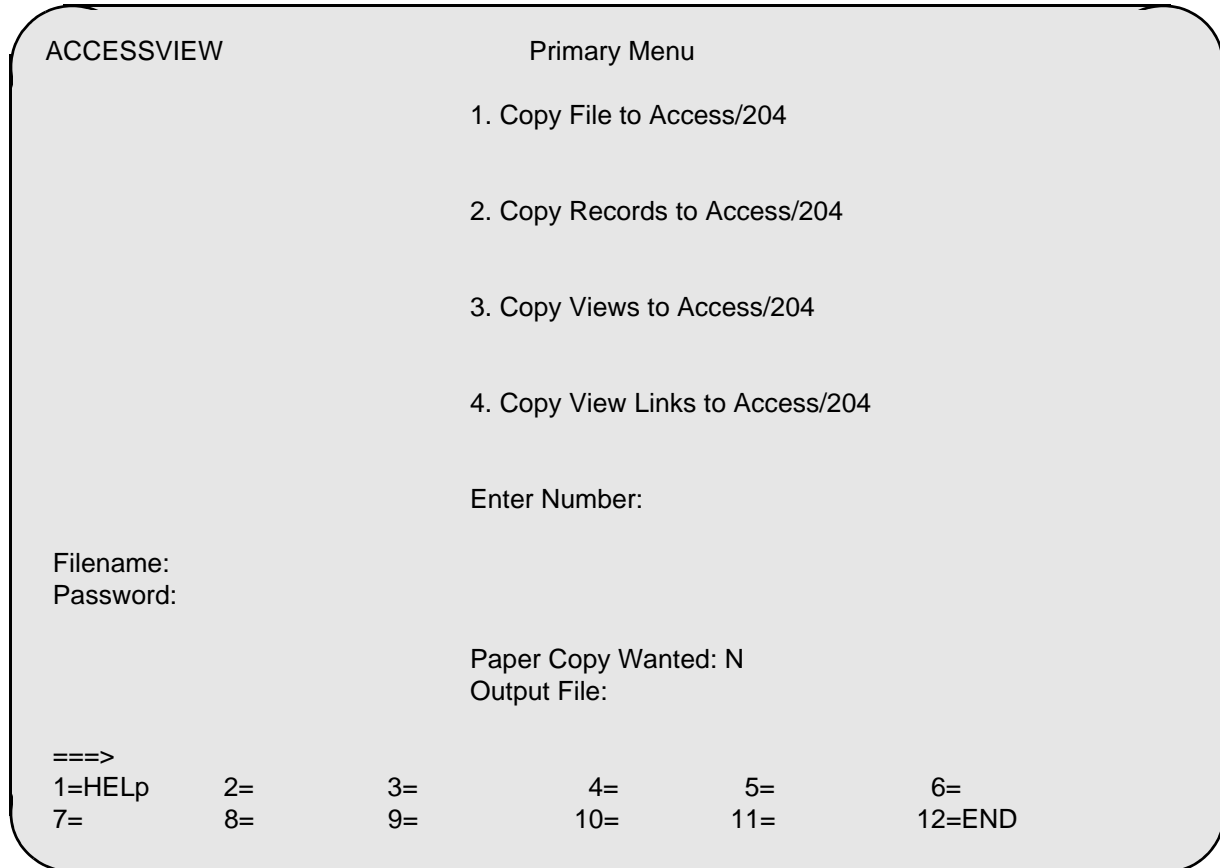
The Primary Menu provides these options:

Table 5-1.

This option...	Performs this function...
Copy File to Access/204	Copies file information from Dictionary/204 entries into Access/204. File information includes file name, file description, password, sort field name (if present), whether or not a sort field is mandatory, field names, and field attributes for each field.
Copy Records to Access/204	Displays a list of records defined for the file. You can specify which records are to be copied. Field groups defined using the File Management facility are copied to Access/204 when you copy records that contain field groups.

Table 5-1.

This option...	Performs this function...
Copy Views to Access/204	Displays a list of the views defined for the file. You can specify which views are to be copied.
	If views have been defined to Dictionary/204 by the Workshop/204 Query/Update facility or from PC/204, these views might reference a file rather than a record. Access/204 views must map to records. Therefore, in order to copy these views, you must first create a record entry in the dictionary for these views and then copy it to Access/204, before copying the view definitions. This record entry must contain all the fields referenced in the view and can contain additional fields.
	You must also define the MAPS TO relationship from the VIEW to the RECORD by using the Documentation facility. See Chapter 8 for information about the Documentation facility.
Copy View Links to Access/204	Displays a list of view links that have a source view that maps to the specified file. You can specify which view links you want to copy. The views that the links connect must have already been copied or already exist in Access/204.

Input

To select an option from this screen, you must first enter a file name and, if applicable, a password at the "Fleming:" and "Password:" prompts. Then enter the number of your selection at the prompt:

```
Enter Number:
```

If you select the option "Copy File to Access/204," Access/204 View Management redisplays the Primary Menu with a message informing you that the file profile has been copied. For the other options, Access/204 View Management displays a new screen, prompting you for the appropriate record, view, or view link information. For example, if you select "Copy Records to Access," Access/204 View Management displays the Records screen.

To change the destination of the Access View Log, respond to the prompt:

```
Output File:
```

The name of the default output file is OUTFILE, unless some other name has been specified in your ACCOUNT entry.

If you want to send the log to a destination other than your terminal, you must type in a new file name or a new device name over the default value that appears at the Output File: prompt. When all your transactions are completed,

and you select QUIT or END from the Primary Menu, the facility displays the messages accumulated from this session.

Commands

Commands are issued by pressing the assigned PF key or by typing a command at the command line prompt (==>) and pressing Enter.

Key	Command	Meaning
PF1	HELp	Displays the online HELP text for this screen. You can read the HELP screen or exit it by pressing any key.
PF3	QUIt	Terminates Access/204 View Management. The system returns you to your point of origin without processing any information you might have input.
PF6	EXEcute	Validates the data and processes your choice, after you have entered an option number.
PF12	END	Processes any information on the screen, terminates the session, and returns you to your point of origin.
Enter		Displays the message that your input has been validated. Because Enter does not process any of your data, the message informs you that you must press PF6 to execute any input.

Special commands for Access/204 View Management

With the exception of Cancel, these are scrolling commands used on screens with a list of more than 17 items.

Key	Command	Meaning
PF7	BACkward	Scrolls backward one screen or one relative line number (vertically). By typing BACK N(umber), L(ine), or P(age) on the command line, you can specify how many units the cursor moves and whether those units are measured in lines or pages. Defaults are set to one unit and to one page. For example, BACK 1 PAGE scrolls backward one page, BACK 10 LINES scrolls backward ten lines and BACK 2 scrolls backward two pages if the default is set to pages.
		To override the mode default, use the line and page commands discussed below. Current default information appears on the bottom left corner of any screen that has a list and permits scroll commands (for example, Record Selection screen).
PF8	FORward	Scrolls forward one screen or one relative line number (vertically). This command works in the same manner as the BACKWARD command (PF7).

Key	Command	Meaning
	CANcel	Performs the same function as QUIT (PF3). Your information is not saved and you are returned to the previous screen.
	FIRst	Moves you to the top of a list.
	LASt	Moves you to the bottom of a list.
	PAGe	Changes the scrolling default unit to page.
	LINe	Changes the scrolling default unit to line.

Copying a file to Access/204

To copy a file to Access/204:

1. Select the following option from the Primary Menu:

    ```
    Copy File To Access/204
    ```

2. Type the name of the file you want to copy and the password, if a password is associated with that file.

3. Enter option 1 at the Enter Number: prompt.

4. Press PF6.

    A message is displayed that the file you specified has been successfully copied, or an error message is displayed if the copy was not successful.

    Note: Fields belonging to the file must have unique names of not more than 50 characters, including the file-name prefix; for Access/204, the uniqueness of the name must be established within the first 32 characters.

Commands

The commands are the same as those described for the Primary Screen in "Selecting an option" on page 90.

Defaults

Access/204 View Management enters the following faults in the Access/204 dictionary for file information that is not available in the Model 204 dictionary.

*   File names appear in all capital letters.

*   If the value of the AVERAGE OCCURS attribute of a field is greater than 1, the field is considered a multiply occurring field.

*   Field names are truncated to 50 characters.

Copying records to Access/204

Select the following option from the Primary Menu:

```
Copy Records to Access/204
```

Access/204 View Management displays the Record Selection screen (see below).

In Access/204, a record name is restricted to the following characters:

```
A to Z, a to z, and # $ & @ - _
```

Use the following screen to select all records or to select specific records from the displayed list. When copying records, field groups defined using File Management are also copied with the records that contain them. If the list of records is greater than 17 lines, you can use PF7 and PF8 to scroll backwards and forwards, respectively. These commands are displayed with their PF keys when they are needed.

```
ACCESSVIEW              Record Selection Screen            Lines 1-2 of 2

 --------------------------------------------------------------------------------

 Filename: BOOKTEST                            Select all records:_


 _ BOOKTEST-TITLE
 _ BOOKTEST-AUTHOR











---- page --------------------------------------------------------------------------
===>


1=HELp 2= 3=QUIt 4= 5=VIEw 6=EXEcute
7= 8= 9= 10=VWLink 11= 12=END
```

Input

To request a record or records from a file and download them to Access/204, select one or more of the items that appear on the list of file names by typing an X in the prefix area.

You can also select all records by typing an X after the Select all records: prompt in the upper-right corner of the screen.

Commands

Commands are issued by pressing the assigned PF key or by typing a command at the command line prompt (==>) and pressing Enter.

Key	Command	Meaning
PF1	HELp	Provides HELP on copying records to Access/204.
PF3	QUIt	Terminates this function without sending any record information to Access/204. You return to the Primary Menu.
PF5	VIEw	Processes the Record Selection Screen. PF5 sends the record data to Access/204 and displays the View Selection Screen.
PF6	EXEcute	Processes the Record Selection Screen and send the record data to Access/204. The system redisplays the Record Selection Screen allowing you to specify additional records.
PF10	VWLink	Processes the record data and display the View Link Selection Screen.
PF12	END	Processes any information on your screen and returns you to the Primary Menu.

Defaults

Access/204 View Management enters the following defaults in the Access/204 dictionary for record information that is not available in the Model 204 dictionary:

- Record names appear in all capital letters.

- No field can be present in more than one field group in a record in the Model 204 dictionary.

- If view fields are present in more than one view field group in Dictionary/204, Access/204 View Management puts the view fields in the last repeating view field group it finds.

- Record names must be 10 characters or less.

- The RECTYPE ID 'FIELD' in the <field = value pair> becomes the record qualifier field; and the value in the <field = value pair> becomes the record qualifier value.

Copying views to access

Select the following option from the Primary Menu (or press PF5 from the Record Selection screen):

```
Copy Views to Access/204
```

The View Selection screen is displayed. Use this screen to select all views listed or to select only certain views.

In Access/204, a view name and a view field name are restricted to the following characters:

```
A to Z, a to z, and # $ & @ - _
```

Note: Rather than copy a view that contains derived fields, it is best to do the derivation in Access/204. If you do a derivation in Dictionary/204, be prepared to give a position number to all view fields and then to write the derivation rule. The position number you assign to each view field copied must match the fields you are using in the Access/204 derivation. Access/204 View Management sorts unnumbered view fields alphabetically at the top of the field list. In addition, view fields are sorted before their prefixes are stripped. If you do not number all the fields, the actual view fields used in the derivation rule might be incorrect. If you create a derivation from within Dictionary/204, number all view fields or choose high numbers for those you do not intend to use.

Input

To request a view or views from a Dictionary/204 file and send them to Access/204, select one of the view names that appears on the list by typing an X in the prefix area before the new name.

You can also select all records by typing an X after the Select all views: prompt in the upper-right corner of the screen.

Before issuing any further commands from this screen, press PF11 for the View Security screen to select authorized users for the views you have designated to be copied into Access/204. See "Using the View Security screen" on page 99 for further instruction.

```
ACCESSVIEW                    View Selection Screen                     Lines 1-2 of 2

 -----------------------------------------------------------------------------------------

 Filename: BOOKTEST                                            Select all views:_


 _ BOOKTEST-TITLE   This is view number 1
 _ BOOKTEST-AUTHOR     This is view number 2











 ---- page ---------------------------------------------------------------------------------
 ===>


 1=HELp 2= 3=QUIt 4= RECord5= 6=EXEcute
 7= 8= 9= 10=VWLink 11=SECure 12=END
```

Commands

Commands are issued by pressing the assigned PF key or by typing a command at the command line prompt (==>) and pressing ENTER.

Key	Command	Meaning
PF1	HELp	Provides HELP text on the View Selection Screen.
PF3	QUIt	Terminates this function without copying any view information to Access/204. You return to the Primary Menu.
PF4	RECord	Processes the View Selection screen and sends view data to Access/204. The Record Selection Screen appears.
PF6	EXEcute	Processes the View Selection screen and sends view data to Access/204. The View Selection screen is redisplayed, allowing you to specify additional view data.

Key	Command	Meaning
PF10	VWLink	Processes the view data and sends it to Access/204. The View Link Selection screen appears.
PF11	SECure	Selects and secures users who are authorized to use the views to be copied to Access/204.
PF12	END	Processes your selection and returns to the Primary Menu.

Defaults

Access/204 View Management enters the following defaults in the Access/204 dictionary for undefined view attributes in the Model 204 dictionary:

• View field names are displayed in all capital letters.

• Report column headers are a maximum of 2 lines, 30 characters per line.

• When adding view information, if you do not specify authorized users of a view, no users are secured to the view. If you do not specify users when updating view information, the current list of authorized users remains secured to the views.

• Field physical picture is the default for the system picture and the view field user picture. PHYSICAL PICTURE is an attribute of each FIELD entry. (See Appendix A.)

• If you intend to use certain fields for a derivation, you must number *all* view fields in the record you are copying. If you do not number all fields, all unnumbered fields are put at the top of the list, altering the position number of the other view fields (see the note on page 97).

• If a field's AVERAGE OCCURS attribute has a value greater than 1, Access/204 View Management assumes that the view field is a multiply occurring field.

• In a view with multiple restrictions, Access/204 View Management copies the first field that has a restriction and makes that restriction the view qualifier.

• View names must be 20 characters or less.

Using the View Security screen

From the View Selection Screen, issue the SECURE command by pressing PF11. Use the screen to create a list of users and groups that are to be copied with any views from the View Selection screen. The users and groups on this list are authorized to use the copied views.

The default for new views is to authorize no users. If you accept the default now, but decide later to add authorized users to a view, you must do so through

the Access/204 Administrator Dialogue. If you do not authorize any users, the view definitions are copied from Dictionary/204, but they cannot be used until you secure users to them.

If you are copying information from Dictionary/204 to update an Access/204 view, and you do not want to change the original list of users, do not select any users. No changes are made and the original list is preserved.

Input

To select users and/or groups and add them to the authorized list, type an X in the prefix area before a user or user group name.

You can also select all users and groups by typing an X after the Select all users and groups prompt in the upper-right corner of the screen. Type a plus sign (+) in front of a group name to display the names of all the members in a group. Press ENTER to remove the display of group members.

Commands

To issue commands, either press the assigned PF key or type a command at the command line prompt (==>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides Help text on the Secure screen.
PF3	QUIt	Takes you back to the View Selection screen but without creating a list of authorized users and group.
PF12	END	Processes the data and takes you back to the View Selection screen.

```
ACCESSVIEW               View Security Screen                    Lines 1-5 of 5

  ---------------------------------------------------------------------------------------------

  Filename: TEST2                              Select all user and groups:_


  _  AccountingGROUP  This is the new acct group
  _  Marketing  GROUP  Advertising: 5th floor
  _  LittellUSER   Access/204 Administrator
  _  CarneyUSER     ACCESS development
  _  Jardines  USER    Special effects






  ---- page ---------------------------------------------------------------------------------
  ===>


  1=HELp 2= 3=QUIt 4= 5= 6=
  7= 8= 9= 10= 11= 12=END
```

Copying View Links to Access/204

Select the following option from the Primary Menu:

```
Copy View Links to Access/204
```

The View Link Selection screen is displayed. For each view link, the view link name is displayed along with the source view name and target view name. An arrow (===>) points to the target view. You can also reach this screen from the Record or View Selection screens by pressing PF10.

Use this screen to copy view links from the dictionary to Access/204. The views you want to link must already be copied to Access/204. With this screen, you can select all view links or individual view links from the displayed list.

The list of view links is compiled from those view links defined in the dictionary that map to the specified file as their source view. A view copied into Access/204 cannot be linked to itself.

If you copy view A and view B and the view link that connects B to A (the root view), the result in Access/204 is one connected view that is called view A, which is equivalent in Access/204 to the following:

1. Establish A as the template (or root) view name.

2. Connect B to the root view A.

3. Store the connected view (called A) as a template view.

To establish three distinct views instead of one, for example, copy A and B to Access/204 using the Access/204 View Management facility. Then in Access/204:

1. Establish A as the root view.

2. Connect B to view A.

3. Store the connected view as a template view called C.

Input

To select one or more view links from the list and copy them to Access/204, type an X in the prefix before the view link name.

You can also select all view links in a list by typing an X after the"Select all view links prompt in the upper-right corner of the screen.
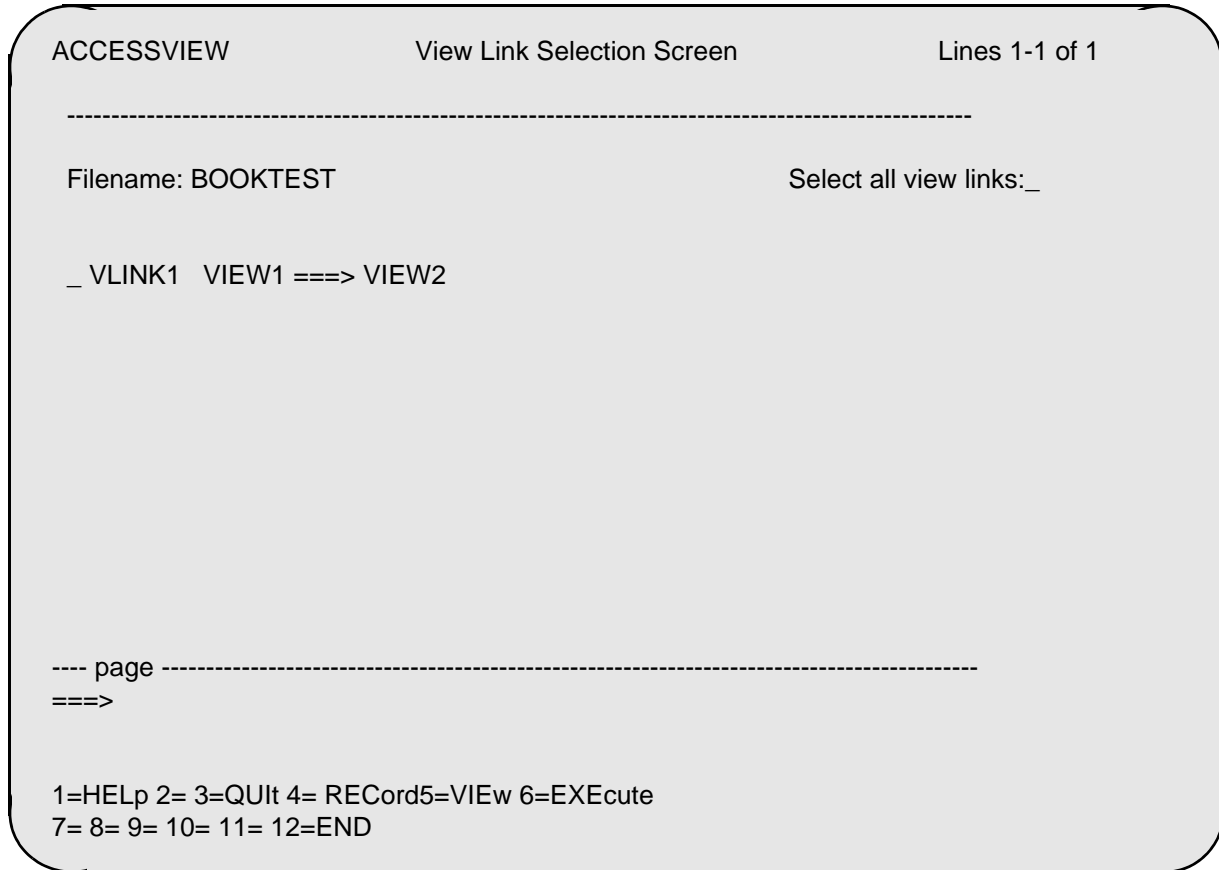
```
ACCESSVIEW              View Link Selection Screen            Lines 1-1 of 1

 -----------------------------------------------------------------------------------

 Filename: BOOKTEST                                  Select all view links:_


 _ VLINK1   VIEW1 ===> VIEW2









---- page -----------------------------------------------------------------------------
===>


1=HELp 2= 3=QUIt 4= RECord5=VIEw 6=EXEcute
7= 8= 9= 10= 11= 12=END
```

Commands

To issue a command, press the assigned PF key or type a command at the command line prompt (==>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides HELP text on the View Link Selection screen.
PF3	QUIt	Terminates this function without sending any view links to Access/204 and returns you to the Primary Menu.
PF4	RECord	Processes your selection and displays the Record Selection screen.
PF5	VIEw	Processes the View Link screen and sends the selected view links to Access/204. The View Selection Screen is displayed.

Key	Command	Meaning
PF6	EXEcute	Processes the View Link screen and sends the view links you specified to Access/204. The system redisplays the View Link screen, allowing you to specify additional view links.
PF12	END	Processes the information and sends it to Access/204. You then return to the Primary Menu.

Defaults

For each view link, Access/204 stores information known as the connection flag and the expansion flag. The connection flag controls the incorporation of connections from the target view to yet other views. A value of "yes" causes Access/204 to include the target view's connections, when Access/204 is using the composite view containing the target view. The expansion flag controls the automatic display of view fields on the IDENTIFY screen of Access/204. A value of "yes" displays the view's fields; a value of "no" does not display the fields.

Both these flags are set to "yes" when a view link is copied from Dictionary/204 to Access/204. Both flags can be reset within Access/204 by the Access/204 administrator.

6

Dictionary/204 Administration

Overview

The role of the dictionary administrator can be divided into six main areas:

1. Starting and stopping the DICTIONARY subsystem (Chapter 3)

2. Maintaining Dictionary/204 files (Chapter 3)

3. Maintaining dictionary structure (this chapter)

   The structure of the dictionary is based on entity types, attributes, and relationships. Although there are standard entity types, each having a predefined set of attributes and relationships, the administrator can customize or "extend" the dictionary by:

   – Adding new entity types that have their own attributes and relationships

   – Adding attributes and relationships (also called references) to the standard entity types

   The standard entity types, their attributes and relationships are defined in Appendix A, except for VIEW, COMPOSITE VIEW, VIEW FIELD, and VIEW LINK which are described in Chapter 2.

   The administrator should not delete or modify the system- or facility-controlled attributes and relationships of the standard entity types. The standard entity types can be modified only by adding attributes or relationships.

   Attributes, relationships, and entity types added to the dictionary by the administrator are not system- or facility-controlled. Their values are entered by users, primarily through the Documentation facility.

Users can add new relationships between dictionary entries through the Documentation facility, even if the new relationship is not part of the entry's definition as set up by the administrator. Users, however, cannot add attributes to the entity type definition.

4. Facility Administration (this chapter)

Several of the facilities that are part of the Dictionary/204 and Workshop/204 environments can be modified to suit the needs of your installation. Specifically, you can alter default and control parameters for File Management, Dictionary Reports, and the Workshop/204 Screen and Action Generator facility.

5. Security Administration (this chapter and page 75)

The administrator controls access to the Dictionary/204, Workshop/204, and Documentation facilities through the ACCOUNT entry in the dictionary.

6. Populating the Dictionary with DDGEN and DDGENSET (this chapter and page 55)

The Dictionary Administrator normally runs the DDGEN and DDGENSET utilities. DDGEN (a subsystem) creates dictionary entries for existing Model 204 files. DDGENSET creates JCL (OS/DOS) and FILEDEFs (CMS) and the CCAIN input data stream for DDGEN.   The administrator can also create customized reports with the Dictionary Reports facility.

Logging on

To log on to the Dictionary Administration facility, choose one of the following methods:

- Select the number of the Dictionary Administration facility option from the Dictionary/204 main menu.

  If your main menu does not display the Dictionary Administration option, you have not been authorized to use this facility.

- Invoke the Dictionary Administration facility from the primary screens of other Dictionary/204 or Workshop/204 facilities with the INVOKE command. The syntax of the command is:

  `INVoke DICTADMIN`

- Call the Dictionary Administration subsystem from the Model 204 command prompt by typing the subsystem name:

  `DICTADMIN`

  You can log on with this method only if you have started the Dictionary Administration subsystem.

Using the Dictionary/204 Administration main menu

Dictionary/204 displays the following main menu when you select the Dictionary Administration option:

```
DICTADMIN              Dictionary Administration Facility              Release N.n


1. Entity Type Maintenance

2. Path Maintenance

3. Facility Administration

4. Security Administration

5. Inventory Report


   Enter Number:




===>


1=HELp          2=              3=QUIt          4=              5=              6=
7=              8=              9=              10=             11=             12=
```

In brief, the Dictionary Administration facility provides the following capabilities (numbered items correspond to the menu options):

1. Defining, modifying, or deleting an entity type. You can define the attributes and named or cross-referenced relationships of the new entity types, and obtain a report on entity types and path relationships.

2. Defining, viewing, modifying, and deleting path relationships.

3. Modifying the default and control parameters for File Management and Dictionary Reports.

4. Maintaining security by controlling access to the Dictionary/204 and Workshop/204 facilities.

5. Requesting a printed inventory of entity types and their attributes and relationships. The report is available only in hard copy and cannot be sent to

the terminal.

Input

To select an option from this menu, type a numbered choice at the Enter Number: prompt and press the Enter key.

Commands

To issue commands, press the assigned PF key or type the command name at the prompt (===>) and pressing Enter.

Key	Command	Meaning
PF1	HELp	Provides the online HELP text for this screen. You can read the HELp text and exit from the last screen by pressing Enter.
	INVoke	At the command prompt, type: INVoke *facility_name* Then press Enter to invoke another facility.
PF3	QUIt	Terminates Dictionary Administration. You also can type QUIT at the command prompt and then press Enter. The system then returns you to the Dictionary/204 main menu, to the primary screen of the facility from which Dictionary Administration was invoked, or to Model 204 command level.
Enter		Processes your main menu selection.

Entity type maintenance

Dictionary/204 displays the following screen when you select the option Entity Type Maintenance from the Dictionary Administration menu:

```
DICTADMIN                    Entity Type Maintenance

1. Define New Entity Type

2. Update Entity Type

 3. Delete Entity Type

4. Entity Type and Path Report

  Enter Number:

 Entity Type:

            Path Information on Report: Y
                Route to Output File: N

               Output Destination: OUTFILE


===>


1=HELp          2=            3=QUIt          4=            5=            6=
7=              8=            9=             10=           11=           12=
```

This menu provides the following capabilities:

1. Defining the attributes and relationships of a new entity type. The administrator must define the entity type before users can define entries.

2. Updating an entity type, when there is a need to change the attributes and/or references of that entity type.

3. Deleting an entity type, when there is no further need for entries of that type.

4. Obtaining an entity type and path report when you need to survey the definitions of entity types or the spectrum of relationships between entity types. You can obtain a report on a single entity type or on all entity types and optionally include information on relationship paths.

Input

To select a function from this menu, you must select a numbered choice from the list of functions and then specify the entity type. Use options 1, 2, and 3 for maintaining the dictionary records, and option 4 for reporting on them.

- Defining, updating, and deleting entity types:

   Type the number of your selection at the Enter Number: prompt.

   Respond to the Entity Type: prompt by typing the name of the entity type you want to define, modify, delete, or report on.

   The maximum length of an entity type name is 20 characters.

- Reporting on entity types:

   To report on all entity types, respond by typing ALL at the Entity Type: prompt. Otherwise, enter the name of a particular entity type.

   If you do not want information about path relationships, type an N over the default value of Y after the following prompt:

   `Path Information on Report: Y`

   By default, Dictionary/204 sends reports to your terminal. You can direct the output to a different destination, however, by typing Y over the default value of N at the following prompt:

   `Route to Output File: N`

   Your output file default is specified in your ACCOUNT entry. (The output destination can be a printer or a specified file.)

   To override the default Output Destination for your account, type a new value for the following prompt:

   `Output Destination: OUTFILE`

   The Output Destination name can be from 1 to 30 characters.

   The system uses this file to send output to a destination other than your terminal.

To process your input on the Entity Type Maintenance menu, press the Enter key. You can press PF1 to read the HELP text for this menu, or press PF3 to terminate the Entity Type Maintenance function and return to the facility main menu.

Defining new entity type attributes

A screen similar to the following is displayed when you select the option Define New Entity Type from the Entity Type Maintenance menu. The following screen shows a sample REPORT entity type definition. Your screen is empty, except for the name of the entity type that you have specified on the previous screen and the arrow (-->) prompts.

The attributes you define here for the entity type appear as prompts for the Dictionary/204 users when they define a particular entry for this entity type. Users define entries for nonstandard entity types (such as REPORT) through the Documentation facility.

It is not necessary to add the following standard system-supplied attributes: NAME, CREATE DATE, LAST UPDATE, UPDATED BY, KEYWORD, ALIAS, SHORT DESCRIPTION, and DESCRIPTION. When users define particular entries through the Documentation facility, Dictionary/204 either provides these values or prompts the user for the values.

```
 DICTADMIN                          Define New Entity Type: Attributes


      Entity Type: REPORT


      Enter Attributes


 --> REPORT TYPE --> ROUTING
 --> REPORT TITLE --> PAPER STOCK
 --> PRIORITY LEVEL --> SECURITY LEVEL
 --> FREQUENCY --> NUMBER OF COPIES
 --> AVERAGE LENGTH -->
 --> -->
 --> -->
 --> -->



 ===>


 1=HELp         2=           3=QUIt       4=           5=           6=
 7=             8=FORward  9=             10=          11=REFs     12=END
```

Input

Use your tab keys to position the cursor at the next (or previous) line.

Type the names of the attributes to be associated with this entity type to the right of the prompt:

===>

Note the following restrictions:

• Type only one attribute following each arrow prompt.

- Maximum length is 20 characters.

- Allowable characters are the same as for Model 204 field names. See the Rocket Model 204 documentation wiki for details on field naming rules:

  http://m204wiki.rocketsoftware.com/index.php/Field_names

To change an attribute name on this screen, type over the current name. To delete an attribute on this screen, use the Erase EOF key or use blank characters.

If you need more than the available number of lines on the screen to complete the attribute set, press PF8 (the FORward command). This command provides a new blank attributes definition screen. The FORward command is described in the section "Commands" on page 113. You can enter as many attributes on as many screens as necessary.

Reserved words for attributes

Avoid the reserved words listed in Table 6-1 when creating attributes for Dictionary/204 entity types. An attribute name that contains reserved words generates an error condition.

Table 6-1.   Reserved words

ALL	OR	#
AND	RECORD	;
AT	RECORDS	,
BEFORE	TAB	EQ
BY	THEN	GE
COUNT	TO	GT
EACH	VALUE	LE
EDIT	WHERE	LT
END	WITH	NE
FROM	=	+
IN	$	- (minus sign)
IS	??	*
LIKE	?$	/
NOR	$&	...
NOT	(	^ (not equal sign)
OCC	)	
OCCURRENCE	@	>

To move on to the definition of relationships for the new entity type, press PF11 or issue the REFERENCES command. Your input is preserved but not saved until you issue the END command (PF12). You can quit (PF3) out of the definition process at any time before ending.

Commands

Defining new entity type references

Key	Command	Meaning
PF3	QUIt	Terminates the definition process. Dictionary/204 returns you to the Entity Type Maintenance Menu, but does not save any part of the entity type definition.
PF8	FORward	Lets you define more attributes for the new entity type. To see another "Define New Entity Type: Attributes" screen, press PF8. This command preserves your input but does not store your definition; next attributes definition screen.
PF11	REFs	Takes you from the attributes definition screen to the screen that allows you to define references (relationships between entries). Your previous input is preserved but not saved until you issue the END command.
PF12	END	Saves your definition of the new entity type's attributes and references press. This command stores your input and returns you to the Entity Type Maintenance menu.

After you have specified all the attributes for the new entity type, you can specify the new entity type relationships to other entity types by pressing PF11 on the screen shown in the preceding section.

Use the following screen to specify relationships between the new entity type and existing entity types.

```
 DICTADMIN                     Define New Entity Type: References

 Entity Type: REPORT

 Enter Related Entity Types Enter Optional Reference Name

 --> USER ~ ROUTED TO
 --> FILE ~
 --> ~
 --> ~
 -->~
 --> ~
 --> ~
 --> ~
 --> ~
 --> ~
 --> ~
 --> ~




 ===>

 1=HELp        2=          3=QUIt      4=          5=          6=
 7=            8=FORward   9=          10=         11=         12=END
```

This sample screen specifies a cross-referenced relationship between REPORT and FILE, and a named relationship between REPORT and USER. Two implications for users of the Documentation Facility are:

- Whenever you add or update a REPORT entry or FILE entry, Dictionary/204 prompts you to specify a particular report or file for cross-referencing. The TRAVEL SUMMARY report, for example, can be cross-referenced to the TRIPS file.

- Whenever you add or update a REPORT entry, Dictionary/204 prompts you to specify that the named relationship ROUTED TO applies to a particular USER. (The TRAVEL SUMMARY report, for example, can be ROUTED TO Johnson.)

Type the name of a named relationship following the tilde (~) as shown in the ROUTED TO example. Leave cross-references blank, as shown in the FILE example. See Chapter 1 for a general discussion of relationships.

Named references are directional and can be updated (when using the Documentation Facility) only from one of the two related entity types (in this case only from the REPORTS entity). But all references (cross-references and

named references in both directions) are displayed when users query the dictionary with the Dictionary Reports facility.

From this screen, you can:

- Request another screen for defining relationships by pressing PF8 (FORward).

- Cancel the definition of the entity type by pressing PF3 (QUIt).

- Save the entity type definition by pressing PF12 (END).

Input

You can enter as many related entity types (for example, FILE, FIELD, USER) as you want. Specify one entity type per line in response to the prompt:

===>

The maximum length for an entity type name is 20 characters. You can specify a named relationship by adding a reference name in the space provided following the tilde (~). The maximum length for a relationship name is 19 characters. The previous example is ROUTED TO.

Use the tab keys to position the cursor at a new prompt.

To change a value typed on this screen, type over the current value. To delete a value, use the Erase EOF key or use blank characters.

Commands

Commands are the same as those for the previous screen, except that there is no REFs command (PF11). You cannot return directly to the screen for defining attributes. You can, however, modify the attributes by saving the definition (using the END command) and then selecting the Update Entity Type option from the Entity Type Maintenance menu.

Updating an entity type

Dictionary/204 displays this screen when you select the option Update Entity Type from the Entity Type Maintenance menu. Use this screen to indicate that you want to change the definition format of an existing entity type. Specify the name of the entity type on the main menu when you select the update option.

You can add new attributes to the definition of standard entity types, but you cannot modify the standard system-controlled attributes provided by Model 204. If you have created a new entity type (such as REPORT) you can modify any of its attributes or relationships.

You might want to update an entity type:

- When the attributes for an entity type have changed. For example, additional REPORT attributes might need to be specified.

- When an entity type contains references to another entity type that has been, or that will be, deleted.

The following screen shows the REPORT entity type definition ready to be updated:

```
 DICTADMIN                    Update New Entity Type: Attributes

 Type over attributes to modify / Add new attributes on blank lines

 --> REPORT TYPE --> ROUTING
 --> REPORT TITLE --> PAPER STOCK
 --> PRIORITY LEVEL --> SECURITY LEVEL
 --> FREQUENCY --> NUMBER OF COPIES
 --> AVERAGE LENGTH -->
 --> -->
 --> -->
 --> -->
 --> -->
 --> -->
 --> -->
 --> -->




 ===>

 1=              2=          3=QUIt      4=          5=          6=
 7=              8=FORward   9=          10=         11=REFs     12=END
```

Input

Dictionary/204 displays all the attributes and references defined for the specified entity type on two update screens: one for attributes (shown above), and one for relationships (shown in "Updating entity type references" on page 117).

You can modify the attributes by following the directions on the previous screen:

- Type over existing attributes, using the Erase EOF key or blank characters to delete extra characters.

- Specify new attributes on a blank line.

Note: Typing over an attribute name deletes the current attribute and replaces it with a new attribute; it does not simply change the name of the existing attribute. Moreover, values entered for the deleted attribute do not apply to the new attribute.

Commands

The commands are the same as those described on page 108.

Updating entity type references

Press PF11 to begin updating the entity type references. A screen similar to the following is displayed. The screen lists the relationships defined for the entity type by the administrator or by Model 204 (in the case of standard entity types). You can add references to standard entity types, but you cannot modify those provided by the system.

```
 DICTADMIN                    Update New Entity Type: References


 Type over references to  modify /    Add new references on blank lines


 --> USER ~ ROUTED TO
 --> FILE ~
 --> ~
 --> ~
 -->~
 --> ~
 --> ~
 --> ~
 --> ~
 --> ~
 --> ~
 --> ~




 ===>

 1=HELp        2=          3=QUIt      4=          5=          6=
 7=            8=FORward   9=          10=         11=         12=END
```

Input

Dictionary/204 displays all the references defined for the specified entity type on a screen like the previous one. You can modify the references by following the directions on the screen:

- Type over existing entity type names and relationship names, using the Erase EOF key or blank characters to delete extra characters.

- Specify a new related entity type and named or cross-referenced relationship on a blank line.

- Maximum length for an entity type name is 20 characters.

- Specify a named relationship by adding a reference name in the space provided following the tilde (~). The maximum length for a relationship name is 19 characters. Leave the space following the tilde blank for cross-references.

Note: Typing over an existing reference deletes the current reference; it does not simply change the name or entity type that makes up the existing reference.

The commands are the same as those described on page 113.

Deleting an entity type

Dictionary/204 displays this screen when you select the following option from the Entity Type Maintenance menu:
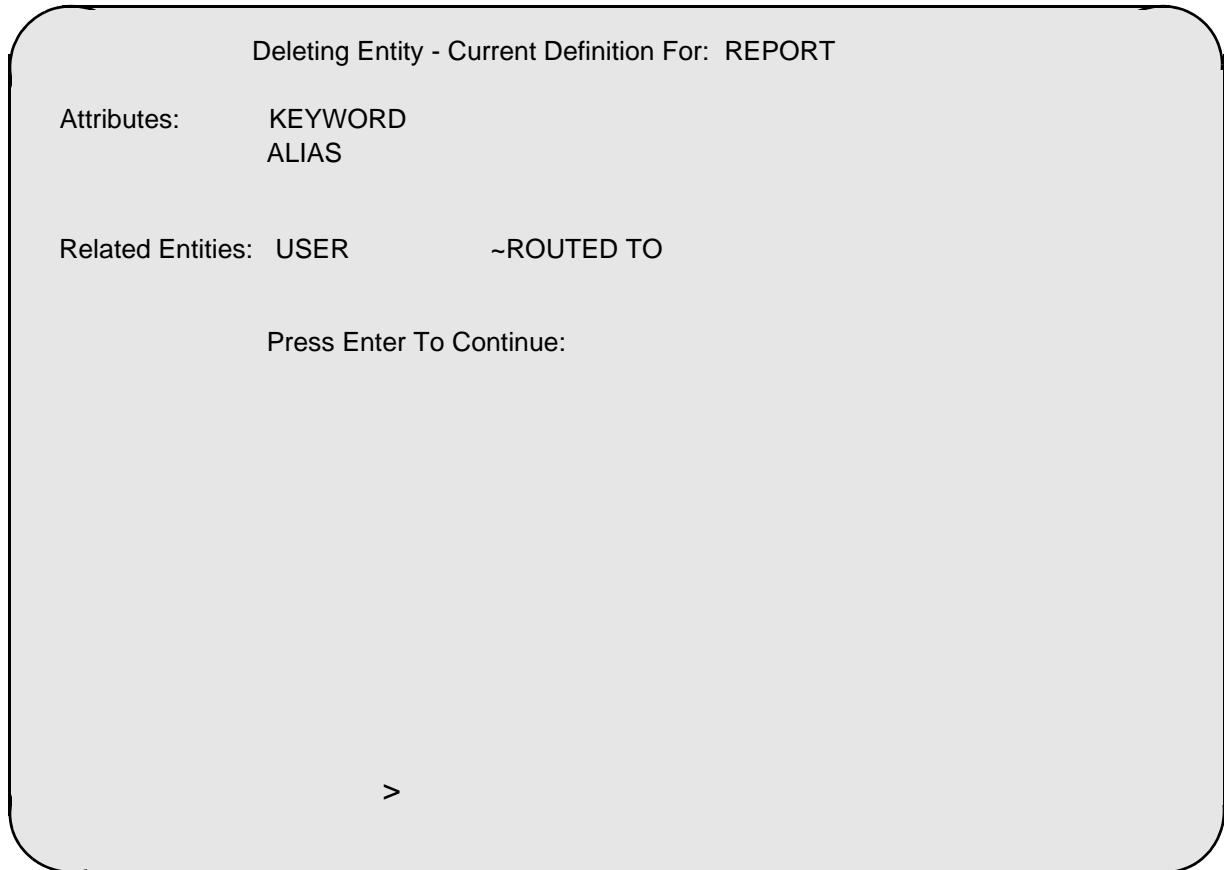
```
Delete Entity Type
```

This function enables you to delete an entity type from the dictionary. Deleting an entity type does not automatically delete the entry records for that entity type from the dictionary, but it does make the entries inaccessible. First delete the individual entries from the dictionary by using the Documentation facility. If you delete the entity type first, users cannot specify that the entries are to be deleted.

You might want to delete an entity type:

- If the entity type is no longer useful.

- If you want to make the entries for the entity type inaccessible for an indefinite period. (Redefining the entity type at a later time makes the entries accessible again.)

Before you actually delete an entity type, Dictionary/204 displays the current attributes and related entity types for the entity type to be deleted. Dictionary/204 also tells you how many entries are currently defined in the dictionary for the entity type being deleted. The following screen provides an example.

```
            Deleting Entity - Current Definition For:  REPORT

Attributes:        KEYWORD
                   ALIAS


Related Entities:  USER            ~ROUTED TO


                   Press Enter To Continue:

                   >
```

Input

After Dictionary/204 displays the attributes and references for the entity to be deleted, it prompts:
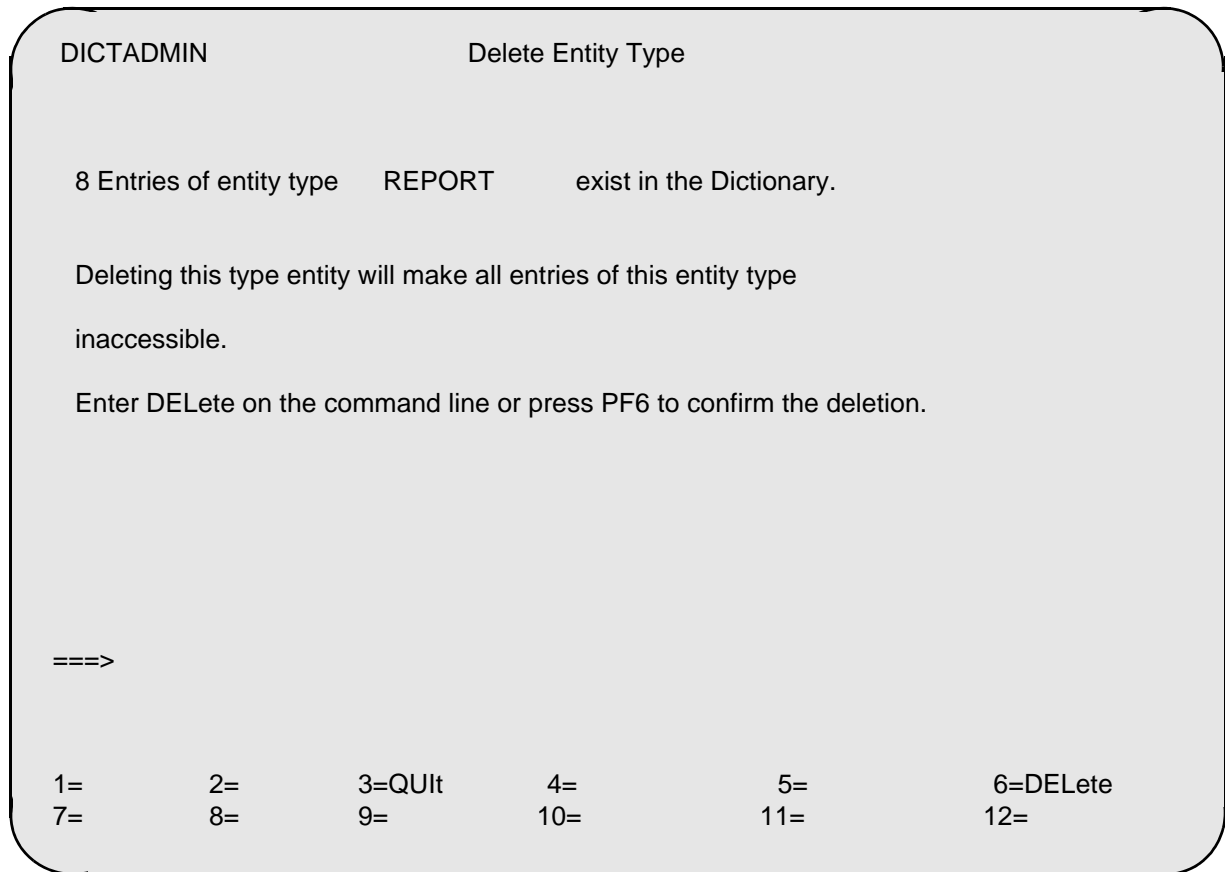
```
Press Enter to Continue:
```

Press the Enter key to advance to the confirmation screen.

Confirming the deletion

Dictionary/204 displays the following Confirmation screen when you press Enter, after viewing the attributes and relationships for the entity to be deleted. The screen tells you how many entries of the type to be deleted are stored in the dictionary.

You must either confirm the deletion by pressing PF6 (DELete), or abort the deletion by pressing PF3 (QUIt).

```
 DICTADMIN                          Delete Entity Type


   8 Entries of entity type    REPORT        exist in the Dictionary.


   Deleting this type entity will make all entries of this entity type

   inaccessible.

   Enter DELete on the command line or press PF6 to confirm the deletion.






 ===>



 1=          2=          3=QUIt       4=             5=              6=DELete
 7=          8=          9=          10=            11=             12=
```

The previous sample screen indicates that eight REPORT entries are defined in the dictionary. When you delete the REPORT entity type from the dictionary, you delete the definition of attributes and relationships for this entity. Report entries defined by users through the Documentation facility remain in the dictionary database, but they become inaccessible.

If you press PF6, Dictionary/204 displays the Entity Type DELETED message on the message line of the Entity Type Maintenance menu.

If you press PF3, Dictionary/204 cancels the delete operation and returns you to the Entity Type Maintenance menu.

Displaying entity type and path report

The Entity Type Maintenance menu enables you to display the attributes and relationships that have been assigned to the various entity types — both system-controlled entity types and those created by the dictionary administrator. By selecting the Entity Type and Path Report option, you can:

- Display the definition of a single entity type

- Display the definitions of all entity types

- Optionally display path information for either of the above

- Optionally route the information to a printer or specified file

The following sample Entity Type Maintenance menu shows the input for a report on the REPORT entity type, including path information, sent to the terminal.

```
DICTADMIN                    Entity Type Maintenance


1. Define New Entity Type

2. Update Entity Type

 3. Delete Entity Type

4. Entity Type and Path Report

  Enter Number: 4
 Entity Type: REPORT

            Path Information on Report: Y
                 Route to Output File: N

            Output Destination: OUTFILE


===>


1=HELp        2=            3=QUIt        4=            5=            6=
7=            8=            9=            10=           11=           12=
```

Input

To respond to this menu, type the name of the entity type or ALL in response to:

```
Entity Type:
```

The default value is Y for:

```
Path Information for Report:
```

Type N over the default value, if you do not want a report on the paths in which the entity type occurs.

Normally, Dictionary/204 sends reports to your terminal. You can direct the output to a different destination, however, by typing Y over the default value of N at the following prompt:

```
Route to Output File:
```

Your Output Destination default value is specified in your ACCOUNT entry. (The output destination can be a printer or a specified file.) To change your output destination, type a new value for:

```
Output Destination
```

You can specify a name of 1 to 30 characters.

The default value is OUTFILE. The system uses this file to send output to a destination other than your terminal.

Output

Dictionary/204 displays a report similar to the following when you select the option from the Entity Type Maintenance menu:

```
Display Entity Type and Path Report
```

The sample report is based on the definition of the SUBSYSTEM entity type and a hypothetical path relationship.

A dictionary entity type definition contains a list of the attributes and relationships established for an entity type. It does not include the individual entry names and attribute values. (The Inventory Report, described in "Printing a dictionary inventory" on page 148, enables you to display the existing entries for each entity type, along with their attributes and relationships.)

A dictionary path definition contains a list of the entity types that comprise the relationship path, as shown on the second screen of the sample report.

```
10 OCT 90                DICTADMIN                    PAGE 1
                    Entity Definition Report


Entity: SUBSYSTEM

Required attributes: NAME

System attributes: AUTO LOGIN
AUTO LOGOUT
AUTO START

COMMAND LINE VARIABLE

COMM VARIABLE
DISCONNECT MSGS
ERROR MSGS
ERROR VARIABLE
EXIT
INFO MSGS
LOCK FILES
NONPRECOMPILE PREFIX
PRECOMPILE PREFIX
STATUS

Optional attributes: SHORT DESCRIPTION
KEYWORD
ALIAS
DESCRIPTION



System relationships: ~USES PROC FILE
~USES DATA FILE
~USES GROUP
~USES ERROR PROCEDURE
~USES INIT PROCEDURE
~USES LOGIN PROCEDURE

Optional relationships:

DIA111 There are no optional relationships for this entity definition.
```

```
10 OCT 90                  DICTADMIN                    PAGE 2
                        Reference Path Report


             Path




ACCOUNT
FACILITY
SUBSYSTEM
PROCEDURE
FILE






     End of Report
```

If Dictionary/204 displays the > prompt at the bottom of the screen, press the Enter key to advance to the next screen, or to return to the Entity Type Maintenance menu. (The prompt (>) does not appear in the sample above, because the report was sent to a printer rather than to a terminal.)

Path maintenance

The previous sections explained how to use the functions available from the Entity Type Maintenance menu. This section shows you how to use a function available from the Dictionary Administration main menu (described in "Using the Dictionary/204 Administration main menu" on page 107).

Dictionary/204 displays this screen when you select the following option from the Dictionary Administration main menu:

```
Path Maintenance
```

Path relationships are defined in Chapter 1 and are described further in "Displaying a path definition" on page 127.

```
DICTADMIN                    Path Maintenance

1. Display Path Definitions

2. Add Path Definition

3. Update Path Definition

4. Delete Path Definition


   Enter Number:



Path Number:




===>


1=HELp        2=            3=QUIt        4=            5=            6=
7=            8=            9=            10=           11=           12=
```

This menu provides the following capabilities (numbered items correspond to menu options):

1. Displaying all path relationships along with their assigned path numbers

2. Defining a maximum of eight entity types as a path

3. Updating the definition of existing path relationships

4. Deleting the definition of a path relationship

Input

You can select an option from this menu by typing a numbered choice at the Enter Number: prompt, and then pressing Enter.

If you want to update or delete a path, you must type its number at the prompt:

```
Path Number:
```

This prompt applies only to updating and deleting. Path numbers are assigned automatically and sequentially by the system. To determine the number of a path, use the Display Path Definition option from the Path Maintenance menu.

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

| Key	Command	Meaning
PF1	HELp	Provides the online HELP text for this screen. You can read the HELp text and exit from the last screen by pressing Enter.
PF3	QUIt	Terminates the Path Maintenance function. The system returns you to the Dictionary Administration main menu.
Enter		Processes your menu selection.

Defining paths: in theory

Before examining the interface for defining paths, it is important to examine why paths are defined and how to ensure their usefulness.

As defined in Chapter 1, a path relationship is one that is derived from other relationships. Paths increase the reporting capabilities of the dictionary by enabling it to show indirect relationships among as many as eight entity types and their entries.

Paths can be based on cross-references, as shown in Figure 6-1.

Figure 6-1. Path relationship - Example 1
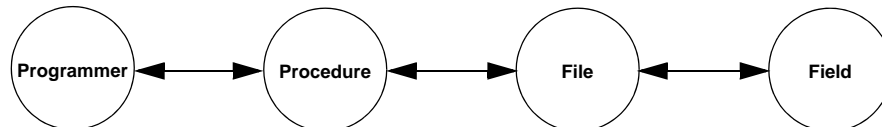
This relationship allows users to obtain reports on relationships between PROCEDURE and FIELD entries, even though there is no direct relationship defined between these two entity types.

Paths can also be based on named references, as shown in Figure 6-2.

Figure 6-2. Path relationship - Example 2
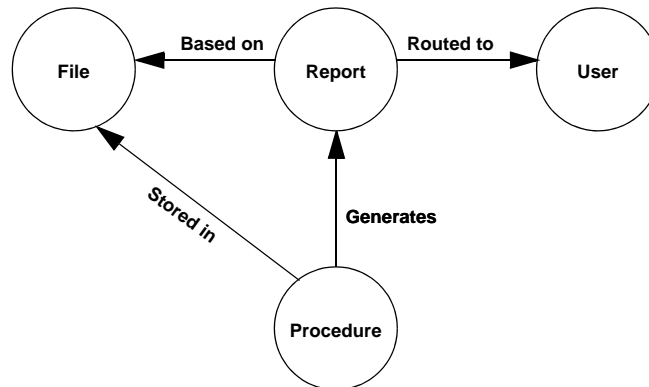
This relationship allows reports on existing references between FILE and USER entries. (See Chapter 7 for an example of how to request such reports.)

In defining path relationships, the dictionary administrator must anticipate the users needs, because the defined paths must support the users' reporting requirements. But keep in mind the following guidelines:

- Paths can be defined between any valid entity types, even if no existing relationship exists at all between certain entity types in the path. However, such a "bogus" path does not enhance the users' reporting capabilities. Paths, therefore, must be derived from existing relationships defined for the relevant entity type definitions.

  If no relationship exists between two consecutive entries, the report path is broken. The report does not "wrap around" from the last entity type in the path to the first.

  See "Adding a path definition" on page 129 for instructions on defining paths.

- When named relationships are part of a path, users can obtain reports that entity type B is related to entity type C even if the unidirectional, named relationship flows from C to B. Consider this example:

  ```
  A <---> B <--- C ---> D
  ```

  If a user asks (using Dictionary Reports) which entities are related to B, the report yields A, C, and D. A Dictionary Reports query asks only if a relationship exists along a path, but not what type it is or what direction is implied by the relationship.
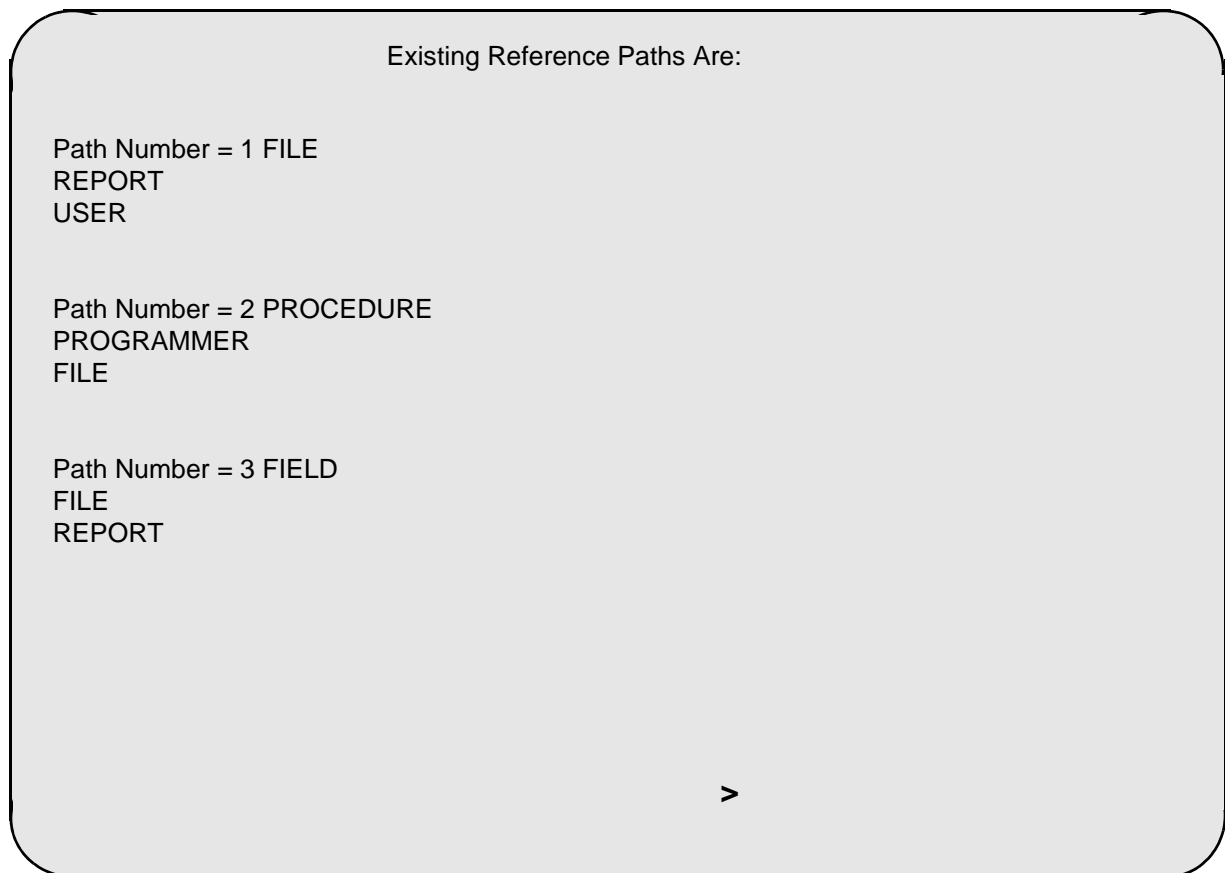
Displaying a path definition

The following screen is displayed when you select the following option from the Path Maintenance menu:

```
Display Path Definitions
```

This screen displays a list of all the paths currently defined in the dictionary, along with their identifying path numbers. These numbers are used on the Path Maintenance menu to specify the particular path to be changed or deleted. Paths are numbered sequentially; when paths are deleted, the next defined path takes the number of a previously deleted path.

Always display a path and its number before updating or deleting it; do not assume that you know the correct and current number of a path without checking.

Existing Reference Paths Are:

Path Number = 1 FILE
REPORT
USER

Path Number = 2 PROCEDURE
PROGRAMMER
FILE

Path Number = 3 FIELD
FILE
REPORT

>

Input

If Dictionary/204 displays the > prompt, press the Enter key to advance to the next screen. After all the paths have been displayed, press Enter to return to the Path Maintenance menu.

Adding a path definition

Dictionary/204 displays the following screen when you select the following option from the Path Maintenance menu:

```
Add Path Definition
```

Use this screen to specify a new path for the entities in your dictionary.

```
DICTADMIN                    Add Path Definition


             Enter up to 8 valid entity types for this Path



--> USER
--> REPORT
--> FILE
--> FIELD
-->
-->
-->
-->





===>


1=HELp        2=          3=QUIt       4=          5=          6=
7=            8=          9=           10=         11=         12=END
```

Input

Dictionary/204 prompts you to describe the path by specifying up to eight entity types that comprise it. Enter the entity types, one per line, in response to the --> prompts. Use the tab keys to position the cursor at the next or preceding prompt.

You must list the entity types in the order in which Dictionary/204 is to proceed in following the path. If no relationship exists between two sequential entries, the reporting path is broken, as explained in "Defining paths: in theory" on page 126.

To indicate that the path is complete, press PF12 or issue the END command.

Dictionary/204 checks the entity types that you have specified to ensure that definitions for these entity types exist.

If an entity type is not valid, an angle bracket tag (<) is displayed in column 80 of the line containing the invalid entry. An error message is displayed on the message line (the line below the command prompt). Correct the entity type, using the ERASE EOF key to delete the entered value.

Dictionary/204 also displays an error message if you define a path that is already defined in the dictionary.

If no errors are found, Dictionary/204 adds the path to the Dictionary/204 and displays the Path Maintenance menu with the message:

```
The reference path has been defined.
```

To cancel the add operation, press PF3, or issue the QUIT command at the command prompt (===>).

Changing a reference path

Dictionary/204 displays the following screen when you specify the number of the path on the Path Maintenance menu, and select the following option from the Path Maintenance menu:

```
Update Path Definition
```

Use this screen to change a reference path by replacing one or more of the entity types that make up the path.

Dictionary/204 displays the entity types that comprise the path, as shown in the following sample screen.

```
DICTADMIN                        Update Path Definition



                                 Selected Path: 2


 Type over existing information to change

--> PROCEDURE
--> PROGRAMMER
--> FILE
-->
-->
-->
-->
-->




 ===>



 1=HELp        2=           3=QUIt        4=           5=           6=
 7=            8=           9=            10=          11=          12=END
```

Input

To modify a path, type over the display of the existing entity types, or use the ERASE EOF key to delete the display.

If you specify an entity type that is not defined in the Dictionary/204, an angle bracket tag (<) is displayed in column 80 on the line containing the erroneous entry. An error message is displayed on the message line (the line below the command line). You can then either correct the entry or cancel the operation by pressing PF3.

Dictionary/204 also displays an error message if you attempt to define a path already defined in the dictionary.

To indicate that the path is updated to your satisfaction, press PF12 or issue the END command. The update is stored, and the system returns you to the Path Maintenance menu.

To cancel the update, press PF3. Dictionary/204 returns you to the Path Maintenance menu.

Deleting a reference path

Dictionary/204 displays the following screen when you specify the number of the path on the Path Maintenance menu and select the following option from the Path Maintenance menu:

```
Delete Path Definition
```

To determine the correct path number, use the Display Path Definition option from the Path Maintenance menu.

Before Dictionary/204 permits you to delete the path from the dictionary, it displays the entity types that comprise the path, as shown on the sample screen.

```
DICTADMIN                     Delete Path Definition


                         The selected Path is


PROCEDURE
PROGRAMMER
FILE








Enter DELete on the command line or press PF6 to confirm the deletion.

===>


1=HELp         2=           3=QUIt        4=          5=          6=DELete
7=             8=           9=            10=         11=         12=
```

Input

Press PF6 to delete the path, or cancel the deletion by pressing PF3. Once you have deleted the path, it cannot be recovered. All path numbers are resequenced after a deletion.

Facility administration

The previous sections described functions available from the Path Maintenance menu. This section describes the Facility Administration function available from the Dictionary Administration main menu (described in "Using the Dictionary/204 Administration main menu" on page 107). This function enables data administrators to control various options and parameters that affect the operation of their respective facilities.

Dictionary/204 displays the following screen when you select the following option from the Dictionary Administration main menu:

```
Facility Administration
```

```
DICTADMIN                    Facility Administration


1. Dictionary Reports Administration


2. File Management Options


3. Screen and Action Generator Options




Enter Number:

===>


1=HELp        2=           3=QUIt        4=           5=           6=
7=            8=           9=            10=          11=          12=
```

The Facility Administration menu displays the options for the administration of those facilities installed at your site. The previous menu presupposes that Workshop/204 is installed. If it is not installed, menu options 3 does not appear.

This menu provides the following options (numbered items correspond to menu choices):

1. Adding, deleting, or renaming procedure names on a list of user-written

procedures that produce reports

2. Determining command options and setting defaults for the File Management facility

3. Changing the default file names and procedure names used by the Workshop/204 Screen and Action Generator facility

Input

To select an option from this menu, type the number of your choice after the Enter Number: prompt and then press the Enter key.

To terminate the Facility Administration function and return to the Dictionary Administration main menu, press PF3 or issue the QUIT command. You can read the HELP text for this screen by pressing PF1 or by issuing the HELP command. Press Enter to read the HELP text and to exit from the last help screen.

Dictionary Reports administration

Two distinct tasks comprise the administration of Dictionary Reports:

• Maintaining a list of customized (also called "user-written") reports through the Facility Administration facility

• Creating customized reports, which can be accomplished only from the Model 204 command prompt

This section describes both tasks.

The following screen is displayed when you select the following option from the Facility Administration menu:

```
Dictionary Reports Administration
```

Use this screen to add, rename, or delete a procedure name from the list of user-written procedures in the Dictionary Reports facility (DICTREPORT).

```
DICTADMIN                      Facility Maintenance

                         Dictionary Reports Administration

                       Maintain display of user written procedures

                       Select option to Add, Rename or Delete procedure name
                       on list displayed for user-written reports

_ Add procedure name

_ Rename procedure

_ Delete procedure name

              Enter Procedure name:

              Rename Procedure to:



===>

1=HELp        2=          3=QUIt        4=          5=          6=EXEcute
7=            8=          9=            10=         11=         12=
```

Input

The Facility Administration facility prompts you to add, rename, or delete the
procedure names for user-written reports. When you use this function, the
names on the list displayed by the Dictionary Reports facility change. However,
the names of Model 204 procedures for those reports are not affected. To
change the name of the actual procedures, you must modify the procedure
stored in TABLE D of the D204RPT file.

To add a procedure name:

1. Type an X in the prefix area for the Add Procedure Name prompt.

2. Use the tab or cursor keys to advance the cursor to the Enter Procedure
   Name: prompt.

3. Type the name of the procedure you want to add.
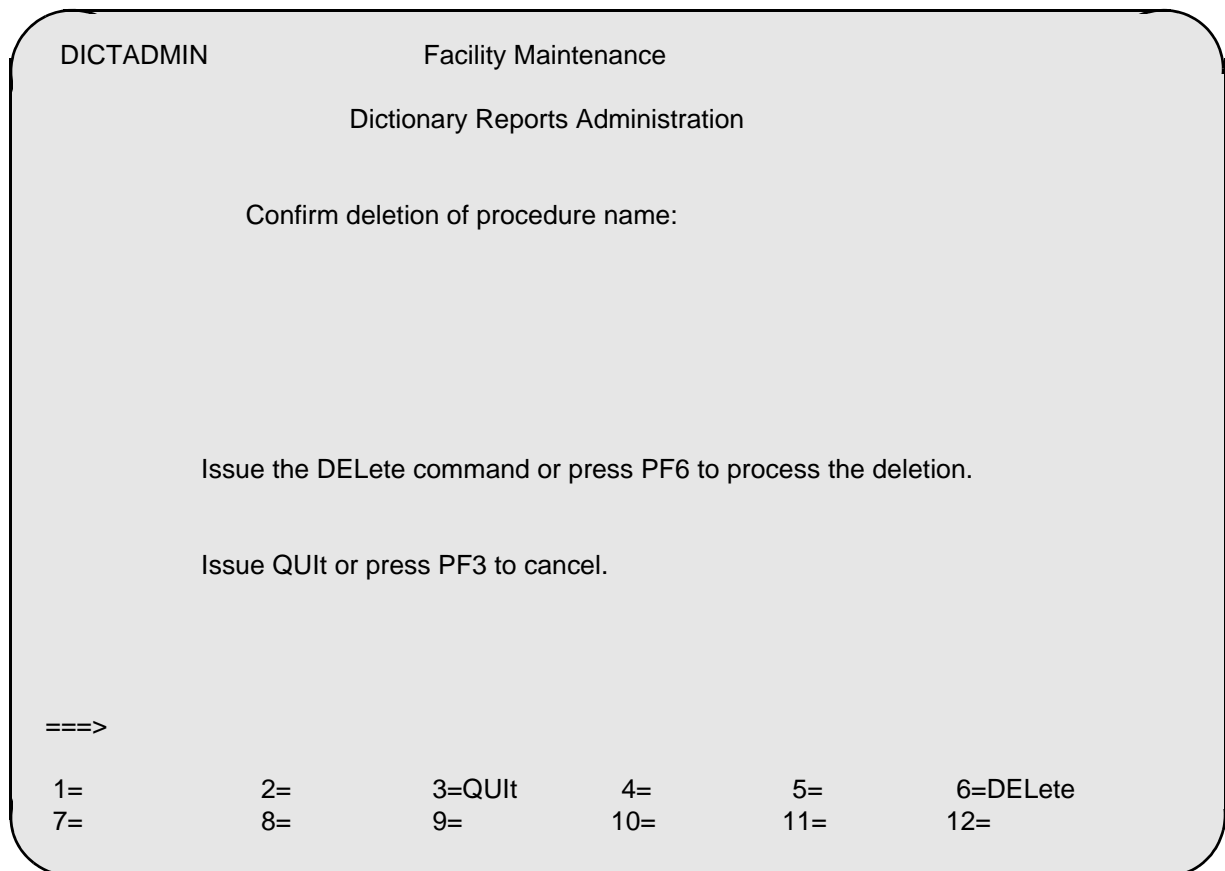
4. Press PF6 or issue the EXECUTE command.

To rename a procedure:

1. Type an X in the prefix area for the Rename Procedure prompt.

2. Use the tab or cursor keys to advance the cursor.

3. Respond to the Enter Procedure Name: prompt by typing the name of the procedure you want to rename.

4. Advance the cursor to the prompt Rename Procedure to:, and type in the new name of the procedure.

5. Press PF6 or issue the EXECUTE command to process the rename.

To delete a procedure name:

1. Type an X in the prefix area for the "Delete procedure name" prompt.

2. Respond to the Enter Procedure Name prompt.

3. Press PF6 or issue the EXEcute command to proceed to the following confirmation screen.

```
DICTADMIN                      Facility Maintenance

                       Dictionary Reports Administration


            Confirm deletion of procedure name:






            Issue the DELete command or press PF6 to process the deletion.


            Issue QUIt or press PF3 to cancel.




 ===>

  1=              2=            3=QUIt        4=            5=            6=DELete
  7=              8=            9=            10=           11=           12=
```

4. The name of the procedure is supplied by the system. Press PF6 or issue the DELETE command to complete the deletion, or press PF3 to cancel the deletion.

If you confirm the deletion, the procedure name no longer appears on the list of user-written procedures that the Dictionary Reports facility displays. However, the procedure remains in the D204RPT file, though it is no longer available to users. If you want to delete the procedure, you must remove it from the D204RPT file using Model 204 commands.

Creating customized reports

The administrator can create customized reports to control the selection of dictionary records and to organize the reports according to the needs of your installation. For example, you might want a report that shows duplicate data records in your dictionary. No standard report shows that information. This section demonstrates how the dictionary administrator can write and name a customized (or user-written) report. Further on in this section there is an example of a procedure that produces a customized report.

Dictionary internal structure

Two types of records are stored in METADATA. Control records (identified by REC=X field=value) are the template for each entity type; and entry records (identified by REC=D field=value) are the actual entity occurrences with data. The following example shows a METADATA control record for an ACCOUNT entity type:

```
REC             =X
ENTITY          =ACCOUNT
REQ             =NAME
REQ             =CREATE DATE
REQ             =LAST UPDATED
REQ             =UPDATED-BY
REQ             =DES
SYS.ATTRIB      =OUTPUT FILE
SYS.XREF        =FACILITY
SYS.REFTYPE     =~USES
ATTRIB          =KEYWORD
ATTRIB          =ALIAS
ATTRIB          =PROC FILE NAME
XREF            =VIEW
REFTYPE         =~OWNS
XREF            =VIEW
REFTYPE         =~UPDATES
```

The REQ values specify required attributes. SYS.ATTRIB values specify attributes controlled by Dictionary/204 facilities and ATTRIB values specify other attributes maintained through the DOCUMENT facility.

Within the dictionary system, the values of REQ, SYS.ATTRIB, and ATTRIB become field names in METADATA. Entry occurrences are stored using the value of the attribute as the field name. The value with that field name becomes the character string the user supplies during an "add entry" or "change entry"

operation. XREF and REFTYPE and SYS.XREF and SYS.REFTYPE occur in pairs. XREF contains the values of entity types (one per XREF) and REFTYPE contains the name of the reference type to the entity type in the corresponding XREF field. A tilde (~) by itself indicates a cross-reference. The tilde must also prefix any reference name. Values from XREF and REFTYPE are displayed on the screen to prompt the user for references to other entries. SYS.ATTRIB, SYS.XREF and SYS.REFTYPE values are maintained through specific Dictionary/204 facilities.

Sample Customized Report

```
**************************************************************
*  *
*  PROCEDURE NAME..........: USRN.DUPREPT *
*  VERSION.................: 1 *
*  PROCESSING SUMMARY......: SAMPLE USER WRITTEN REPORT, IT WILL *
*  READ METADATA AND LOOK FOR DUPLICATE DATA RECORDS AND *
*  DISPLAY RESULTS, IT THEN RETURNS TO USER WRITTEN REPORT *
*  MENU IN THE DICTREPORT FACILITY *
*  WRITTEN BY..............: RICK WAHLBERG *
*  modifying authors *
*  CALLED FROM.............: DIRN.USERREPT *
*  CALLS TO................: N/A *
*  INCLUDES................: N/A *
*  INCLUDED BY.............: N/A *
*  GLOBAL VARIABLES READ...: N/A *
*  GLOBAL VARIABLES SET....: N/A *
*  LOCAL VARIABLES READ....: N/A (used for subroutine procs *
*  LOCAL VARIABLES SET.....: N/A (to describe arguments *
**************************************************************


IF PAPR=Y,DIRO.DDRPTS


*
BEGIN
*
VARIABLE.DECLARATIONS:
*
%ENTITY IS STRING LEN 20
%NAME IS STRING LEN 255
%CURREC IS FLOAT
%DUP.FOUND IS FLOAT
%RETRY IS FLOAT
%CHOICE IS STRING LEN 70
%INDEX IS FLOAT


ERROR.MESSAGES:
%GFMSG IS STRING LEN 50
```

```
 %GFMSG = 'GLOBAL VARIABLE TABLE IS FULL.'
 %USR001 IS STRING LEN 60
 %USR001 = 'USR001 PA1 ENTERED ON SCREEN, REPORT IS CANCELLED'
 %USR002 IS STRING LEN 60
 %USR002 = 'USR002 UNRESOLVED ENQUEUE CONFLICT, REPORT HALTED.'


********************************************************************
*
 * ON UNIT DECLARATIONS

********************************************************************
*
 ON.ATTN:
 ON ATTN
 PRINT %USR001
 JUMP TO RETURN.TO.MENU
 END ON
 ON.FIND.CONFLICT:
 ON FIND CONFLICT
 %RETRY = %RETRY + 1
 IF %RETRY > 10 THEN
 PRINT %USR002
 AUDIT %USR002
 JUMP TO RETURN.TO.MENU
 ELSE RETRY
 END IF
 END ON

 MAIN.LOGIC:

 IN METADATA CLEAR LIST XRECS

 FD.XREC: IN METADATA FD REC = X
 END FIND
 PLACE RECORDS IN FD.XREC ON LIST XRECS
 RELEASE RECORDS IN FD.XREC

 FR.FD.XREC: FOR EACH RECORD ON LIST XRECS
 %ENTITY = ENTITY
 FD.DREC: IN METADATA FD REC = D AND ENTITY = %ENTITY
 END FIND

 IN METADATA CLEAR LIST DRECS
 PLACE RECORDS IN FD.DREC ON LIST DRECS
 RELEASE RECORDS IN FD.DREC
 FR.FD.DREC: FOR EACH RECORD ON LIST DRECS


 %NAME = NAME
```

```
FD.DUP.DREC: IN METADATA FD REC=D
ENTITY=%ENTITY
NAME=%NAME
END FIND
CT.FD.DUP.DREC: CT FD.DUP.DREC
IF COUNT IN CT.FD.DUP.DREC > 1 THEN
%DUP.FOUND = %DUP.FOUND + 1
SKIP 2 LINES
PRINT ' DUPLICATE RECORDS ON METADATA FOUND ' AT 10
PRINT 'ENTITY TYPE IS: ' AND %ENTITY AND ' NAME IS: ' AND -
%NAME
FR FD.DUP.DREC
%CURREC = $CURREC
SKIP 1 LINE
PRINT 'RECORD NUMBER: ' AND %CURREC
PRINT ' CREATE DATE IS' AND CREATE DATE
PRINT ' LAST UPDATED ' AND LAST UPDATED
PRINT ' UPDATED BY ' AND U'PDATED-BY'
END FOR
REMOVE RECORD FROM LIST DRECS
END IF
RELEASE RECORDS IN FD.DUP.DREC
END FOR
END FOR
NUMBER.DUPS:
SKIP 2 LINES
PRINT 'NUMBER OF DUPLICATES FOUND IS: ' AND %DUP.FOUND
RETURN.TO.MENU:
** NEXT STATEMENT WILL CAUSE RETURN TO USER WRITTEN REPORTS MENU

%CHOICE = 'DIRN.USERREPT'
IF $SETG('COMM',%CHOICE) THEN PRINT %GFMSG
END IF

END
```

File Management options

The following screen is displayed when you select the following option from the
Facility Administration menu:

```
File Management Options
```

Use this screen to set command options and defaults for the File Management
facility.

```
DICTADMIN                    Facility Maintenance

                          File Management Options


Choose one or more command execution options
Choose only one command execution default




              Options                              Default
X Active-Immediate Execution  X
X Active-Delayed Execution _
X Inactive: Generate commands only _


                    If Inactive option specify
                        Use filename: OUTFILE
                        Proc filename:



 ===>

1=HELp        2=         3=QUIt        4=         5=         6=
7=            8=         9=           10=        11=        12=END
```

Input

This screen enables you to determine the File Management command options supported at your site and to define the defaults for these options.

Type an X in the left column, to select the options that you want to make available at your site. Type an X in the column to the right of the option that you want to be the default. The default must be one of the options selected. (The previous screen shows the system default values.)

Option	If you choose this option...
Active-Immediate Execution	Dictionary/204 and Model 204 are synchronized and any change you make in the dictionary files is also made in the Model 204 database at the same time.
Active-Delayed Execution	File management facility updates the command's status as "pending." These pending commands are implemented later while running the batch version of File Management (DDFIMCMD).

Option	If you choose this option...
Inactive: Generate Commands Only	Dictionary/204 generates commands, but you must run them independently.
	If you choose this option, you must supply either the name of a directed output file (called a USE file, such as OUTFILE), or you must indicate that you want the commands stored in a procedure file. Select a procedure file by entering a file name at the Proc filename: prompt.

The system manager can prevent users from issuing commands against files from outside of Dictionary/204 by setting the SYSOPT parameter to the appropriate value. The table of values can be found in the Rocket Model 204 documentation wiki pages:

http://m204wiki.rocketsoftware.com/index.php/SYSOPT_parameter

Setting the parameter to prevent command execution outside of Dictionary/204 precludes selecting the Inactive execution mode.

Screen and Action Generator options

Screen and Action Generator is a Workshop/204 facility that automatically generates procedures based on view definitions. The maintenance options for this facility enable the Workshop/204 administrator to determine:

- Default file in which the driver procedure is stored

- Default file in which the action procedures are stored

- Default QUERY action procedure used by a driver

- Default DISPLAY action procedure used by a driver

The following screen is displayed when you select the following option from the Facility Administration menu:

```
Screen and Action Generator Options
```

The default values supplied at installation appear on the screen. To change these values, type the desired file name or procedure name over the existing name. Delete extra characters with the Erase EOF key. Then press PF12 or issue the END command to process your selection. The system returns you to the Facility Administration menu.

To quit from the Screen and Action Generator Options screen, press PF3 or issue the QUIT command. To read the online HELP text, press PF1 or issue the HELp command.

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│    DICTADMIN                      Facility Maintenance                 │
│                                                                       │
│                                                                       │
│                    Screen And Action Generator Options                │
│                                                                       │
│                                                                       │
│    Enter default values for the following SCREENGEN parameters:       │
│                                                                       │
│    File in which to store generated driver procedures: SCGPROC        │
│    File in which default action procedures are stored: M204PROC        │
│                                                                       │
│    Query action procedure                                             │
│    Name: SCGO.QUERY                                                    │
│                                                                       │
│    Display action procedure                                           │
│    Name: SCGO.DISPLAY                                                  │
│                                                                       │
│                                                                       │
│                                                                       │
│      ===>                                                              │
│                                                                       │
│    1=HELp         2=         3=QUIt        4=         5=         6=    │
│    7=             8=         9=            10=        11=        12=END │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

Security administration

The dictionary administrator uses the Security Administration function on the Dictionary Administration menu to specify the privileges of Dictionary/204 and Workshop/204 users. The administrator defines the privileges through the user's ACCOUNT entry in the dictionary. (The Dictionary/204 installation procedure gives the dictionary administrator user privileges for all the Dictionary/204 facilities.)

A user's privileges are authorized by facility. No distinction is made between update privileges and read-only privileges. Access to a facility implies the privileges to do whatever that facility allows. Dictionary/204 users, however, are limited by their Model 204 privileges, which override their ability to use certain features of the Dictionary/204 and Workshop/204 facilities. (For specific examples, see "Security considerations" on page 75.)

PUBLIC account

During installation, an ACCOUNT entry named PUBLIC is defined by Dictionary/204. The PUBLIC account, as its name implies, shares its "user" privileges with all Dictionary/204 users. For example, if the administrator gives

PUBLIC privileges to use Dictionary Reports, then all accounts become Dictionary Reports users.

The ACCOUNT entity type has an OUTPUT FILE attribute, indicating the device (usually a printer) to which output is sent when the user does not want it sent to the terminal. The default value for this attribute is the same as the default value of the PUBLIC account, which is set at installation. The value can be modified by the dictionary administrator by updating the PUBLIC account through the Security Administration screen. Users can also override the default value when using the Dictionary/204 facilities.

The administrator assigns user privileges for the PUBLIC account prior to assigning privileges for the accounts of individual users. This means PUBLIC facilities are assigned to each user automatically on the "Facility Profile" for each individual account (see the screen in "Defining, updating, and deleting ACCOUNT privileges" on page 146).

Selecting security administration

Dictionary/204 displays the following screen shown when the dictionary administrator selects the Security Administration function from the Dictionary Administration menu:

```
  DICTADMIN                      Security Administration



  1. Define New Account


  2. Update Account


  3. Delete Account


  Enter Number: 2


   Account: JLSMITH




   ===>
  1=HELp         2=            3=QUIt        4=           5=           6=
  7=             8=            9=            10=          11=          12=
```

This menu enables the administrator to define (add) a new account, update the privileges of an existing account, or delete an existing account.

The previous menu shows a sample selection: updating the privileges of the user whose account name is JLSMITH. This function works by providing an interface (see the following screen) that updates the ACCOUNT entry with the name JLSMITH.

Input

To make a selection from the menu, enter the number of your choice at the Enter Number: prompt and type the name of the account to be defined, updated, or deleted at the following prompt: Account:

If the administrator is assigning privileges to the PUBLIC account, for example, the name PUBLIC appears following the Account: prompt.

You can process your menu selection by pressing Enter, which causes the following Security Administration screen to be displayed. You can also quit this facility by pressing PF3 or request HELP text by pressing PF1 (or issuing the HELP command).

Defining, updating, and deleting ACCOUNT privileges

Dictionary/204 displays a screen similar to the following when you select one of the options from the preceding menu.

```
DICTADMIN                    Security Administration
                     Updating Security Profile for JLSMITH
  Facility                                            Defined as Part of

   X DICTREPORT PUBLIC DICTIONARY
   _ DICTADMIN DICTIONARY
   X DOCUMENT DICTIONARY WORKSHOP
   _ FILEMGMT DICTIONARY WORKSHOP
   _ SUBSYSMGMT DICTIONARY WORKSHOP
   _ XREF    PUBLIC DICTIONARY
   X PAINTER PUBLIC WORKSHOP
     SCREENGEN Not Installed WORKSHOP
   _ SSTEST WORKSHOP
   X QUERYUPDT PUBLIC WORKSHOP
     PROCEDIT Not Installed WORKSHOP
     PCVOLMGMT Not Installed


  Default Output Destination: OUTFILE
   ===>

  1=HELp        2=           3=QUIt       4=         5=         6=
  7=            8=FORward    9=           10=        11=        12=END
```

The sample screen shows 12 facilities for which the account JLSMITH might be assigned privileges. You can scroll forward to display more facilities by pressing PF8.

JLSMITH is the name that was entered at the Account: prompt on the previous menu. The heading on the screen shows that the update function was selected. When the delete function is selected, the screen heading reads "Deleting Security Profile for *<ACCOUNT name>*." When the add function is selected, the screen heading reads "Security Profile for *<ACCOUNT name>*."

In the prefix area, an X marks those facilities and products for which the ACCOUNT has user privileges. Facilities designated as PUBLIC can be used by all accounts. A "Not Installed" message (as shown in column two of the screen) indicates that the corresponding facility has not been installed with your Dictionary/204 product.

The two columns at the right indicate whether a facility is found on the Dictionary/204 menu, the Workshop/204 menu, or both.

Input

To indicate that an ACCOUNT has user privileges for a facility, type an X in the prefix area:

```
X DICTREPORT
```

To revoke facility privileges from the ACCOUNT, erase the X by blanking it out with the space bar or the Erase EOF key. Use the tab keys to move the cursor from one prefix line to the next.

If a facility is available to all Dictionary/204 users, the following word appears in column three, as shown in the sample screen, and an X appears in the prefix area for that facility:

```
PUBLIC
```

As noted earlier, if the administrator has given the PUBLIC account user privileges for a facility, that privilege extends to all Dictionary/204 users and the word PUBLIC appears to the right of the facility (as shown on the screen).

To specify an alternative output destination (other than the user's terminal), type the device or file name at the prompt:

```
Default Output Destination:
```

The alternative output destination is an option for the Dictionary/204 user when output to the terminal is not desired. This value is the default. (The system sets the default destination to the value of the OUTPUT FILE attribute specified for the PUBLIC account.) Normally, the user can change the output destination when using a facility. The Output Destination name must be from 1 to 30 characters.

After filling in the screen, you can implement your selection by pressing PF12 (or issuing the END command), or cancel the request by pressing PF3 (or issuing the QUIT command).

When the function you have selected on the menu has been processed, Dictionary/204 returns you to the Security Administration menu and displays the following message on the message line:

```
Account <ACCOUNT name> has been <function>
```

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read through a series of HELP screens, or exit from the last screen in the series, by pressing any key.
PF3	QUIt	Terminates this function. You return to the Security Administration menu.
PF6	DELete	Deletes an account entry. This option is displayed only if the delete function is selected from the Security Administration menu.
PF7	BACKward	Scrolls backward through the list of facilities. This option appears at the bottom of the screen only if you have scrolled forward.
PF8	FORward	Scrolls forward through the list of facilities. This option appears at the bottom of the screen if there are more facilities to be displayed.
PF12	END	Implements the selection on the screen. You return to the Security Administration menu.

Printing a dictionary inventory

Dictionary/204 displays the following screen when you select the following option from the Dictionary Administration menu:

```
Inventory Report
```

Use this option to request a formatted, printed report of the entire contents of the dictionary. This facility reports on the attributes and references of all entries of each entity type. The processing time required to format and print the dictionary inventory can be quite long, depending upon the complexity and number of dictionary entries.

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│    DICTADMIN Inventory Report                                         │
│                                                                       │
│                                                                       │
│   The Inventory Report will be sent to the output device             │
│    displayed below. To change the report destination                 │
│    type over the default.                                            │
│                                                                       │
│                                                                       │
│                                                                       │
│   Output Destination:                                                 │
│                                                                       │
│                                                                       │
│   ===>                                                                │
│                                                                       │
│   1=HELp        2=            3=QUIt        4=          5=          6=        │
│   7=            8=FORward     9=            10=         11=         12=END     │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

Input

The screen shows the default output device. You can change the destination
by typing over the default value with the device name of another printer. When
you have specified the output device correctly, press Enter to proceed or press
PF3 to return to the Dictionary Administration menu.

Once the system has begun printing the report, you can cancel the request and
abort the process by pressing PA1.

Upon completion of the report the system returns you to the Dictionary
Administration menu where the following message is displayed:

```
The Inventory Report has been sent to the output device
```

Output

The Inventory Report is always sent to a printer; it cannot be displayed on your
terminal.

A sample entry from an Inventory Report follows.

The Dictionary Inventory Report is printed in sorted order. Each entry begins on a new page, as shown in the sample.

```
 27 AUG 05      DICTADMIN Dictionary Inventory Report         PAGE 1


                        Entry Definitions for Entity Type: REPORT


Name: TRAVEL MANAGEMENT SUMMARY
Entity: REPORT
Create Date: 13 OCT 89 Last Updated: 15 JUL 05 Updated by: BJ

Short Description  This report provides information for travel agency
  management on business booked during the past
  month and prospects for the coming month.


KEYWORD :   MANAGEMENT
  SUMMARY
  TRENDS
ALIAS :  BUSINESS
REPORT TYPE :  MANAGEMENT
REPORT TITLE :  AGENCY SUMMARY - MONTH OF MM,YY
PRIORITY LEVEL : 1
FREQUENCY :  MONTHLY
AVERAGE LENGTH :  5 PAGES
ROUTING :  PRESIDENT, DEPARTMENT HEADS
PAPER STOCK :  STANDARD
SECURITY LEVEL :   2
NUMBER OF COPIES :   20
```

```
27 AUG 05      DICTADMIN Dictionary Inventory Report        PAGE 2

                    Entry Definitions for Entity Type: REPORT

 Relationships from TRAVEL MANAGEMENT SUMMARY REPORT:



   - FILE : CUSTOMER
 REVIEWED  USER : TOUR AND TRAVEL

 Relationships to TRAVEL MANAGEMENT SUMMARY REPORT:


 PART OF REPORT : MARKETING


 END OF REPORT >
```

Duplication correction utilities

Dictionary/204 provides a set of utilities for the dictionary administrator to use for verifying data integrity. These utilities are described in detail in this section. Use the utility to correct duplicate entity types or entries ("Correcting duplicate entries or entity types"), if any of the following error messages are generated during the operation of Dictionary/204:

- Dictionary Administration facility message:

  DIA102 Duplicate entity types found, contact your
          Dictionary Administrator.

- Documentation facility messages:

  DOC013 Duplicate entries found for the tagged name.
          Contact System Administrator.

  DOC015 Duplicate control records for this entity type.

- Dictionary Reports facility message:

  DUPLICATE ENTRIES WERE FOUND FOR
  ENTRY: RECORD_ONE
  ENTITY: DUPRECORD
  REPORT THIS TO YOUR DICTIONARY ADMINISTRATOR.
  THIS REPORT HAS BEEN CANCELLED.

The Dictionary administrator must supply the entity type and entry name for the entry in error when taking corrective action, as described in "Correcting duplicate entries or entity types".

Correcting duplicate entries or entity types

Dictionary/204 provides a special routine, called DICN.CTRLDUP, which can be used to eliminate duplicate entries or entity types. This routine is distributed in the form of a Model 204 SOUL procedure that resides in the Dictionary/204 file M204PROC.

You must stop Dictionary/204, Workshop/204, and all their facilities, as described in "Starting and stopping the Dictionary/204 subsystems" on page 52. Then open the Dictionary/204 M204PROC file.

Next, run the procedure, using the Model 204 INCLUDE command (INCLUDE or I):

```
> OPEN M204PROC
> I DICN.CTRLDUP
```

Model 204 automatically opens the Dictionary/204 METADATA file. The METADATA password prompt is displayed after the file is opened. Enter the password at the prompt or press Enter. The procedure prompts you for the entity type (for example, FILE) and entry name (for example, PAYROLL) of the dictionary entry for which the duplicate record was found:

```
*** FILE METADATA OPENED
??METADATA PASSWORD
$$ENTER ENTITY TYPE VALUE: > FILE
$$ENTER NAME IF FOR ENTRY RECORD: > PAYROLL
```

Note: If a password is required, you must supply an update password.

If you are correcting a duplicate entity type, press Enter in response to the ENTER NAME IF FOR ENTRY RECORD prompt.

DICN.CTRLDUP displays the duplicate records, as shown in the following example. Each entry is identified with a DDSTAT number. After the display has been completed, enter the DDSTAT number of the entity or entry record that you want to preserve:

```
$$ENTER DDSTAT VALUE OF ENTRY YOU WISH TO KEEP:
```

The procedure deletes the duplicate record and redisplays the record that is being preserved. You are prompted for the following:

```
$$DO YOU WISH TO CONTINUE (Y/N)?
```

Enter N to return to command level; enter Y to continue.

If the specified duplicate record cannot be found, DICN.CTRLDUP displays one of the following messages:

```
**** NO DUPLICATES WERE FOUND FOR ENTITY
**** REQUEST FINISHED

 *** NO DUPLICATES WERE FOUND FOR NAME ENTITY
**** REQUEST FINISHED
```

In this case, DICN.CTRLDUP displays the existing entity type or entry.

The following example uses DICN.CTRLDUP:

```
 STOP DICTIONARY

 OPEN M204PROC
 I DICN.CTRLDUP

 ENTER ENTITY TYPE VALUE: > WIDGET
 ENTER NAME IF FOR ENTRY RECORD: > SNX13
 **** ENTRY RECORD FOLLOWS:
 ENTITY=WIDGET
 NAME=SNX13
 CREATE DATE=19 MAR 82
 DDSTAT=1

 **** ENTRY RECORD FOLLOWS:
 ENTITY=WIDGET
 NAME=SNX13
 CREATE DATE=19 MAR 82
 DDSTAT=2

 **** ENTRY RECORD FOLLOWS:
 ENTITY=WIDGET
 NAME=SNX13
 CREATE DATE=19 MAR 82
 LAST UPDATED=22 MAR 82
 KEYWORD=WID
 DDSTAT=3

 $$ENTER DDSTAT VALUE OF ENTRY YOU WISH TO KEEP: >3


 **** THIS IS THE CURRENT ENTRY FOR SNX13 WIDGET:
ENTITY=WIDGET
 NAME=SNX13
 CREATE DATE=19 MAR 82
 LAST UPDATED=22 MAR 82
 KEYWORD=WID

 *** REQUEST FINISHED ***

 $$DO YOU WISH TO CONTINUE (Y/N)? > N
```

Note: A sample report is provided (USRN.DUPREPT) that reports on duplicate entries in the dictionary. It is available as a customized report in Dictionary Reports (see "Selecting a user-written (customized) report" on page 180).

Correcting duplicate relationships

Dictionary/204 provides a special routine, called DICN.CLEANLNK, to eliminate duplicate relationships in the DATALINK file. This routine is distributed in the form of a Model 204 SOUL procedure that resides in the Dictionary/204 file, M204PROC.

You must stop Dictionary/204, Workshop/204, and all their facilities, as discussed in "Starting and stopping the Dictionary/204 subsystems" on page 52. Then open the Dictionary/204 files DATALINK and M204PROC. Next, run the procedure using the Model 204 INCLUDE command (INCLUDE or I):

```
> OPEN DATALINK
(enter update password if secured)
OPEN M204PROC
(enter password if secured)

 > I DICN.CLEANLNK
```

DICN.CLEANLNK displays the current number of entries found in DATALINK:

```
THERE ARE # REFERENCES CURRENTLY STORED.
```

The procedure then deletes any duplicate reference entries found. At the completion of the request another count is displayed:

```
THERE ARE # RESULTING REFERENCES.
```

The following example uses DICN.CLEANLNK:

```
> O DATALINK
*** M204.0620: FILE DATALINK OPENED
> O M204PROC
*** M204.0620: FILE M204PROC OPENED
> I DICN.CLEANLNK
THERE ARE 1293 REFERENCES CURRENTLY STORED.
THERE ARE 1289 RESULTING REFERENCES.
*** M204.0172: END OF UPDATE 7 at 10:29:57.45
```

7

Dictionary/204 Reports

Overview

This chapter explains how to query the dictionary and generate reports on dictionary data. All reports are displayed at the terminal, unless routed to a printer or a specified output file.

Dictionary/204 provides online interfaces for querying and reporting on the entries in the dictionary. The reports can include:

- All the attributes and relationships for a given entry

- List of all of the entries for a given type of entity — all SCREENs, all FILEs, and so on

- Entries selected by name, entity type, relationship with another specified entry, or specific keywords

Logging on

To log on to the Dictionary Reports facility, choose one of the following methods:

- Type the number of the Dictionary Reports option at the Enter Number: prompt on the Dictionary/204 main menu.

  If your main menu does not display the Dictionary Reports option, you have not been authorized to use this facility.

- Invoke the Dictionary Reports facility from the primary screens of another Dictionary/204 or Workshop/204 facility with the INVOKE command. The syntax of the command is:

```
INVoke DICTREPORT
```

- Call the Dictionary Reports facility subsystem from the Model 204 command prompt by typing the subsystem name:

  > **DICTREPORT**

  You can log on to the Dictionary Reports facility with this method only if the DICTREPORT subsystem has been started.

Selecting a report option

Dictionary/204 displays the following menu when you select Dictionary Reports facility:

```
DICTREPORT                Dictionary Reports Main Menu              Release N.n


                    1. Display an Entry

                    2. List Entries of an Entity Type

                    3. Display Cross-References for an Entry

                    4. Display Named References for an Entry

                    5. Display All References for an Entry

                    6. Browse Entries by Attributes

                    7. Select User-Written Report

                          Enter Number:

                          Output Destination: OUTFILE


===>
1=HELp     2=          3=QUIt        4=          5=          6=
7=         8=          9=           10=         11=         12=
```

The Dictionary Reports facility provides the following capabilities:

1. Displaying dictionary entries. You can display the attributes and/or relationships (or *references*) for an entry of a specified entity type.

2. Displaying lists of entries by entity type. You can display a list of entries of one or several entity types. For example, the names of all the files, all the procedures, and so on.

3. Displaying relationships between entries based on cross-references only. You can search all entries or only entries of a particular entity type.

4. Displaying relationships between entries based on named references only. You can search all entries or only entries of a particular entity type. Named references are unidirectional and take the form A ===> B. Yet, Dictionary/204 also allows you to search for entries that are related to B (including A).

5. Displaying any relationship between entries including cross-, named, or path (indirect) references. (See Chapter 1 and "Defining paths: in theory" on page 126 for a discussion of "path relationships.")

6. Browsing through entries selected by the value of their KEYWORD attribute, the UNQUALIFIED NAME attribute, or optionally browsing entries selected by the value of specific standard attributes. You can restrict browsing to a single entity type or browse all the dictionary entries, regardless of entity type.

7. Selecting a report written by your installation.

Input

To select a standard report option from this menu, enter the number of your selection at the prompt:

```
Enter Number:
```

Dictionary/204 responds by displaying a screen appropriate for the report requested. For example, if you select the option Display an Entry, Dictionary/204 next displays the Display An Entry screen, which prompts you to specify the name of the entry to be reported on. (See "Displaying an entry" on page 158.)

Normally, reports are sent to your terminal. However you can optionally send them to a designated output device (such as a printer) or to a specified file. The following prompt names an alternative destination for your output:

```
Output Destination:
```

The default output file is OUTFILE, if no other value has been specified in your ACCOUNT entry. Responding to this prompt, however, does not constitute an instruction to route your output to an alternative destination. It simply designates the destination in case you select the option later. The Output Destination name can be from 1 to 30 characters.

If you want to send a report to a destination other than your terminal, a value for Output Destination is required.

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Terminates the Dictionary Reports function. You return to the Dictionary/204 main menu, to the screen from which this facility was invoked, or to the Model 204 command prompt.
	INVoke	Invokes another facility for which you have user privileges. Enter the following command at the command prompt and then press the Enter key: `INVoke facility_name`

Displaying an entry

Dictionary/204 displays the following screen when you select the following option from the Dictionary Reports menu:

```
Display an Entry
```

Use this screen to display the dictionary definition of a particular entry. You can display the report on your terminal or have it printed to the output location specified on the preceding screen.

```
DICTREPORT                    Display Entry


Name: TRAVEL MANAGEMENT SUMMARY


Entity type: REPORT

Select Display Options with an X


   Display references:          X
   Display system attributes    : _
   Display system references    : _



                   Route to Output File: N



===>
1=          2=          3=QUIt      4=          5=          6=WIDen
7=          8=          9=          10=         11=         12=
```

Input

Identify the dictionary entry to be displayed and request particular display options by responding to the following screen prompts:

Type the name of the entry at the prompt:

```
Name:
```

Enter the entity type for the dictionary entry being displayed (for example, FILE, FIELD, REPORT), at the prompt:

```
Entity Type:
```

Use your cursor or tab keys to position the cursor at the prompts. Do not press Enter until you have completed your report specification.

On this report, nonsystem attributes are displayed by default. To display relationships and/or system data for this entry, type an X at the appropriate prompt:

```
Display references: _
```

```
Display system attributes: _
Display system references: _
```

In the previous sample screen, the TRAVEL MANAGEMENT SUMMARY report entry is requested. No system data for the REPORT entity type exists, because REPORT is an entity type created by the dictionary administrator and has no system attributes.

By default, Dictionary/204 sends reports to your terminal. You can direct the output to a different destination, however, by typing Y over the default value of N at the following prompt:

```
Route to Output File: N
```

Your output file is already specified on the Dictionary Reports menu. (The output destination can be a printer or a specified file.)

Press Enter to generate the report. Issue the QUIT command to terminate this function and return to the Dictionary Reports menu without generating a report.

Displaying FIELD, RECORD, FIELD GROUP, and PROCEDURE entries

Displaying FIELD, RECORD, FIELD GROUP, and PROCEDURE entries is a special case, because these entries require a file name prefix concatenated by a period to the entry's UNQUALIFIED NAME. For example, the uniquely identifying name of the SOCSECNUM field in the PERSONNL file is PERSONNL.SOCSECNUM. When requesting a report on a FIELD, RECORD, FIELD GROUP, or PROCEDURE entry, the name (including the file name prefix) of a FIELD, RECORD, FIELD GROUP, or PROCEDURE entry might exceed the 70 character spaces provided at the Name: prompt. In this case, you must press PF6 (or issue the WIDEN command) from the input screen.

```
DICTREPORT                    Widen Screen


    File Name: PERSONNL


    Entry Name:


    SOCSECNUM_____




===>
1=HELp          2=            3=QUIt        4=          5=          6=
7=              8=            9=            10=         11=         12=
```

Dictionary Reports then displays the Widen Screen shown above, which allows you to enter a file name not exceeding 8 characters and an entry name not exceeding 70 characters. Any portion of the name that you have entered on the input screen prior to issuing the WIDEN command appear on the Widen Screen. If there is a period in the name prior to the tenth character, the facility interprets the name to the left of the period as a file name.

When you have entered the entry's name on the interim screen, you can press PF3 (QUIT) to cancel the input or press PF12 (END) to enter the input on the preceding (Display an Entry) screen. If you press PF12, the first 70 characters of the file name plus the entry name appear on the Display Entry screen. Press Enter to process your report.

Output

When the report is displayed at your terminal, press Enter to return to the Display Entry screen or to see additional report screens.

When you have finished displaying or printing your report, Dictionary/204 presents the Display Entry screen again. At this point, you can request another report or press PF3 to quit.

An example of an entry report based on the request shown on the sample screen follows.All attributes defined by the dictionary administrator are listed, including those categories for which no values have been entered by the dictionary users.

```
 27 AUG 90              DICTIONARY Entry Report                    PAGE 1


 Name: TRAVEL MANAGEMENT SUMMARY
 Entity: REPORT
 Create Date: 24 OCT 88      Last Updated: 11 FEB 90      Updated By: JLSMITH
 Short Description:

 THIS REPORT PROVIDES INFORMATION FOR TRAVEL AGENCY
 MANAGEMENT ON BUSINESS BOOKED DURING THE PAST MONTH
 AND PROSPECTS FOR THE COMING MONTH.

 KEYWORD : MANAGEMENT
   SUMMARY
   TRENDS
 ALIAS : BUSINESS
 DESCRIPTION :
 REPORT TYPE : MANAGEMENT
 REPORT TITLE : AGENCY SUMMARY - MONTH OF MM,YY
 PRIORITY LEVEL : 1
 FREQUENCY : MONTHLY
 AVERAGE LENGTH : 5 PAGES
 ROUTING : PRESIDENT, DEPARTMENT HEADS
 PAPER STOCK : STANDARD
 SECURITY LEVEL :
                            >
```

```
27 AUG 90              Reference Information              PAGE 2


Cross References For TRAVEL MANAGEMENT SUMMARY REPORT:


FILE                : CUSTOMER


TRAVEL MANAGEMENT SUMMARY REPORT is related to the
following entries:


USER              ~REVIEWED              : TOUR AND TRAVEL
USER              ~REVIEWED              : CRIMSON


The following entries are related to TRAVEL MANAGEMENT
SUMMARY REPORT:


REPORT            ~PART OF               : MARKETING

END OF REPORT
                  >
```

Interpreting the report

Attributes provided for this entity type appear to the left of the colons. The values appear to the right. Notice that multiple values have been added for the attribute KEYWORD, while no value has been entered for DESCRIPTION (perhaps because the SHORT DESCRIPTION is sufficient).

Relationships appear on an additional screen, including cross-references and named relationships in both directions. For example, this report is cross-referenced to the CUSTOMER file and is reviewed by two users (TOUR AND TRAVEL, CRIMSON) and is part of the MARKETING report.

```
A tilde (~) is displayed preceding all named relationships in
page 2 of the report shown above. DICTIONARY uses the tilde as
a prompt when the dictionary administrator defines relationships.
The tilde also appears before the name of a named relationship in
a dictionary report.
```

Commands

To issue command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Listing entries of an entity type

Key	Command	Meaning
PF3	QUIt	Terminates this function. You return to the Dictionary/204 main menu, to the facility from which Dictionary Reports was invoked, or to the Model 204 command prompt.
Enter		Processes the specified report. Do not press Enter until the report has been completely specified.

Dictionary/204 displays the following screen when you select the following option from the Dictionary Reports menu:

```
List Entries of an Entity Type
```

Use this screen to display or print the names of the dictionary entries of one or more particular entity types (for example, all the files in the dictionary), or the names of all the entries in the dictionary.

Select the desired entity type(s) from the entity types defined in your own installation's dictionary. The following sample menu displays only those standard entity types supplied with Dictionary/204. If your dictionary administrator has added other entity types to the dictionary (for example, REPORT, PROGRAMMER, and so on), these are displayed on the screen.

```
  DICTREPORT                    Display List of Entries

                 Select choices from available entity type(s):

            (    )  ACCOUNT              (    )  FIELD GROUP
            (    )  COBOL FIELD GROUP    ( X )  FILE
            (    )  COBOL RECORD         (    )  GROUP
            (    )  COBOL VIEW           (    )  PAINTER DEFAULTS
            (    )  COBOL VIEW FIELD     (    )  PC DRIVE
            (    )  COMPOSITE VIEW       (    )  PC VOLUME
            (    )  DEVELOPER DEFAULTS   (    )  PROCEDURE
            (    )  ENTITY               (    )  RECORD
            (    )  FACILITY             (    )  SCREEN
            (    )  FIELD                (    )  SCREEN ITEM


            (    )  All entity types


          Route to Output File: N
  ===>
   Additional Entity Types Appear on Next Screen - Enter Selection(s)

    1=             2=             3=QUIt      4=          5=          6=
    7=             8=             9=          10=         11=         12=
```

Input

Dictionary/204 displays up to 20 entity types on a single screen. The entity types are displayed in alphabetical order in two-column format. When more entity types are defined in the dictionary than can fit on the screen, Dictionary/204 displays the following message:

```
Additional Entity Types Appear on Next Screen - Enter
    Selection(s)
```

Press Enter to advance to the next screen. Scrolling backward from the next screen is *not* allowed.

Select as many entity types as you want by typing an X in the parentheses to the left of the entity type. Type an X to the left of "All entities" if you want to see all the entries in the dictionary.

By default, Dictionary/204 sends reports to your terminal. You can direct the output to a different destination by typing Y over the default value N at the following prompt:

```
Route to Output File: N
```

Your output file has already been specified on the Dictionary Reports menu (see "Selecting a report option" on page 156). The output destination can be a printer or a specified file.

Press Enter to generate the report. Issue the QUIT command (PF3) to terminate this function without generating a report and return to the Dictionary Reports menu.

Output

An example of a List report, based on the request shown on the sample screen, follows. The report shows the requested entity type (FILE), and lists the entries (the names of the files) defined in the dictionary. All entries are listed in alphabetical order. When the report is displayed at your terminal, press Enter to see additional screens of the report and to return to the previous selection screen.

After returning to the selection screen, you can request another report or press PF3 to quit.

```
 27 NOV 90  LIST OF ENTRIES PAGE 1


 LIST FOR ENTITY TYPE: FILE


 ACCSPAY
 ACCSREC
 CAMP
 CRUISE
 CUSTOMER
 MARKET
 PAYROLL
 PERSNEL
 RESERVT
 SAFARI
 TOUR
```

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF3	QUIt	Terminates this function.
Enter		Generates the report and displays additional pages of the report. When the report is completed, pressing Enter returns you to the selection screen.

Displaying cross-reference relationships

Dictionary/204 displays the following screen shown when you select the following option from the Dictionary Reports menu:

```
Display Cross References for an Entry
```

Use this screen to request the display of either of the following:

- Dictionary entries of a particular entity type that cross-reference a specified dictionary entry; for example, REPORTs that cross-reference the SAFARI FILE.

- Dictionary entries of any entity type that cross-reference a specified dictionary entry; for example, all entries that cross-reference the SAFARI FILE.

This screen generates reports that display cross-references established by the dictionary administrator or added to the dictionary by a user.

```
DICTREPORT                    Display Cross References


Select 1 of the following reports by filling in the blanks:

What
Entity type: REPORT
cross-references
Entity type: FILE
Name: SAFARI

What cross-references
Entity type:
Name:


Route to Output File: N




===>

 1=HELp          2=            3=QUIt        4=          5=          6=
 7=              8=            9=            10=         11=         12=
```

Input

Select the desired cross-reference report by typing the appropriate entity types and the entry name at the prompts provided. The name field allows a maximum length of 70 characters.

Use your tab key to move the cursor to each input field. Do not press Enter until you are ready to generate the report.

In the sample screen, the user asks Dictionary/204 which reports are cross-referenced to the SAFARI file.

The following prompts ask the dictionary for all entries that are cross-referenced to the SAFARI file (or some other specified entry):

```
What cross-references
Entity type:
Name:
```

By default, Dictionary/204 sends reports to your terminal. You can direct the output to a different destination, however, by typing Y over the default value of N at the following prompt:

```
Route to Output File: N
```

The name of your output file has already been specified on the Dictionary Reports menu (see "Selecting a report option" on page 156). The output destination can be a printer or a specified file.

Press Enter to generate the report. Issue the QUIT command (PF3) to terminate this function and return to the Dictionary Reports menu without generating a report.

Output

Dictionary/204 searches the dictionary for the specified name and entity type(s). If the entries cannot be found for the specified entity type, or if the specification is invalid, an appropriate message is displayed.

If no references are found in the specified categories, a report is generated with the following message:

```
No Cross-References Found
```

When the report is displayed, press Enter to see additional report screens and to redisplay this selection screen.

An example of a cross-reference report, based on the request shown on the sample screen, follows. The report lists the reports that reference the SAFARI FILE, one per line.

---

27 NOV 90   DICTIONARY CROSS-REFERENCE REPORT   PAGE 1

THE FOLLOWING ENTRIES CROSS-REFERENCE:

NAME: SAFARI
ENTITY: FILE

REPORT: SAFARI INVENTORY
REPORT: TRAVEL MANAGEMENT SUMMARY

END OF REPORT

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Terminates this function.
Enter		Generates the report and displays additional pages of the report. When the report is completed, press Enter to return to the selection screen.

Displaying named relationships

Dictionary/204 displays the following screen when you select the following option from the Dictionary Reports menu:

```
Display Named References for an Entry
```

Use this screen to display information about specified named relationships.

You can display the following:

- Entries that have the specified named relationship with any other entry.

- Entries (of any entity type or of a particular entity type) that the specified entry is related to by the specified named relationship.

- Entries (of any entity type or of a particular entity type) that have the specified named relationship to the specified entry.

```
┌─────────────────────────────────────────────────────────────────────────
│
│  DICTREPORT                    Display Named References
│
│
│  Enter named reference: REVIEWED
│
│
│  Display all references of this type or complete
│  one of the following options
│
│  Entity type: REPORT
│  Name: TRAVEL MANAGEMENT SUMMARY
│  is related to
│  Entity type / all: USER
│
│  Entity type / all:
│  is related to
│  Entity type:
│  Name:
│
│
│  Route to Output File: N
│   ===>
│
│  1=HELp          2=            3=QUIt        4=           5=           6=
│  7=              8=            9=            10=          11=          12=
│
└─────────────────────────────────────────────────────────────────────────
```

Specify the desired named reference at the prompt:

```
Enter named reference:
```

If you press Enter and generate a report at this point, Dictionary/204 includes all entities referenced by the particular named relationship (REVIEWED).

By responding to the following prompts, you can ask Dictionary/204 to find entries of one or all entity types that are related by the named relationship (REVIEWED) to a particular entry (in this case the TRAVEL MANAGEMENT SUMMARY report):

```
Entity type:
Name:
is related to
Entity type / all:
```

The sample screen asks which users reviewed the TRAVEL MANAGEMENT SUMMARY report. The entry name field allows a maximum length of 70 characters.

Use your tab key to move the cursor to each input field. Do not press Enter until you are ready to generate the report.

By responding to the following prompts, you can ask Dictionary/204 to find all entries (or all entries of a particular entity type) that are related to the specified entry by the REVIEWED relationship:

```
Entity type / all:
is related to
Entity type:
Name:
```

The sample screen asks Dictionary/204 which users review the TRAVEL MANAGEMENT SUMMARY report.

Press Enter to generate the report. Issue the QUIT command (PF3) to terminate this function and return to the Dictionary Reports menu without generating a report.

Output

Dictionary/204 searches for the specified named relationship, entity type, and entry name. If they cannot be found, or if the specification is invalid, an appropriate message is displayed.

If no entry is found for the specified relationship, Dictionary/204 generates a report with the following message:

```
No Named Reference <specified relationship> Found
```

When a full report is displayed, press Enter to see additional report screens or to redisplay the Named References report menu.

An example of a named relationship report, based on the request shown on the sample screen, follows. The report lists the entries to which the TRAVEL MANAGEMENT SUMMARY report is related by the REVIEWED relationship.

```
27 NOV 90    DICTIONARY NAMED REFERENCE REPORT: REVIEWED      PAGE 1

NAME: TRAVEL MANAGEMENT SUMMARY
ENTITY: REPORT

            IS RELATED TO:

USER : TOUR AND TRAVEL
USER : CRIMSON

END OF REPORT
```

Commands

To issue a command, press the assigned PF key or type the command name
at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Terminates this function.
Enter		Generates the report and displays additional pages of the report. When the report is completed, press Enter to return to the selection screen.

Displaying all relationships

Dictionary/204 displays the following screen when you select the following
option from the Dictionary Reports menu:

```
Display All References for an Entity
```

Use this screen to request the display of one of the following:

- Dictionary entries of a particular entity type that have any kind of
  relationship with a specified dictionary entry (for example, REPORTS that
  reference the SAFARI FILE).

- Dictionary entries of any entity type that have any kind of relationship with
  a specified dictionary entry (for example, all entries that reference the
  TRAVEL MANAGEMENT SUMMARY report).

The Display All References function also searches along relationship *paths*,
reporting on entries that are indirectly related. For example, if a REPORT is
reviewed by a USER and generated by a PROCEDURE, then the report can
show a relationship between the USER and the PROCEDURE. This occurs if
the dictionary administrator has defined a path connecting the USER,
REPORT, and PROCEDURE, even if no explicit cross-referenced or named
relationship is defined between USER and PROCEDURE. (For more
information about paths, see Chapter 1.)

Input

This screen enables you to determine both the named and cross-references
between a specified entry and a single entity type, or between a specified entry
and all entity types.

Use the tab keys to move the cursor to the appropriate input field. Do not press
Enter until you are ready to generate the report. Indicate the entity type whose
references (both named and cross-references) to a particular entry you want to
determine (regardless of entity type) in response to the following prompts:

What
Entity type:
references
Entity type:
Name:

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                          │
│  DICTREPORT                     Display All References                    │
│                                                                          │
│ Select 1 of the following by filling in the blanks:                      │
│                                                                          │
│ What                                                                     │
│ Entity type:                                                             │
│ references                                                               │
│ Entity type:                                                             │
│ Name:                                                                    │
│                                                                          │
│ What references                                                          │
│ Entity type: REPORT                                                      │
│ Name: TRAVEL MANAGEMENT SUMMARY                                          │
│                                                                          │
│                                                                          │
│                        Route to Output File: N                           │
│                                                                          │
│                                                                          │
│                                                                          │
│                                                                          │
│  ===>                                                                    │
│                                                                          │
│ 1=HELp         2=          3=QUIt       4=         5=          6=         │
│ 7=             8=          9=           10=        11=         12=        │
│                                                                          │
└─────────────────────────────────────────────────────────────────────────┘
```

If you want to determine all entries of any type that reference a particular entry, indicate the entity type and entry name in response to the following prompts:

```
What references
Entity type:
Name:
```

The previous sample screen asks which entries (regardless of entity type) reference the TRAVEL MANAGEMENT SUMMARY report. The entity name field allows for the maximum length of 70 characters.

By default, Dictionary/204 sends reports to your terminal. You can direct the output to a different destination, however, by typing Y over the default value of N at the prompt:

```
Route to Output File: **N**
```

The name of the output file has been specified previously on the Dictionary Reports menu (see "Selecting a report option" on page 156). (The output destination can be a printer or a specified file.)

Press Enter to generate the report. Issue the QUIT command (PF3) to terminate this function and return to the Dictionary Reports menu without generating a report.

Output

Dictionary/204 searches the dictionary for the specified name and entity type(s). If the entry cannot be found for the specified entity type, or if the specification is invalid, an appropriate message is displayed.

If no references are found, the following message is displayed:

```
NO REFERENCES FOUND.
```

When the report is displayed, press Enter to see additional report screens or to redisplay the Display All References screen.

An example of the Display All References report, based on the request shown on the sample screen and the definitions above, follows. The report lists the entries to which the TRAVEL MANAGEMENT SUMMARY REPORT is related.

```
27 NOV 90      DICTIONARY ALL REFERENCES REPORT: ROUTED TO      PAGE 1

NAME: TRAVEL MANAGEMENT SUMMARY
ENTITY: REPORT

IS RELATED TO:

PROCEDURE : RPT MGMT


USER : TOUR AND TRAVEL
USER : CRIMSON

FILE :CUSTOMER

END OF REPORT
```

Commands

Commands are issued by pressing the assigned PF key or by typing the command name at the prompt (===>) and pressing Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Terminates this function.
Enter		Generates the report and displays additional pages of the report. When the report is completed, press Enter to return to the selection screen.

Browsing dictionary entries by attributes

Dictionary/204 displays the following screen when you select the following option from the Dictionary Reports menu:

```
Browse Entries By Attributes
```

Use this screen to search through the dictionary for entries that include the specified keywords. For example, you can specify keywords such as MANAGEMENT and BUSINESS. Dictionary/204 retrieves all entries that contain one or more of these keywords in their definitions.

Because the DESCRIPTION and Short Desc. attributes can be entered in mixed case, Dictionary/204 performs a case-insensitive search of the specified entries. You do not need to know whether the descriptions were entered in mixed case or uppercase or which words might have been spelled with initial capital letters.

```
 DICTREPORT                          Browse Entries by Attributes


 1. Browse KEYWORD attribute
 2. Browse UNQUALIFIED NAME
 3. Browse ALL standard attributes
 4. Browse ANY attribute
      Enter number : _
 Entity type:          ALL
 Attribute:
 Route to Output File: N

 -->
 -->
 -->
 -->
 -->
 -->
 -->
 -->

 ===>

  1=HELp          2=            3=QUIt        4=           5=           6=
  7=              8=            9=            10=          11=          12=
```

Choose from the types of reports listed in Table 7-1 on page 178 (numbers indicate the screen option number).

Table 7-1.   Types of reports

Table 7-2.

Option	Report type	Means...
1.	Only on the KEYWORD attribute	If the value of the KEYWORD attribute in the dictionary entry matches one or more of the specified keywords, the entry is listed in the report.
2.	Only on the UNQUALIFIED NAME attribute	If the value of the UNQUALIFIED NAME attribute in the dictionary entry (for FIELD, RECORD, FIELD GROUP, PROCEDURE only) matches one or more of the entered values, the entry is listed in the report.
		Select 2 if you are browsing FIELD, RECORD, FIELD GROUP, or PROCEDURE entries. The UNQUALIFIED NAME of a FIELD, RECORD, FIELD GROUP, or PROCEDURE entry is the entry name without the file name prefix. For example, the UNQUALIFIED NAME of the field PERSONNL.SOCSECNUM is SOCSECNUM. If the UNQUALIFIED NAME is specified for a FIELD, FIELD GROUP, RECORD, or PROCEDURE entry, the facility browses all entries having that UNQUALIFIED NAME, regardless of the file in which they occur.

3.	On all of the following attributes:
	
	`NAME`
	`ENTITY`
	`SHORT DESCRIPTION`
	`KEYWORD`
	`ALIAS`
		If one or more of the specified keywords matches the value for any of these attributes, the entry is listed.

4.	On any single attribute	You must first specify the entity type to which the attribute applies, or select the default ALL entity types. Then specify the name of the attribute to be reported on at the Attribute: prompt. You can specify any attribute, not simply the standard attributes listed under option 3. For example, you can report on the attribute BSIZE of the entity type FILE.

Entity type

Specify an entity type to search only entries of that type (for example, only FILEs, only REPORTs). Leave the default value ALL to search all entity types for the specified keywords.

Route to output file

By default, Dictionary/204 sends reports to your terminal. You can direct the output to a different destination, however, by typing Y over the default value of N at the prompt below:

```
Route to Output File: N
```

The name of the output file has already been specified on the Dictionary Reports menu (see "Selecting a report option" on page 156). The output destination can be a printer or a specified file.

Keywords

Type the keywords you want to search for at the arrow prompts:

```
--> MANAGEMENT
--> BUSINESS
-->
-->
-->
-->
-->
-->
```

Enter only one keyword per line. If you make an error, type over the incorrect character and delete extra characters with the EOF key. You can search on a maximum of eight keywords.

Press Enter when you are ready to generate the report. Issue the QUIT command (PF3) to terminate this function and return to the Dictionary Reports menu without getting a report.

When the report is displayed, press Enter to see additional report screens or to redisplay the Browse Entries menu.

An example of a Browse Report, based on the request shown on the sample screen, follows.

For each dictionary entry retrieved by Dictionary/204, the entity type (for example, REPORT) and the entry name are displayed. You can display the entire definition for a particular dictionary entry by returning to the Dictionary Reports menu and selecting the Display an Entry option.

```
27 NOV 90 KEYWORD BROWSE REPORT PAGE 1

THE FOLLOWING ENTRIES SATISFIED YOUR SEARCH FOR
THE KEYWORDS:

MANAGEMENT
BUSINESS


YOUR SEARCH WAS LIMITED TO ENTITY: REPORT



ENTITYNAME


REPORT TRAVEL MANAGEMENT SUMMARY
REPORT MARKETING ANALYSIS

END OF REPORT
```

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF3	QUIt	Terminates the browse function.
Enter		Generates the report and displays additional pages of the report. When the report is completed, press Enter to return to the selection screen.

Selecting a user-written (customized) report

If you select user-written reports (option 7) from the Dictionary Reports menu, Dictionary/204 displays a list of the available reports that have been customized by the dictionary administrator. Select the desired report by typing an X in the parentheses to the left of the report name.

```
DICTREPORT                    User-Written Reports

                           Available report(s):

( ) MEDICAL KEY ( )
(X) SORTDES(   )
( ) DESCRIP ONLY ( )
( ) MONTHLY ( )
( ) WEEKLY ( )
( ) CURRENT COUNT ( )

( ) USERN!DUPREPT ( )

( )( )
( )( )
( )( )


                        Route to Output File: N


===>

 1=           2=           3=QUIt      4=         5=         6=
 7=           8=           9=          10=        11=        12=
```

The dictionary administrator determines which customized reports are listed on this menu. See "Dictionary Reports administration" on page 134 of this manual for a description of the dictionary administrator's role. If no reports are available, Dictionary/204 displays the following message:

```
No user-written reports are available
```

If more reports are available than fit on the first selection screen, Dictionary/204 displays the following message:

```
Additional reports appear on next screen
```

Press Enter to display the additional reports.

You can route the user-written report to an output file. Name the Report Destination on the primary screen. See "Browsing dictionary entries by attributes" on page 176 for a discussion of routing reports to an output file.

Press Enter to generate the report. Issue the QUIT command (PF3) to terminate this function and redisplay the Dictionary Reports menu without generating a report.

When the report is displayed, press Enter to see additional report screens and to redisplay the User-Written reports menu.

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF3	QUIt	Terminate this function.
ENTER		Generates the report and displays additional pages of the report. When the report is completed, press Enter to return to the selection screen.

8

Documentation Facility

Overview

The Documentation facility provides an interface for defining and describing attributes and relationships that are not controlled by the system or by one of the other facilities listed on the Dictionary/204 main menu. For example, if a COMMENTS attribute has been added to the description of a FILE, you can update that attribute with the Documentation facility. (COMMENTS is not one of the attributes controlled by the File Management facility.) For another example: If a SKILL LEVEL has been added to the ACCOUNT entity type description, you can update this attribute through the Documentation facility.

Although the Documentation facility can display system-controlled dictionary data items, it cannot update them. System attributes and relationships are displayed by this facility in read-only mode.

New relationships can be added to the description of an entity through the Documentation facility. The relationships that can be updated through Documentation are necessarily nonsystem data and are not controlled by any other facility. For example, if you have entity types such as REPORT and USER, you can add a relationship indicating that the user owns the report.

The Documentation facility is entry-oriented: that is, it allows you to add, update, delete, copy, or rename entries. Except for VIEWs, you can add, delete, copy, and rename entries *only* for nonstandard entity types — entity types created by your dictionary administrator. You can update entries of any entity type, but only attributes and relationships that are not controlled by other facilities.

The section "View management" on page 184 explains the role of the facility in defining views.

Dummy entries

Dictionary/204 allows you to create relationships between a defined entry and an entry that has not yet been defined. These nonexistent entries are called dummy entries. The dummy entry can be updated (more fully defined) through the Documentation facility.

For example, if a nonexistent REPORT called SUMMARY REPORT is cross-referenced to a PROCEDURE entry, Dictionary/204 creates a dummy entry for the SUMMARY REPORT. The dummy entry has no characteristics other than its name, entity type, its relationship to the specified PROCEDURE, and an ALIAS value of DUMMY*. This feature allows you to create a "place marker" entry that can be defined more fully later on.

See "Updating an entry" on page 197 for special restrictions that apply to updating dummy entries.

View management

A major function of the Documentation facility is the definition of VIEW entries, including the following: COMPOSITE VIEW, VIEW LINK, VIEW, and VIEW FIELD. Views are used by many of the Workshop/204 facilities, such as Screen Painter, Screen and Action Generator, and Query/Update. Views are also used by Access/204 and PC/204.

See Chapter 2 for a comprehensive discussion of views.

Scrolling

The Documentation facility allows users to scroll by the page or by the line on certain Add an Entry and Update an Entry screens. Screens that allow scrolling have a line counter in the upper right. A sample screen header for a screen that allows scrolling is:

```
DOCUMENT            <screen title>    line n of nn
```

DOCUMENT is the facility name for the Documentation facility. The screen title varies with the screen. "Line *n*" indicates the cursor line, and "*nn*" represents the total number of character lines, which can exceed the number that fit on your terminal screen.

The scrolling commands, BACkward (PF7) and FORward (PF8), allow you to scroll by screens or by a specified number of lines.

Mixed case

The Documentation facility allows users to document the Short Description and Description attributes in lowercase and uppercase values. This feature is

available only for these attributes, and is automatically updated to all entries as entered. If you want to maintain the uppercase description information, depress the terminal SHIFT as you enter all alphabetic characters.

Logging on

To log on to the Documentation facility, choose one of the following methods:

- Select the number of the Documentation facility option from the Dictionary/204 main menu.

  If your main menu does not display the Documentation option, you cannot access this facility from the Dictionary/204 menu. You can, however, access the facility by using options 2, 3, and 4, if you have user privileges for other facilities.

- Invoke the Documentation facility from the primary screens of another Dictionary/204 or Workshop/204 facility with the INVOKE command. The syntax of the command is:

  `INVoke DOCUMENT`

  Although this logon method does not require that you have user privileges for the Documentation facility, it does not let you use the facility for documenting any entity type. You can use the facility only for documenting entries of entity types controlled by facilities for which you do have user privileges. The main menu requires you to specify the entity type of the entry you are documenting. For example, if you are a Procedure Editor user, you can add descriptive documentation to PROCEDURE entries using this facility. But if you are not a File Management user, you cannot add descriptive documentation for FILE, FIELD, FIELD GROUP, or RECORD entries, because these are controlled by the File Management facility.

  To document the entries of uncontrolled entity types (such as VIEWs or REPORTs), you must have Documentation facility privileges.

  The dictionary administrator can establish further restrictions by specifying the set of entities each user is allowed to modify. These special restrictions are described in "Establishing security restrictions" on page 210.

- Call the Documentation facility subsystem from the Model 204 command prompt by typing the subsystem name:

  `> DOCUMENT`

  You can log on to the Documentation facility with this method only if the DOCUMENT subsystem has been started. Logging on by this method, you can document entries controlled by facilities for which you are an authorized user.

- The Update function of the Documentation facility can be implemented by issuing the DOCUMENT command from the command line of some

Workshop/204 or Dictionary/204 primary screens. The syntax of the command is:

```
DOCument
```

(In most cases this command has an assigned PF key.)

The DOCument command is typically implemented while using another facility such as the Procedure Editor. It documents the work being done in that facility. Issuing the command takes you to the Update function, enabling you to update the entry corresponding to the database entity being worked on. For example, if you have modified a procedure, you can issue the DOC command to document the changes in the dictionary entry for that procedure.

Using the Documentation main menu

Dictionary/204 displays the following main menu when you select the Documentation facility.

```
DOCUMENT            Documentation Facility Main Menu              Release N.n



                          1. Add an Entry
                          2. Update an Entry
                          3. Delete an Entry
                          4. Copy an Entry
                          5. Rename an Entry


                          Enter Number:



  Entity Type:
  Name:


  Copy from or rename
  Name:
  Copy References: N


  ===>



  1=HELp        2=          3=QUIt        4=          5=          6=WIDen
  7=            8=          9=            10=         11=         12=
```

In brief, the Documentation facility provides the following capabilities (numbered items correspond to the menu options):

1. Adding an entry for an entity type that is either a VIEW or an entity type created by your installation through the Dictionary Administration facility, for example, REPORTs, USERs, and so on. You cannot add entries managed by other Dictionary/204 or Workshop/204 facilities (such as FILE and PROCEDURE entries).

2. Updating an entry of any entity type. You can change only the attributes and relationships that are not managed by another Dictionary/204 facility. Using the DOCUMENT command (where that command is allowed) from another facility takes you directly to the Update function, enabling you to describe whatever entity you are using in the other facility.

   Updating also allows you to create dummy entries, which are explained in "Dummy entries" on page 184.

3. Deleting an entry for either a VIEW or an entity of a type defined at your installation through the Dictionary Administration facility. You cannot delete entries managed by another Dictionary/204 or Workshop/204 facility.

4. Copying an entry for an entity type that is either a VIEW or an entity type created by your installation. You cannot copy entries that are managed by another Dictionary/204 or Workshop/204 facility.

5. Renaming an entry for an entity type that is either a VIEW or an entity of a type created by your installation, such as REPORT, USER, and so on. You cannot rename entries manages by another Dictionary/204 or Workshop/204 facility.

Input

To select a documentation function from this menu, select a numbered choice from the list of functions and specify the name and entity type of the relevant entry:

1. Enter the number of your selection at the Enter Number: prompt.

2. Using the tab or cursor keys, advance the cursor, respond to the Entity Type: and Name: prompts. Type the name and entity type of the object whose dictionary entry you want to add, update, or delete.

3. If you want to copy or rename an entry, type the entity type and the *new* name in response to the Entity Type: and Name: prompts. (You can copy and rename only within the same entity type.)

4. If you are copying or renaming an entry, see "Copying an entry" on page 206 or "Renaming an entry" on page 208 for an example of each function.

5. To copy an entry, type the name of the entry to copy *from* at the prompt provided. All attributes are copied automatically, but you must type a Y at the Copy References: prompt if you want all the relationships copied as well. The default is N.

6. To rename an entry, type the name of the entry to be renamed at the prompt provided.

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides on-line HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Terminates the Documentation function. The system then returns you to the Dictionary/204 main menu, to the facility from which this facility was invoked, or to the Model 204 command prompt.
PF6	WIDen	Displays the Widen screen, which allows you to enter a FIELD, RECORD, FIELD GROUP, or PROCEDURE name greater than 70 characters.
Enter		Processes your report.
	INVoke	Invokes another facility.
		Type the following command at the command prompt and then press Enter:
		`INVoke facility_name`

Updating FIELD, RECORD, FIELD GROUP, and PROCEDURE entries

Updating FIELD, RECORD, FIELD GROUP and PROCEDURE entries is a special case, because these entries require a file name prefix concatenated by a period to the entry's UNQUALIFIED NAME. For example, the uniquely identifying name of the SOCSECNUM field in the PERSONNL file is PERSONNL.SOCSECNUM. When requesting a report on a FIELD, RECORD, FIELD GROUP, or PROCEDURE entry, the name (including the file name prefix) of a FIELD, RECORD, FIELD GROUP, or PROCEDURE entry might exceed the 70 character spaces provided at the Name: prompt. In this case, you must press PF6 (or issue the WIDEN command) from the input screen.

The Documentation facility then displays the following Widen Screen, which allows you to enter a file name not exceeding 8 characters and an entry name not exceeding 70 characters. Any portion of the name that you have entered on the input screen prior to issuing the WIDEN command appears on the Widen Screen. If there is a period in the name prior to the tenth character, the facility interprets the name to the left of the period as a file name.

When you have entered the entry's name on the interim screen, you can press PF3 (QUIT) to cancel the input or press PF12 (END) to enter the input on the Documentation facility main menu. If you press PF12, the first 70 characters of

the file name plus the entry name appear on the main menu. Press Enter to process your selection.

FIELD, RECORD, FIELD GROUP, and PROCEDURE entries can be updated by using the Documentation facility to add or delete nonsystem attributes and references, but entries of these types cannot be added, deleted, copied, or renamed by using the Documentation facility.

```
DOCUMENT                    Widen Screen

   File Name: PERSONNL


   Entry Name:


   SOCSECNUM_____







===>


 1=HELp      2=          3=QUIt       4=          5=          6=
 7=          8=          9=          10=         11=         12=END
```

Adding an entry

To add an entry to the dictionary:

1. Select the Add an Entry option from the main menu of the Documentation facility

2. Specify the name and entity type of the entry to be added on the main menu

When you press Enter, the system displays the following Add Entry Attributes screen. The name, entity type, and date created are automatically provided from the data processed by the main menu.

You can add entries only for VIEWs and (nonstandard) entity types that are not managed by other Dictionary/204 facilities.

```
 DOCUMENT                         Add Entry Attributes


 Name: TRAVEL MANAGEMENT SUMMARY
 Entity type: REPORT
 Create Date: 31 JUL 85

 Short desc.: A report of monthly revenues provided by accounting
            : and supplied to all branch offices


            :
            :








 ===>

 1=HELp      2=            3=QUIt         4=         5=              6=
```

The entry name, entity type, and create date are provided, as in the previous example.

The sample screen presupposes that you supplied the name and entity type of the entry on the preceding screen. You can also provide the short description in response to the Short desc. prompt. The text entered in response to this prompt becomes the value of the SHORT DESCRIPTION attribute for the entry. This description defines the purpose and use of the entry. It is used as a header in entry reports. The short description has a maximum length of four character lines.

Commands

To issue a command, press an assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Aborts the processing of the Add Entry Attributes screen and returns you to the Documentation facility menu.
PF8	FORward	Scrolls forward to the next page of attributes (sample screen follows). Use this command before adding attributes for an entry. Your input is preserved but not stored.
PF11	REFs	Displays the Add Entry References screen. Use this command to add references for an entry. Your input is preserved but not stored.
PF12	END	Stores the data entered on the Add Entry Attributes screen and returns you to the main menu of the Documentation Facility.
ENTER		Causes the current screen to be redisplayed but has no other effect.

Defining entry attributes

When adding an entry, all the attributes and references that were established for the entity type by the Dictionary/204 administrator appear to the left of the colons, as shown on the following screen.

There are one or more Add Entry Attributes screens, depending upon how many attributes have been assigned by the Dictionary/204 administrator to the entity type in question.

```
DOCUMENT                     Add Entry Attributes


    Name: TRAVEL MANAGEMENT SUMMARY
    Entity type: REPORT
    Create Date: 31 JUL 85

  _    DESCRIPTION   :
  _    KEYWORD       :
  _    ALIAS         :
  _    REPORT TYPE   :
  _    REPORT TITLE    :
  _    PRIORITY LEVEL :
  _    FREQUENCY  :
  _     AVE. LENGTH  :
  _   ROUTINE   :
  _   PAPER STOCK  :
  _    SECURITY LEVEL:
 _NO. OF COPIES:
===>

1=HELp      2=           3=QUIt        4=           5=           6=
7=BACkward  8=FORward    9=            10=          11=REFs      12=END
```

Type in the values of the attributes to the right of the colons. Use the tab keys to advance the cursor to the next or previous attribute.

The attribute values are changed to uppercase when they are stored in the Dictionary/204. The exceptions are DESCRIPTION and SHORT DESCRIPTION (Short desc.), which are stored in the Dictionary/204 as entered.

If you want to revise the Short descr. attribute on the previous screen, press PF7 (BACkward), and then type over the values to be changed.

If you want to specify additional attributes, press PF8 to scroll forward to an additional Entry Attributes screen. The additional attributes appear on the same type of screen.

Press PF11 (REFs) to view the references that have been defined for the entry by the Dictionary/204 administrator. When you move to the Add Entry References screen, the values you have entered on the Add Entry Attributes screen(s) are preserved. To store the attributes (without defining any references), press PF12. This returns you to the Documentation facility main menu.

Inserting multiple values

To define multiple values for an attribute, type an I (for Insert) in the prefix area to the left of the attribute:

I ALIAS : MANAGERS

Press Enter. The system provides another ALIAS line, allowing you to type a new value to the right of the colon.

You can use the Insert command in multiple prefix areas at once. Pressing Enter then yields one new attribute line for each Insert command.

If the additional line does not fit on the same screen, the system creates another Add Entry Attributes screen to contain the inserted lines.

Deleting values

To delete a value currently assigned to an attribute, choose one of the following methods:

- Blank out the value using the space bar.

- Delete the value by positioning the cursor at the beginning of the input field and pressing the Erase EOF key.

- Typing a D (for Delete) in the prefix area to the left of the attribute:

  D AVG. LENGTH : 35

  Press Enter.

  The system deletes the entire line. If you delete the only line that displays the attribute, you cannot enter a value for it without returning to the Documentation facility main menu and selecting the Update an Entry function.

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Aborts the processing of the entry definition screen and returns you to the Documentation facility menu entry definition.

Key	Command	Meaning
PF7	BACkward	Displays the previous screen in the series. Your input is retained but not stored.
		To scroll back *n* lines instead of an entire screen, type the number *n* on the command line and press PF7. Or issue the BACkward command followed by the number *n*:
		BAC *n*
PF8	FORward	Scrolls to the next screen of attributes or references. Your input is preserved but not stored.
		To scroll *n* lines, instead of an entire screen, type the number *n* on the command line and press PF8. Or issue the FORward command followed by the number *n*:
		FOR *n*
PF11	REFs	Displays the Add Entry References screen. Use this command to add references for an entry. Your input on the Add Entry Attributes screen is preserved but not stored.
PF12	END	Stores the data entered on the Add Entry Attributes screen and returns you to the Documentation facility main menu.
Enter		Causes the current screen to be redisplayed and the data on it to be verified. It also processes the Insert and Delete commands.

Defining entry references

There are one or more Add Entry References screens, depending upon how many relationships have been assigned by the Dictionary/204 administrator to the entity type. Even if no references have been defined for the entity type, there is one screen of prompts in case you want to add references.

In the following sample screen, the entity types (USER and FILE) and the named relationship, (REVIEWED BY) are supplied automatically. Cross-references to the entry appear as blanks, as in the case of the FILE entry.

Follow these instructions to complete the Add Entry References screen:

1. To specify a reference for a defined relationship, type the name of the related entry at the Name: prompt. In the sample screen, the related entries are MARKETING MGR and CUSTOMER.

2. Unlike the Add Entry Attributes screen, this screen permits you to add new named or cross-referenced relationships for an entry — references that have not been defined by the Dictionary/204 administrator.

3. Insert and Delete commands (described in the proceeding section) can be used in the prefix areas in column 1 of this screen. Insert provides a new

set of prompts without values. Delete erases the set of prompts and values.

Type the name of the new named relationship at the Reference name: prompt; leave a cross-referenced relationship blank.

Note: References to currently undefined entries create "dummy" entries in the Dictionary/204.

Press PF8 (FORward) to advance to the next screen. The values you have entered on the current screen are preserved. You can return to the previous screen by pressing PF7 (BACkward). Pressing PF8 also provides additional blank lines for entering references.

When the references have been specified, you can store the entry definition (including attributes and references) by pressing PF12 (END). To terminate the definition function without saving any entry definition, press PF3 (QUIT).

To add a reference for a FIELD, RECORD, FIELD GROUP, or PROCEDURE entry whose name is longer that 70 characters, type FIELD, RECORD, FIELD GROUP, or PROCEDURE for the entity type, place the cursor on the Name: field, and press PF6 (WIDEN). See "Updating FIELD, RECORD, FIELD GROUP, and PROCEDURE entries" on page 188 for an explanation of how to use the Widen Screen. Adding references to entries that do not exist creates dummy entries (described in "Dummy entries" on page 184).

```
DOCUMENT Add Entry References Line 1 of 8

Name: TRAVEL MANAGEMENT SUMMARY
Entity type: REPORT
Create Date: 31 JUL 85

_ Entity type: USER                          Reference name: REVIEWED BY
Name: MARKETING MGR.

_ Entity type: FILE                          Reference name:
Name: CUSTOMER

_ Entity type:                               Reference name:
Name:

_ Entity type:                               Reference name:
Name:




===>


1=HELp        2=            3=QUIt        4=          5=          6=WIDen
```

Commands

To issue a command, press the assigned PF key or type the command name
at the prompt (===>) and press Enter.

Key	Command	Meaning
PF1	HELp	Provides online HELP text for this screen. You can read the HELP text and exit from the last screen of text by pressing Enter.
PF3	QUIt	Aborts the processing of the entry definition screen and returns you to the Documentation facility menu entry definition.
PF6	WIDen	Displays the WIDEN screen, which allows you to enter the name of a FIELD, RECORD, FIELD GROUP, or PROCEDURE that is longer than 70 characters.

Key	Command	Meaning
PF7	BACkward	Displays the previous screen in the series. Your input is retained but not stored.
		To scroll back *n* lines instead of an entire screen, type the number *n* on the command line and press PF7. Or, issue the BACkward command followed by the number *n*:
		`BAC n`
PF8	FORward	Advances the definition process to the next screen of attributes or references. Your input is preserved but not stored.
		To scroll *n* lines, instead of an entire screen, type the number *n* on the command line and press PF8. Or, issue the FORward command followed by the number *n*:
		`FOR n`
PF10	ATTrib	Displays the Add Entry Attributes screen. Use this command to add attributes for an entry. Your input on the Add Entry References screen is preserved but not stored.
PF12	END	Stores the data entered on the Add Entry References screen and returns you to the main menu of the Documentation Facility.
Enter		Causes the current screen to be redisplayed and the data on it to be verified. It also processes the Insert and Delete commands.

Updating an entry

Using Documentation facility to update, delete, copy, and rename an entry.

To update an entry to the dictionary, choose one of the following methods:

- Select the Update an Entry option from the main menu of the Documentation facility, and specify the name and entity type of the entry to be updated.

- Issue the DOCUMENT command from another facility (such as the Procedure Editor) in which the command is allowed.

Dictionary/204 displays the following Update Entry Attributes screen when you select this function from the Documentation facility menu. The name, entity type, dates, and short description appear as a header.

You can update those attributes and relationships that are not managed by the system or by other Dictionary/204 facilities. You can also display the system- and facility-managed attributes and relationships in read-only mode.

Note: You cannot update dummy entries for FILE, FIELD, FIELD GROUP, or RECORD. You can update dummy entries only for VIEW, VIEW FIELD, COMPOSITE VIEW, VIEW LINK, and nonstandard (user-defined) entity types.

If you update a FILE, FIELD, FIELD GROUP, or RECORD entry that has a staged version, the updates are made to the staged version only. If the staged commands are "deleted" (canceled) through File Management, the information added through the Documentation facility is lost.

Input

The following screen enables you to revise the short description (Short desc.) attribute for the entry being updated. Type over the current description and delete unwanted text that remains with the Erase EOF key. The maximum length of a short description is four character lines.

You can process this screen in one of the following ways:

• Request HELP text by pressing PF1.

• Terminate the function without saving updates by pressing PF3.

• Update (nonsystem controlled) attributes for this entry by pressing PF8. This preserves the updated short description but does not store the update.

• Update (nonsystem controlled) references for this entry by pressing PF11. This preserves the updated short description but does not save the update.

• View system-controlled attributes by pressing PF4, or view system-controlled references by pressing PF5.

• Save the updated short description and return to the Documentation facility main menu by pressing PF12.

```
  DOCUMENT                    Update Entry Attributes



  Name: TRAVEL MANAGEMENT SURVEY
  Entity type: REPORT
  Create Date: 31 JUL 85    Last Updated: 10 AUG 85        Updated by: JLSMITH



  Short desc.: A report of monthly revenues provided by accounting
             : and supplied to all branch offices
             :
             :
             :



  ===>

  1=HELp      2=           3=QUIt        4=SATtrib    5=SREfs         6=
```

Displaying system data

Although you cannot update facility-managed dictionary data by using the Documentation facility, you can display the values of these attributes and relationships with the SATtrib (PF4) and SREfs (PF5) commands.

You can display system attributes and relationships for standard entity types controlled by Dictionary/204 and Workshop/204 facilities. VIEWs and entity types created by your installation do not have system attributes and references:

- Press PF4 to see the facility-managed attributes of the entry.

- Press PF5 to see the facility-managed relationships of the entry.

Use the PF keys available from those screens to terminate the display of system data and to return to another Update an Entry screen. To view a FIELD, RECORD, FIELD GROUP, or PROCEDURE name that is longer than 70 characters, position the cursor in the Name: field of the View System References screen and press PF6 (or issue the WIDEN command). The Widen Screen is displayed with the full entry name. See "Updating FIELD, RECORD, FIELD GROUP, and PROCEDURE entries" on page 188 for more information about the Widen Screen.

Samples of the system data display screens follow:

```
DOCUMENT                View System Attributes                  Line 1 of 12

 Name: PERSONNL.SOCSECNUM
 Entity type: FIELD
 Create Date: 31 JUL 85      Last Updated: 08 AUG 85      Updated by: ADJANET



 AVERAGE LENGTH :  10
 AVERAGE OCCURS :  1
 CODED/FRV FEW VAL :  N
 CODED/FRV MANY VAL :  N
 CODED :  N
 DEFERRABLE Y/N :  Y
 FIELD.PERCENT RATE :  PERSONNL.SALARY = 100
 KEY Y/N :  Y
 LEVEL :  0
 STRING Y/N :  Y
 UPDATE-IN-PLACE Y/N :  Y
 VISIBLE :  Y



 ===>

 1=HELp        2=            3=QUIt         4=SATtrib    5=SREf          6=
```

```
 DOCUMENT                   View System References                    Line 1 of 3


 Name: PERSONNL
 Entity type: FILE
 Create Date: 31 JUL 85        Last Updated: 08 AUG 85        Updated by: ADANDY



    Entity type: RECORD                     Reference name:
 Name: PERSONNL.SALARY



    Entity type: FIELD                      Reference name:
 Name: PERSONNL.SOCSECNUM



    Entity type: STAGED RECORD        Reference name: HAS STAGED
 Name: PERSONNL.PERFORMANCE EVAL

 ===>
```

Commands

Most of the commands available from the Update Entry Attributes screen have been explained fully in the section "Deleting values" on page 193. Two commands not documented in that section are:

Key	Command	Displays system-controlled...
PF4	SATtrib	Attributes (if any) for this entry. The attributes are displayed in read-only mode.
PF5	SREfs	References (if any) for this entry. The references are displayed in read-only mode.

Updating entry attributes

There are one or more Update Entry Attributes screens, depending upon how many nonsystem attributes have been assigned by the administrator to the entity type in question.

When updating an entry, all the nonsystem-controlled attributes that were defined for that entity type by the dictionary administrator appear in the first

column, as shown on the following sample screen. The DESCRIPTION attribute has no value, but it does appear on the Update Entry Attributes screen because this attribute is provided by the system.

```
DOCUMENT                  Update Entry Attributes              Line 1 of 12

Name: TRAVEL MANAGEMENT SUMMARY
Entity type: REPORT
Create Date: 31 JUL 85        Last Updated: 10 AUG 85        Updated by: JLSMITH



_ DESCRIPTION :
_ KEYWORD :  MANAGEMENT
_ ALIAS :  BUSINESS
_ REPORT TYPE :  MANAGEMENT
_ REPORT TITLE :  TRAVEL MANAGEMENT SUMMARY
_ PRIORITY LEVEL :  1
_ FREQUENCY :  MONTHLY
_ AVE. LENGTH :  5 PAGES
_ ROUTINE :  PRESIDENT, MANAGERS, DEPT. HEADS
_ PAPER STOCK :  STANDARD
_ SECURITY LEVEL :  1
_ NO. OF COPIES :  20

===>


1=HELp       2=           3=QUIt        4=SATtrib     5=SREf        6=
```

Type the new values over the current values of the attributes to be updated. Use the tab keys to advance the cursor to the next or previous attribute.

Use the Erase EOF key to delete unwanted characters. If you want to reconsider the Short desc. attribute on the previous screen, press PF7 (BACkward) to scroll back to the Update Entry Attributes screen, and then type over the description.

The Insert and Delete commands can be used as explained in "Inserting multiple values" on page 193 and "Deleting values" on page 193.

If you want to specify additional attributes, press PF8 to scroll forward to the next Update Entry Attributes screen. These attributes appear on the same type of screen.

Press PF7 to scroll back to the previous screen. Press PF12 to save the updated entry without updating entry references.

Commands

The commands available from the Update Entry Attributes screen have been explained in "Deleting values" on page 193 and "Displaying system data" on page 199.

Updating entry references

Press PF11 (REFs) to update the references that have been defined for the entry by the dictionary administrator.

There are one or more Update Entry References screens, depending upon how many relationships have been assigned by the dictionary administrator to the entity type. Even if no references have been defined for the entity type, there is one screen of prompts in case you want to add references.

To update the Entry References:

- Type over the reference data that you want to update. Leave cross-reference relationships blank.

- References to currently undefined entities create "dummy" entries in the dictionary (see "Dummy entries" on page 184 and "Updating an entry" on page 197 for information about updating dummy entries).

- Press PF8 (FORward) to scroll to the next screen. Your input is preserved but not stored until you press PF12 (END).

- Use the Erase EOF key to delete unwanted characters.

- Insert and Delete commands can be used as explained in "Inserting multiple values" on page 193 and "Deleting values" on page 193.

- View system-controlled attributes by pressing PF4, or view system-controlled references by pressing PF5.

If you need to update additional references, they appear on the next screen. The Update Entry References screen follows.

Unlike the Update Entry Attributes screen, this screen lets you add new named or cross-referenced relationships for the entry.

To add a reference, specify the name and entity type of the related entity. Type in a name at the Reference name: prompt for a named relationship. Leave the prompt blank (do not type any character) for a cross-reference. If you need additional blank prompts for adding more references, either use the Insert command or scroll forward to the end of the display. This system displays additional prompts.

If you want to reconsider some of the values on the previous screen, press PF7 to scroll back to the previous screen, and type over the values to be changed.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│  DOCUMENT                  Update Entry References              Line 1 of 8│
│                                                                           │
│  Name: TRAVEL MANAGEMENT SUMMARY                                          │
│  Entity type: REPORT                                                      │
│  Create Date: 31 JUL 85       Last Updated: 10 AUG 85      Updated by: JLSMITH│
│                                                                           │
│  _  Entity type: USER                      Reference name: REVIEWED        │
│  Name: MARKETING MGR.                                                      │
│                                                                           │
│  _  Entity type: FILE                      Reference name:                 │
│  Name: CUSTOMER                                                            │
│                                                                           │
│  _  Entity type:                           Reference name:                 │
│  Name:                                                                     │
│                                                                           │
│  _  Entity type:                           Reference name:                 │
│  Name:                                                                     │
│                                                                           │
│                                                                           │
│  ===>                                                                     │
│                                                                           │
│                                                                           │
│  1=HELp         2=           3=QUIt       4=SATtrib    5=SREf      6=       │
│  7=BACkward     8=FORward    9=           10=ATTrib    11=REFs     12=END   │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

To add a reference for a FIELD, RECORD, FIELD GROUP, or PROCEDURE entry whose name is longer than 70 characters, type FIELD, RECORD, FIELD GROUP, or PROCEDURE for the entity type, place the cursor on the Name: field, and press PF6 (WIDEN). The section "Updating FIELD, RECORD, FIELD GROUP, and PROCEDURE entries" on page 188 explains how to use the Widen Screen.

When you are satisfied that the entry's references have been correctly updated, press PF12 (END). This saves the new entry definition in the dictionary.

The commands available from the Update Entry References function are the same as those explained in "Deleting values" on page 193 and "Displaying system data" on page 199.

Deleting an entry

To delete an entry, select the Delete an Entry option from the main menu, indicating the name and type of the entity to be deleted. You can delete entries only for VIEWs and (nonstandard) entity types that are not managed by other Dictionary/204 facilities. An example of requesting the delete function follows.

```
 DOCUMENT                        Main Menu                       Release N.n


                         1. Add an Entry
                         2. Update an Entry
                         3. Delete an Entry
                         4. Copy an Entry
                         5. Rename an Entry



                         Enter Number: 3

 Entity Type:  REPORT
 Name:  TRAVEL MANAGEMENT SUMMARY



 Copy from or rename
 Name:
 Copy References: N

 ===>

 1=HELp          2=              3=QUIt          4=         5=          6=WIDen
```

The Delete Entry screen appears with the system data as shown on the following screen. No other attributes or references for the entry are shown. The entry is the one that you specified on the main menu.

Once the deletion has been completed the entry cannot be recovered.

```
DOCUMENT                        Delete Entry

To delete the following entry and all of its references, type DELete
on command line and press enter, or press PF6.
To cancel request, type QUIt on command line and press enter,
or press PF3.

Name: TRAVEL MANAGEMENT SUMMARY
Entity type : REPORT
Create Date :  31 JUL 85      Last Updated: 10 AUG 85      Updated by: JLSMITH
Short desc.  : A report of monthly revenues provided by accounting
: and supplied to all branch offices
:
:




===>


1=HELp         2=            3=QUIt       4=           5=              6=DELete
7=             8=            9=           10=          11=             12=
```

Commands

To issue a command, press the assigned PF key or type the command name
at the prompt (===>) and press Enter.

Key	Command	Meaning
PF3	QUIt	Terminates the processing of the Delete an Entry screen and returns you to the Documentation facility main menu.
PF6	DELete	Deletes the entry displayed on the screen. The deletion is final; no recovery of the data is possible.

Copying an entry

You can copy an entry simply by selecting the Copy an Entry option on the main
menu and by responding to the appropriate prompts. You can copy entries only
for VIEWs and (nonstandard) entity types that are not managed by other
Dictionary/204 facilities.

Copy an entry when you want to have two entities of the same type and generally of the same description. This function allows you to copy the set of attributes that belong to the existing entry to a newly named entry, eliminating the need to fill in the attribute values twice.

All attributes are copied from the source entry to the new entry; references (relationships) are copied optionally when you type a Y at the Copy References: prompt on the main menu screen.

The new entry must have a different name from its source, and it must be of the same entity type.

```
DOCUMENT                    Main Menu                    Release N.n


                      1. Add an Entry
                      2. Update an Entry
                      3. Delete an Entry
                      4. Copy an Entry
                      5. Rename an Entry



                      Enter Number: 4

Entity Type: REPORT
Name: MONTHLY


Copy from or rename
Name: SAFARI
Copy References: N


===>

1=HELp        2=         3=QUIt       4=        5=        6=WIDen
```

In response to the Entity Type: and Name: prompts, type the name of the new entry. Then type the name of the entry to be *copied from* at the Name: prompt following:

```
Copy from or rename:
```

This example shows a new MONTHLY report entity created as a copy of an existing SAFARI report. Attribute values can be modified later by using the Update an Entry option.

In this example, relationships are copied along with the attributes. This is not always desirable. For example, the SAFARI reports might be READ BY all ACCOUNTs, whereas the MONTHLY reports should be READ BY designated USERs only. Such relationships can be updated later using the Update an Entry function, or you might elect not to copy them at all.

Press the Enter key to perform the requested copying of the entry. If the copy was made successfully, the following message appears in the message line below the command prompt on the main menu screen:

```
DOC040 Entry has been copied.
```

Commands

To issue a command, press the assigned PF key or type the command name at the prompt (===>) and press Enter.

The Copy an Entry option uses the main menu screen; the commands available from the main menu are discussed in "Updating FIELD, RECORD, FIELD GROUP, and PROCEDURE entries" on page 188.

Renaming an entry

You can rename an entry simply by selecting the Rename an Entry option on the main menu and by responding to the appropriate prompts. You can rename entries only for VIEWs and (nonstandard) entity types that are not managed by other Dictionary/204 facilities.

Rename an entry when you want to change only the name of an entry, leaving its attributes and relationships the same. You might want to rename an entry to indicate a change in its function within an application, or to use its present name for another entity of the same type. All attributes and references remain the same.

```
DOCUMENT                        Main Menu                      Release N.n


                        1. Add an Entry
                        2. Update an Entry
                        3. Delete an Entry
                        4. Copy an Entry
                        5. Rename an Entry



                        Enter Number: 5

 Entity Type: REPORT
 Name: EXPEDITIONS


 Copy from or rename
 Name: SAFARI
 Copy References: N


 ===>

 1=HELp        2=           3=QUIt        4=          5=          6=WIDen
```

In response to the Entity Type: and Name: prompts, type the new name of the entry. Then fill in the name of the entry to be renamed at the prompt:

```
Copy from or rename
Name: SAFARI
Copy References: N
```

When renaming, relationships are copied along with the attributes. Thus, ignore the Copy References prompt. The previous example shows that the SAFARI report has been renamed the EXPEDITIONS report (perhaps to reflect the fact that it now covers safaris, archeological digs, and fishing trips).

Press the Enter key to perform the requested rename operation. If the rename was successful, the following message appears in the message line below the command prompt on the main menu:

```
DOC 050 Entry has been renamed.
```

Commands

The Rename an Entry option uses the main menu screen; the commands available from the main menu are discussed in "Using the Documentation main menu" on page 186.

Establishing security restrictions

The section "Logging on" on page 185 describes restrictions that apply to any user who invokes the Documentation facility. To modify an entity controlled by another facility, the user must have the corresponding privileges.

The dictionary administrator can add a second level of security by specifying the entities an individual user is allowed to modify. The administrator can enter each entity allowed as a value of the DOC_ENT_ALLOWED attribute, a multiply occurring field in the user's ACCOUNT entry.

If there are no occurrences of DOC_ENT_ALLOWED, then the user can modify any entities (subject to the usual restrictions). If there are occurrences, then the user can modify only the entities specified.

To update a user's DOC_ENT_ALLOWED attribute, you must have Dictionary administration privileges. On the Documentation facility main menu, select the Update function and enter entity type ACCOUNT and the user's Model 204 ID, as follows.

```
DOCUMENT              Documentation Facility Main Menu              Release N.n


                         1. Add an Entry
                         2. Update an Entry
                         3. Delete an Entry
                         4. Copy an Entry
                         5. Rename an Entry

                          Enter Number: 2



Entity Type: ACCOUNT
Name: DEVJRW


Copy from or rename
Name:
Copy References: N



===>

1=HELp          2=              3=QUIt          4=          5=          6=WIDen
```

On the next screen, you can enter a short description, which is used as a
header for dictionary reports.

```
  DOCUMENT                  Update Entry Attributes                Line 1 of 4

  Name: DEVJRW
  Entity type: ACCOUNT
  Create Date: 03 FEB 87      Last Updated: 16 DEC 88      Updated by: ADMLMT




  Short desc.: JR WINSTON DEV SUMMARY
  :
  :

















  ===>
```

Advance to the next screen by pressing PF8 (FORward), and enter the entity types the user is allowed to modify.

To add a line for a new entity, enter an I (Insert) in the prefix area to the left of the DOC_ENT_ALLOWED attribute. You can specify an unlimited number of entities; the screen scrolls forward if you need to insert several lines.

In this example, user DEVJRW has been authorized to modify the entities FILE, GROUP, and PROCEDURE. This ACCOUNT entry now overrides any other Documentation privileges DEVJRW might have. DEVJRW is allowed to modify only the three entities listed.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│  DOCUMENT                  Update Entry Attributes              Line 1 of 4    │
│                                                                               │
│  Name: DEVJRW                                                                 │
│  Entity type: ACCOUNT                                                         │
│  Create Date: 03 FEB 87      Last Updated: 16 DEC 88      Updated by: ADMLMT   │
│                                                                               │
│                                                                               │
│                                                                               │
│  _ KEYWORD :                                                                  │
│  _ ALIAS :                                                                    │
│  _ DESCRIPTION  :                                                             │
│  _ DOC_ENT_ALLOWED : FILE                                                     │
│  _ DOC_ENT_ALLOWED : GROUP                                                    │
│  _ DOC_ENT_ALLOWED : PROCEDURE                                                │
│  _                                                                            │
│  _                                                                            │
│  _                                                                            │
│  _                                                                            │
│  _                                                                            │
│                                                                               │
│                                                                               │
│  ===>                                                                         │
│                                                                               │
│  1=HELp        2=          3=QUIt       4=SATtrib    5=SREf       6=           │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

9

FILEMGMT overview

The Dictionary/204 File Management Subsystem facility, FILEMGMT, is a full-screen interface to Model 204 file management.

Prerequisites

In order to use FILEMGMT:

- You must have Dictionary/204 and its subsystems running.

- You should have an understanding of Model 204 file management. The Rocket Model 204 documentation wiki provides detailed information about file management:

  http://m204wiki.rocketsoftware.com/index.php/File_management_overview

- You need file management privileges and the appropriate Model 204 privileges:

  - Creating a new Model 204 file requires login account privileges that include superuser privileges.

  - Changing an existing file requires a Model 204 password indicating that you have the necessary update privileges for the file.

Overview

FILEMGMT enables you to create Model 204 files quickly, reliably, and securely. You define a file and its contents on the series of screens that FILEMGMT provides. FILEMGMT uses your definitions to:

- Construct the Model 204 commands that create the physical file

- Store the appropriate entries in your installation's dictionary

By combining the two operations, FILEMGMT eliminates the need to enter this information twice. FILEMGMT validates the information for accuracy and consistency, and it creates and stores all necessary dictionary entries and references.

FILEMGMT does more than create new files. You can use the facility to:

- View existing file data

- Reset file parameters

- Add fields, records, and field groups to existing files

- Calculate and change the size of a file

- Copy files, fields, and records

FILEMGMT maintenance functions

FILEMGMT consists of the following maintenance functions:

- File maintenance

- Field maintenance

- Record maintenance

- Field group maintenance

These maintenance functions let you define FILE, FIELD, RECORD, and FIELD GROUP entries, as well as modify and delete these entries. The facility also creates the actual files, fields, records, and field groups that correspond to the dictionary entries that you have defined or modified.

Each maintenance function has its own full-screen interface that you can select from the FILEMGMT primary screen. Using the facility screens you can specify the characteristics and relationships of your files, fields, records, and field groups.

The FILEMGMT facility also sizes files automatically based on information you provide about file characteristics. The Rocket Model 204 documentation wiki explains in more detail how file sizing works:

http://m204wiki.rocketsoftware.com/index.php/Managing_file_and_table_size_with_FILEMGMT

FILEMGMT and command execution

After you have defined the characteristics and relationships of an entry, FILEMGMT stages your entry for the specified commands. The commands can be executed in one of four active or inactive modes, depending upon the execution options that are supported at your installation.

When the commands are executed, FILEMGMT creates the file, field, record, or field group as you have defined it. The facility also creates the corresponding (nonstaged) dictionary entry.

Wiki information about using FILEMGMT

For detailed information about using FILEMGMT, refer to the Rocket Model 204 documentation wiki.

• Logon information:

http://m204wiki.rocketsoftware.com/index.php/Logging_on_to_FILEMGMT

• Overview information:

http://m204wiki.rocketsoftware.com/index.php/FILEMGMT_overview

• Screens information:

http://m204wiki.rocketsoftware.com/index.php/FILEMGMT_screens_overview

• Other details on using FILEMGMT:

http://m204wiki.rocketsoftware.com/index.php/Category:FILEMGMT_applicati on_subsystem

10

PC Volume Management

Overview

PC Volume Management is used by PC/204 administrators to control access to the Model 204 files in which PC files are stored on the mainframe. The PC files might be initially created on the PC and uploaded to the mainframe, or, if a procedure file, actually created on the mainframe. The administrator determines which Model 204 files are available for storing the PC files.

The PC Volume Management facility performs these specific tasks:

- Defines "target" Model 204 files as mainframe PC-type volumes; the volumes simulate the PC-DOS volumes on a PC

- Attaches and detaches the volumes to mainframe drive designators

- Removes mainframe PC volumes from the list of available volumes

This chapter describes how to use PC Volume Management to maintain mainframe PC volumes.

Mainframe PC volumes

The following list compares mainframe PC volumes to the PC-DOS volumes on a PC:

Item	Comparison
Label	Mainframe PC volumes have "labels, or names, that are the same as the names of the Model 204 files from which the volumes were defined. PC-DOS volumes can have labels as well.
Directory	Mainframe PC volumes have tree-structured directories, as do PC-DOS volumes.
Contents	Mainframe PC volumes contain PC files, as do PC-DOS volumes.
Format and extension	On the mainframe, PC files have a format as well as an extension. Files residing on the PC have an extension (equivalent to the type, if a PC/204 file), but do not require a format. The format specifies how the PC file is stored on the mainframe. The extension usually indicates how the file is used on the PC (as a spreadsheet definition, for example, or a communications script).
Drive	The administrator attaches mainframe PC volumes to drives by using PC Volume Management. The PC user attaches PC volumes to drives by inserting diskettes into the drive. The designated drives on the mainframe are virtual devices, whereas the PC drives are physical devices. Neither a mainframe nor PC drive can have more than one volume attached at a time.

The primary difference between a mainframe PC volume and a PC-DOS volume is that the mainframe PC volume is simultaneously a Model 204 file—the file that you, as administrator, defined as the mainframe PC volume.

Using the PC Volume Management facility

To maintain mainframe PC volumes, select PC Volume Management from the Dictionary/204 main menu; or type PCVOLMGMT at the Model 204 prompt. (The PCVOLMGMT subsystem must be started before it can be invoked.)

Dictionary/204 displays a PC Volume Management screen similar to the following:

```
PCVOLMGMT                 PC Volume Manager                      Line 1 of 3

To define a PC Volume, enter Model 204 filename:          and press Enter.

    Command           Volume              Drive Designator
    -----------       --------            --------------------
                      PCVOL1              UNASSIGNED
                      PCVOL2              M2
                      PCVOL3              M300




===>
1=HELp       2=            3=QUIt    4=           5=REMove     6=EXEcute
7=BACkward   8=FORward     9=        10=ATTach    11=DETach    12=END
```

The operations you perform from this screen determine which mainframe PC-type volumes are available to PC/204 users. The operations, in order of precedence, are:

1. Define volume

2. Attach volume to drive

3. Detach volume from drive

4. Remove volume from volume list

Defining mainframe PC volumes

To define a Model 204 file as a PC volume:

1. Enter at the top of the screen the name of a previously initialized Model 204 file. The file cannot be a sorted or hashed file.

2. Press Enter.

3. Enter a password if you are prompted for one. File manager privileges are required to define a PC volume. A password is requested if the Model 204

file is semipublic or private.

The operation opens the Model 204 file, defines a set of fields for the PC files that the volume will contain, and closes the Model 204 file. An entry for the volume is logged in the dictionary and the volume list is immediately updated to include the name of the new volume.

Other PC volume operations

The following function keys perform PC Volume Management operations other than defining a volume:

Key	Command	Meaning
PF1	HELp	Displays help information.
PF3	QUIt	Terminates the PC Volume Management session and returns you to the Dictionary/204 main menu.
PF5	REMove	Removes a mainframe PC volume from the volume list. The Model 204 file from which the volume was defined keeps its field definitions, but the volume can no longer be accessed from the PC. A removed volume can be redefined and restored to the volume list. To remove a mainframe PC volume from the volume list, first detach the volume from the drive, if the drive designator is still assigned.
PF6	EXEcute	Executes the commands entered in the Command column.
PF7	BACkward	Scrolls the volume list backwards. The command line at the bottom of the screen remains stationary.
PF8	FORward	Scrolls the volume list forward. The command line at the bottom of the screen remains stationary.
PF10	ATTach	Attaches a mainframe PC volume to the designated drive. Valid drive names have the format Mn, where n is a positive number from 0 to 99999 (for example, M1, M2, M10). A drive can be assigned to no more than one volume at a time. A drive entry and a volume-drive cross-reference are automatically logged in the dictionary.
PF11	DETach	Detaches a mainframe PC volume from a drive. The drive designator displays the value UNASSIGNED and the volume is no longer accessible from the PC.
PF12	END	Performs any pending operation and terminates the PC Volume Management session. Returns you to the Dictionary/204 main menu.

You can attach, detach, and remove volumes from the list area or the command line at the bottom of the screen.

Issuing a command from the list area

To issue a command from the list area:

1. If you are attaching a volume, type in a drive designator over the UNAS-SIGNED value. UNASSIGNED must be completely overwritten.

2. Place the cursor anywhere in the row containing the volume name.

3. Press PF 5, PF10, or PF11.

Or:

1. Type in a command under the Command heading, in the row containing the volume name.

2. Press PF6.

    Volume names, and drive designators other than UNASSIGNED, are not input items. You cannot tab to that field or type over the value.

Issuing commands in batch mode

To issue commands in batch mode:

1. Type in the commands and drive designators in the appropriate lines of the list area.

2. Press PF6.

Batch commands are executed in order, from the top of the screen to the bottom. A command that is in error and cannot be executed is tagged with **<** in the right-hand column.

Issuing commands from the command line

To issue any one of the following commands from the command line at the bottom of the screen:

1. Type in one of the following commands:

        ATTach   volume_name   drive_name
        DETach   volume_name
        REMove   volume_name
        EXEcute
        BACkward
        FORward
        INVoke   subsystem_name

2. Press Enter.

Invoke Subsystem is the only command that has no corresponding function key. Invoke Subsystem transfers you from PC Volume Management to the designated Dictionary/204 subsystem.

PC files and Model 204 records

Every PC file stored in a Model 204 file constitutes a record entry in the Model 204 file directory. This section describes the format of the records, and where and how the records are stored.

Record format

The record format determines the information that is stored for a PC file. Unless a PC file is an executable procedure, all the information is stored as a single record in the Model 204 file's Table B.

If the file is an executable procedure, the file identification data is stored partially in Table B, and partially in Table D's procedure dictionary. The file contents are stored as a SOUL procedure in Table D.

File format

File format is one of the record items that Model 204 maintains for PC files and Model 204 directories. The PC user specifies the format of a PC file. This format determines the amount of storage the PC file requires in the mainframe volume, the ease with which it can be accessed by SOUL programs, and whether it can be executed as a SOUL procedure.

PC file format can have one of these values:

This value...	Means that the file is...
Text	PC text file (for example, communications script, SOUL procedure, downloaded spreadsheet data or editor output). This file can be easily accessed and interpreted by SOUL programs.
Archive	PC text file (see examples above) or nontext (binary) file (for example, spreadsheet definition, or a typical PC-DOS exec or command file). This file is more compact than a file that has a TEXT format, but it cannot be easily accessed by SOUL programs.
Runnable	Executable SOUL procedure, created on the mainframe. A procedure file requires a RUNNABLE format if it is to be executed from the mainframe.

To summarize how PC files are stored on the mainframe:

• PC text file can be stored in TEXT or ARCHIVE format. If the text file is a procedure, it can be stored in RUNNABLE, TEXT, or ARCHIVE format.

- PC nontext file must be stored in ARCHIVE format.

An additional file format is reserved for Model 204 directories. The value is Dir.

Model 204 security

Security for PC files on the mainframe is established at the volume level. PC users have either read or update access to a volume, depending on the privileges defined for them in the Model 204 file from which the mainframe PC volume was defined. A public file allows update access to all users. A semipublic file or private file requires a password from the user. The password that the user enters determines whether read or update access is allowed.

A PC user who has read access to a mainframe PC volume can perform these operations on the PC files in the volume (the operations do not update the volume):

- LIST files

- EXECUTE runnable procedures

- COPY files from the volume (the "source" volume)

A PC user who has update access can perform all file operations. The operations are, in addition to the above:

- COPY files to the volume (the "destination" volume)

- ADD

- DELETE

- MODIFY

- MOVE

- RENAME

11

Cross-Reference Facility

Overview

The Cross-Reference facility produces reports for users who develop and maintain Model 204 SOUL (User Language) procedures. The output reports show the line numbers where language elements such as labels, functions, and variable names occur in a specified set of procedures.

The Cross-Reference Report is produced in batch mode (by a batch job in z/OS and z/VSE, by a service machine in z/VM). Before submitting a cross-reference job, you can specify:

- Set of procedures in a procedure file or group

- Set of language elements to be cross-referenced

- Substitute values for SOUL global dummy strings

- Job-related parameters such as output destination and lines per page

All these selections are made through a full-screen interface, which is accessible from both the Dictionary/204 main menu and Model 204 command level. The Cross-Reference facility also includes Preview and Browse functions, which inform you about the procedures selected for processing.

Each authorized user of the Cross-Reference facility starts with a standard set of defaults for procedure and element selection. These defaults are stored in the user's profile record. As the facility is used,

each user's profile is modified automatically to reflect the most recently chosen options.

Each user also has a default job procedure, which can be edited from within the Cross-Reference facility.

The availability of defaults for almost all options makes it possible to use the Cross-Reference facility without detailed knowledge of procedures or job control parameters. For example, if you are familiar with both SOUL and job control, you can select a set of procedures, assign appropriate values to all global dummy strings, change the output destination, and decide whether to designate batch processing as immediate or deferred. If you have no knowledge of programming, you can generate a report simply by opening a procedure file and submitting a job, using standard defaults set up by the dictionary administrator.

Using the Cross-Reference facility

Access privileges

The dictionary administrator authorizes access to the Cross-Reference facility by updating your account through Security Administration (see "Defining, updating, and deleting ACCOUNT privileges" on page 146 for details).

if you are authorized to use the cross-reference facility, the dictionary administrator can create a default job procedure associated specifically with your Model 204 user ID. You also have a user profile, which stores default values for procedure selection and report options.

If the dictionary administrator removes your Cross-Reference facility privileges, then the user profile and job procedure are both deleted.

Opening the procedure file or group

The file or group containing the procedures that you want to cross-reference must be open in order to view procedure names or generate reports. The appropriate Model 204 OPEN or OPENC command can be issued prior to invoking the Cross-Reference facility. You can also open files or groups from the command line on the Cross-Reference Selection screen. In this case, use the syntax for the OPEN and OPENC statements in SOUL (see "DDMIG IMPORT command" on page 255).

If you plan to generate Cross-Reference Reports frequently for some set of procedure files, the system administrator can add them to the Cross-Reference facility subsystem definition. It is then unnecessary to open those files before submitting jobs.

For details on OPEN syntax and subsystem definition, refer to the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/Files,_groups,_and_reference_ context#OPEN_statement_and_OPENC_statement

http://m204wiki.rocketsoftware.com/index.php/Application_Subsystem_develo pment#Subsystem_definition

Invoking the facility

Choose one of the following ways to invoke the Cross-Reference facility:

- Select the facility from the Dictionary/204 main menu.

- Invoke it from the main screen of any other Dictionary/204 facility, by entering "INV XREF" on the command line.

- Type XREF (with no further arguments) at Model 204 command level, and press Enter.

- Enter a more complex form of the XREF command at Model 204 command level, as follows.

The first three methods of invoking the Cross-Reference facility take you to the Selection screen, described in the next section. The fourth method bypasses the full-screen interface, and submits a batch job directly.

XREF: Generating a SOUL (User Language) Cross-Reference report

Privileges   Any user

Function   Creates a cross-reference report for a specific set of SOUL procedures

Syntax
```
XREF [* [procname] | [FILE
     | [TEMP | PERM] GROUP] name procname]
```

Usage notes   At Model 204 command level, you can issue the following forms of the XREF command:

XREF	Brings up the Cross-Reference Selection screen.
XREF *	Submits a cross-reference job using the default procedure selections and report options in your user profile record.
XREF * *procnam>*	Submits a cross-reference job for a single procedure in your default procedure file or group, using your default report options. For *procname* type the name of the procedure to be cross-referenced.

XREF *context procname*	Submits a job for a single procedure in a file or group other than your default. For *context* type FILE, GROUP, TEMP GROUP, or PERM GROUP followed by the file or group name. For *procname* type the name of the procedure.

When several users are logged in to the same Model 204 ID, only one at a time is allowed to use the Cross-Reference facility. An error message is displayed, if you try to invoke the facility when another user with the same ID is using it.

Open the procedure files in which the procedures reside before invoking the Cross-Reference facility (if you use XREF without any parameters, you can open the procedure files through the screen interface that you enter).

You can set substitution values for global dummy strings, as described in "Dummy entries" on page 184.

XREF support for Block Comments

The XREF facility of Dictionary was enhanced to add support for SOUL Block Comments in your procedures.

In Version 5.1, when each user enters the XREF screen for the first time, the user must enter the COMSTART and COMEND characters that designate a Block Comment in procedures that a user is going to process.

A profile record is stored for each user that contains the last COMSTART and COMEND characters the user entered on the screen. On a subsequent entry into XREF, those COMSTART and COMEND characters are displayed on the screen. If you type over the displayed characters, the new characters are

stored in your profile record. Figure 11-1 displays the Cross Reference
Selection screen with the COMSTART and COMEND fields.

Figure 11-1. Cross Reference Selection screen

```
XRSL            Cross Reference Selection      VER 6 REL 1
Procedure file/group . . . _____
Report options  All . . . . X

     Statement labels . . _   Lists/Positions. . . . . . _
     Variables. . . . . _    Subroutines. . . . . . . . _
     Field names. . . . _   Images/Menus/Screens. . . ._
     Functions. . . . . _   Dummy strings. . . . . . . _
      Files/Groups/DAF . . _
Expand INCLUDEs (Y/N) . . . N
Procedure selection criteria   Proc Names or Patterns
(N/P) . N
                              COMSTART: /?   COMEND: ?/
_____
_____
_____
_____
_____
_____
_____
_____

===>
1=HELp  2=REFresh   3=QUIt    4=EDIt job   5=PREview
6=SUBmit
                9=BROwse 10=GlObals            12=END
```

Cross-Reference Selection screen

To use the full-screen interface, you can either select the Cross-Reference
facility from the Dictionary/204 main menu, or issue the command XREF (with
no arguments) at Model 204 command level.

The first screen displayed is the Selection screen. Here you enter the
information required to select procedures and report options. PF keys and the
command line provide access to all other Cross-Reference facility functions.

This section explains the choices presented on the Selection screen and the
general purpose of each PF key and command. The following sample screen
shown has selections filled in:

```
╭──────────────────────────────────────────────────────────────────────────╮
│  XRSL                   cross-reference Selection              Ver 2 Rel 2.0 │
│                                                                             │
│      Procedure file/group . . . BILPROCS_____                          │
│                                                                             │
│      Report options    All . . . X                                          │
│                                                                             │
│                                                                             │
│        Statement labels . . . . . . _ Lists/Positions. . . . . . . . . . . . . . _ │
│        Variables . . . . . . . . . . . . _ Subroutines . . . . . . . . . . . . . . . _ │
│        Field names . . . . . . . . . . _ Images/Menus/Screens . . . . . . . . _ │
│        Functions . . . . . . . . . . . ._ Dummy Strings . . . . . . . . . . . ._ │
│        Files/Groups/DAF . . . . . ._                                         │
│                                                                             │
│      Expand INCLUDEs (Y/N) . . . Y                                           │
│                                                                             │
│                                                                             │
│      Procedure selection criteria          Proc Names or Patterns (N/P)  . N │
│   BILLSYS.PROC1_____          │
│   BILLSYS.PROC4_____          │
│   _____          │
│   _____          │
│                                                                             │
│                                                                             │
│   ===>                                                                       │
│    1=HELp       2=REFresh      3=QUIt       4=EDItjob    5=PREview     6=SUBmit │
╰──────────────────────────────────────────────────────────────────────────╯
```

Selecting a procedure file or group

To the right of the Procedure file/group prompt, fill in the name of the file or group that contains the procedures to be cross-referenced. Use any format recognized by the Model 204 OPEN command: simply the name, or the name preceded by FILE, GROUP, TEMP GROUP, or PERM GROUP.

For more information on OPEN, see M204wiki:

http://m204wiki.rocketsoftware.com/index.php/OPEN_FILE_command

If you select a multiple procedure file group, then the Cross-Reference facility searches all files in the order determined by CREATE GROUP.

For more information on CREATE GROUP, see M204wiki:

http://m204wiki.rocketsoftware.com/index.php/CREATE_command:_Permane nt_group

If you have not opened the procedure file or group prior to invoking the Cross-Reference facility, you can do so by entering an OPEN or OPENC statement in SOUL format on the command line at the bottom of the screen.

Selecting Report Options

The Report Options portion of the screen selects SOUL elements to be included in the Cross-Reference Report. Make selections here by typing an X (or any other nonblank character) to the right of each item selected.

You can either select report options individually, or select All and leave the individual options blank. The language elements you select appear in sorted groups in the Cross-Reference Report. For example, if you select Variables and Functions, the report includes a list of variables in alphanumeric sort order, and a separate list of functions.

The items you select under Report Options represent syntactic elements that can be recognized by the Cross-Reference facility's internal parser. For example, if a statement in your procedure begins with the keyword IN, then the parser identifies the next string as the name of a Model 204 file or group.

Language elements

The Cross-Reference Report groups language elements as follows:

Element	Includes...
Label	Both statement labels and statement numbers.
Variable	Variables preceded by a percent sign (%) but not those preceded by %% and :%, which are treated as field name variables and image/menu/screen items, respectively.
Field name	Both Model 204 field names and variables preceded by %%.
Function	All functions preceded by a dollar sign ($), whether they are standard Model 204 functions or created by the user.
File/Group/DAF	Model 204 files, groups, and DAF entities such as processes, conversation IDs, and destinations. For example, the names following the OPEN, IN, OPEN PROCESS, and RECEIVE commands are grouped in this category.
List/Position	All SOUL lists encountered in such context as the CLEAR LIST and PLACE RECORDS statements, and all SOUL positions encountered in such context as the POSITION and REMEMBER statements.
Subroutine	Simple and complex SOUL subroutines. Complex subroutines outside of BEGIN/MORE/END loops can be cross-referenced. This category also includes ON units.
Image/menu/screen	Both the names of these elements and their component parts. For example, variables preceded by :% are grouped in this category.

Element	Includes...
Dummy string	Include strings preceded by ??, ?&, or ?$. There are several options for referencing global dummy strings; these are explained in the next section and in "Setting values for global dummy strings" on page 239.

For more information on SOUL syntax, refer to the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/Overview_of_Model_204_com mands

http://m204wiki.rocketsoftware.com/index.php/Statement_syntax

Global dummy strings

The Cross-Reference facility provides a special set of options and functions for the resolution of global dummy strings.

Global dummy strings are SOUL variables with the prefix ?&. When a procedure is included, a value is substituted for each dummy string. The replacement value can be either supplied by the user or read from a global variable table.

One common use of global dummy strings is to specify the next procedure to be included. For example, the following statement can be resolved as IN TEMPPROC INCLUDE BILLSYS.PROC1 or as IN BILPROCS INCLUDE BILLSYS.PROC2, depending on the contents of the global variable table:

```
IN ?&PROCFILE INCLUDE ?&NEXTPROC
```

This programming technique is explained in the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/Procedures#Using_.3F.24_and _.3F.26_dummy_strings

In the Cross-Reference facility, you can use one of the following methods to provide values to be substituted for global dummy strings encountered in procedures to be cross-referenced:

- You can access the global variable table by using the $SETG function before invoking the Cross-Reference facility.

- You can specify substitute values on the Dummy String Resolution screen within the Cross-reference facility. This screen can be accessed from the Selection screen by pressing PF10.

These methods are explained in detail in "Setting values for global dummy strings" on page 239.

The more substitute values you enter for dummy strings, the closer your Cross-Reference Report becomes to the code that is executed at INCLUDE time. For example, if you substitute BILLSYS.PROC1 for ?&NEXTPROC, then all the SOUL elements in BILLSYS.PROC1 can be cross-referenced.

Dummy string options on the Selection screen have the following effects:

- Selecting the Dummy Strings option means that you want the dummy string *names* (such as ?&NEXTPROC) to be cross-referenced. The substituted values are not cross-referenced, but lines with resolved values appear in your output procedure listing. The line with the dummy string name is numbered, and the line with the resolved value is unnumbered and marked with asterisks.

- Leaving the Dummy Strings option blank means that you want to cross-reference substituted *values* (such as BILLSYS.PROC1). In your output procedure listing the line with the resolved value is numbered, and the line with the dummy string name is unnumbered and marked with asterisks.

- Whichever option you select, the Cross-Reference facility uses substituted values of global dummy strings for the purpose of expanding INCLUDEs. If any substituted value is a procedure in your open file or group, and you choose to Expand INCLUDEs, then language elements in the procedure are also cross-referenced.

- Remember that selecting All for Report Options has the effect of cross-referencing dummy string names, not values.

For examples of global dummy strings in the output listing, see "Cross-Reference Report" on page 245.

Expand INCLUDEs

On the "Expand INCLUDEs" line, you must type Y or N. If you select Y, then the Cross-Reference facility scans every INCLUDE command or statement in your procedure, searches for the included procedures or subroutines, and cross-references all included code that is found.

You can override this option in a Model 204 procedure by inserting one of the following lines before any INCLUDE statement:

```
 *EXPAND      (overrides N)
 *NOEXPAND    (overrides Y)
```

Cross-references of included code are generated for all language elements selected, including dummy strings and nested INCLUDEs up to the five levels permitted by Model 204.

The following restrictions apply to cross-references generated for INCLUDEs:

- Conditional INCLUDEs are listed as procedures in the top-down and bottom-up sections of your report, but are never expanded.

- If an INCLUDE statement is not preceded by an IN clause, then the assumed context always comes from your user profile. Thus, DEFAULT or OPEN statements in your procedures are ignored by the parser in determining the context of subsequent INCLUDEs.

Selecting procedures

Choose one of the following methods to select procedures to be cross-referenced:

- Enter procedure names on the bottom four lines of the screen

- Enter patterns for procedure names on the bottom four lines

To enter names, type N to the right of the "Proc Names or Patterns" line. You can enter several procedure names on the same line by separating the names with semicolons or any number of spaces. For example, the following line is recognized as a valid request to process three procedures:

```
BILLSYS.PROC1;BILLSYS.PROC2 BILLSYS.PROC3
```

To specify a pattern, type P. This informs the Cross-Reference facility that you want to use the pattern-matching rules described in the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/Record_retrievals#Pattern_matching

If you select pattern matching, do not list procedure names; instead, type one or more patterns, as shown in the following sample screen.

The selections shown on the following screen generate a report for all procedures in the BILPROCS file that begin with the string BILLSYS.

```
XRSL                    cross-reference Selection                Ver 2 Rel 2.0

    Procedure file/group . . . BILPROCS_____

    Report options    All . . . X


      Statement labels . . . . . . _ Lists . . . . . . . . . . . . . . . . . . . . . _
      Variables . . . . . . . . . . . _ Subroutines . . . . . . . . . . . . . . . _
      Field names . . . . . . . . . _ Images/Menus/Screens . . . . . . . _
      Functions . . . . . . . . . . . _ Dummy Strings . . . . . . . . . . . _
      Files/Groups/DAF . . . . . . _

    Expand INCLUDEs (Y/N) . . . Y


    Procedure selection criteria              Proc Names or Patterns (N/P) .  P
BILLSYS*_____
_____
_____
_____


===>
 1=HELp      2=REFresh      3=QUIt      4=EDItjob    5=PREview      6=SUBmit
```

Screen commands, PF keys, and messages

To issue a command, press the assigned PF key, or type the command on the
command line and press Enter. In the Cross-Reference facility, any command
assigned to a PF key can be abbreviated by typing just the first three letters.

Key	Command	Meaning
PF1	HELp	Selection screen HELP text explains commands, PF keys, and your user profile record.
PF2	REFresh	Erases your selections and displays the default options.
PF3	QUIt	Exits from the Selection screen without saving any changes.
PF4	EDItjob	Invokes the Model 204 full-screen editor to edit your job procedure. See "Editing the cross-reference job procedure" on page 244.
PF5	PREview	Displays the number of procedures found according to your selection criteria. Displays errors if the criteria were specified incorrectly.

Key	Command	Meaning
PF6	SUBmit	Submits your cross-reference job for execution.
PF9	BROwse	Displays a detailed list of procedures selected. Also displays pattern matching errors and named procedures that are not found. See "Reviewing procedure selections" on page 242.
PF10	GLObals	Displays a screen on which you can specify substitute values for global dummy strings. See "Setting values for global dummy strings" on page 239.
PF12	END	Saves changes entered on the screen and exits.

You can also issue OPEN and INVOKE commands from the Selection screen command line:

Command	Meaning
OPEN or OPENC	At the command prompt (===>) type any form of the SOUL OPEN or OPENC statement and press Enter. If the file or group to be opened requires a password, enter it as you issue the command. For example: `OPEN BILPROCS PASSWORD ZELDA` In this command format, password entry is visible; if you do not want passwords to be visible as you enter them, you must exit to command level to open files.
INVoke	You can transfer directly to another Dictionary/204 facility by typing at the command prompt: `INVoke <facility name>` Then press Enter. When you exit the invoked facility, you return to the Cross-Reference facility.

After you issue a command from the Selection screen, a message is displayed on the line above the command line. Informational messages report the results of issuing a command. For example:

```
XRF041 File/Group successfully opened.

XRF038 cross-reference job has been submitted.
```

Error messages report user errors, access conflicts, and various kinds of unsuccessful operations. For example:

```
XRF014 Please specify "N" or Names or "P" for Patterns.

XRF044 The specified procedure is currently in use.

XRF019 Pattern matches no procedure names.
```

Setting values for global dummy strings

This section explains how to assign values for global dummy strings. Choose one of the following methods:

- Run a procedure using the $SETG function

- Specify values on the Dummy String Resolution screen

You can use these methods simultaneously. Values set by $SETG take precedence over values specified on the Dummy String Resolution screen. The Cross-Reference facility searches for both types of substitution values, and uses whatever values are available.

"Selecting Report Options" on page 233 explains the reasons to provide substitution values for global dummy strings.

Using the $SETG function

The first method requires executing a SOUL procedure, or subsystem, immediately prior to entering the Cross-Reference facility. The SOUL $SETG function can be used to place values for critical global variables in the global variable table. This technique is often used in the initial LOGIN procedure of application subsystems.

Running a SOUL procedure like the following sets each global variable referenced to the value specified in the $SETG functions:

```
UTABLE LGTBL=1200
BEGIN
IF $SETG('NEXTPROC','BILLSYS.PROC1') OR -
$SETG('PROCFILE','BILPROCS') THEN
PRINT 'GTBL IS FULL'
END IF
END
```

For more information on the $SETG function, refer to the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/$Setg

It is important to set the LGTBL parameter using the UTABLE command, because the Cross-Reference facility itself needs 1000 bytes to operate. If LGTBL (the size of the table where globals are stored) is set to less than 1000, then the Cross-Reference facility resets it to 1000, destroying the contents of all preset global variables.

Therefore, compute LGTBL as follows:

```
LGTBL = 1000 + length+1 of all global variable names
             + length+1 of all global variable values
```

Do not use $SETG to set any global variables that are named XFER or that begin with the prefix CCA. These names are reserved for use by the Cross-Reference facility.

Note: Invoke the Cross-Reference facility by issuing the XREF command immediately after the procedure executes. Otherwise, the global variable values might be destroyed and the LGTBL parameter reset.

Using the Dummy String Resolution screen

To set global substitution values within the Cross-Reference facility, press PF10 on the Selection screen to bring up the Dummy String Resolution screen. The following screen example is shown with two entries.

```
 XRDR                Dummy String Resolution              Ver 2 Rel 2.0

   The following global dummy names will be replaced with the values you
   supply below in every procedure (and nested include) where they occur.

     Dummy String Name Value
  ?& NEXTPROC_____ BILLSYS.PROC1_____
  ?& PROCFILE_____ BILPROCS_____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____
  ?& _____  _____

  ===>


  1=HELp      2=REFresh    3=QUIt
  7=BACkward  8=FORward                                   12=END
```

Without the values entered on the sample screen (or set using $SETG) the facility would not, for example, be able to recognize that the following SOUL statement:

```
IN ?&PROCFILE INCLUDE ?&NEXTPROC
```

can be resolved at INCLUDE time to the following statement:

```
IN BILPROCS INCLUDE BILLSYS.PROC1.
```

The basic editing functions are performed directly on the screen:

To...	Do this...
Change lines in the table	Move the cursor to the strings or values you want to change and type over them.
Delete lines	Type spaces over them.
Add global strings and values	Type them in on the blank lines provided, scrolling forward if you have filled a screen.

You can add as many values as you want; the size of this table is limited only by the size of M204DCTL, the Model 204 file that contains Cross-Reference facility user defaults.

On this screen, the maximum length allowed for dummy strings is 20 characters. For substituted values, the maximum length is 50 characters.

Dummy strings are listed in the order in which you entered them. If your table takes up more than one screen, then the upper-right corner of the screen displays the line numbers you are viewing.

While editing the global substitution table, make sure that it conforms to the following rules:

- For every dummy string, there must be a value.

- For every value, there must be a dummy string.

- No dummy string name can have imbedded spaces, or special characters other than periods.

- Duplicate global dummy string names are not allowed.

If any of these rules is violated and you attempt to save changes, an error message is displayed.

Dummy String Resolution screen: PF keys and commands

PF keys and commands perform as follows:

Key	Command	Meaning
PF1	HELp	Global HELP text describes commands, PF keys, and rules for editing.
PF2	REFresh	Erases the entire list of global dummy strings and values. **Note:** These are not erased from your user profile until you press PF12.

Key	Command	Meaning
PF3	QUIt	Exits to the Selection screen without saving any changes.
PF7	BACkward	Scrolls backward so that the current top line on the screen becomes the bottom line.
PF8	FORward	Scrolls forward so that the current bottom line on the screen becomes the top line.
PF12	END	Saves all edits in your user profile and exits.

As on the Selection screen, any command assigned to a PF key can be entered on the command line.

If you press Enter after making changes, then your changes are checked for errors and the appropriate messages are displayed. Otherwise, the Enter key has no effect on this screen.

Reviewing procedure selections

The PREVIEW and BROWSE commands allow you to verify your procedure selections before you submit a cross-reference job.

PREVIEW command

The PREVIEW command displays brief messages about your procedure selection criteria above the Selection screen command line.

If you press PF5 or enter PREview on the command line, the Cross-Reference facility searches for procedures that fit your selection criteria.

If specifications contain any errors, or if named procedures are not found, then an error message is displayed above the command line. For example:

```
XRF015 Please specify at least one procedure name or pat-
tern
```

If procedures are found that fit your criteria, then an informational message is displayed telling you how many. For example:

```
XRF020 Number of procedures found: 6.
```

BROWSE command

The BROWSE command (PF9 on the Selection screen) displays a more complete report on found and unfound procedures.

Suppose, for example, that you have five BILLSYS procedures in your procedure file. On a Friday afternoon you enter the following list of procedures to be cross-referenced:

```
BILLSYS.PROC1;BILLSYS.PROC2;BILLSYS.PORC3
BILLSYS.PROC4BILLSYS.PROC5
BILLSYS.PROC6
```

Notice that PROC3 is misspelled and that PROCS 4 and 5 run together. PROC6 is specified correctly, but it does not exist.

In this case, if you press PF9, the following screen is displayed:

XRPS   Browse Selected Procedures   Lines 1-11 of 11

These named procedures could not be found:
BILLSYS.PORC3
BILLSYS.PROC4BILLSYS.PROC5
BILLSYS.PROC6

The following 2 procedures have been identified for cross-referencing:
Procedure Name   Date   Time   Length
BILLSYS.PROC1............................ 11/15/88   11:21:34   1685
BILLSYS.PROC2............................ 01/04/89   23:42:02   1756

XRF030: Bottom of text reached
===>
1= HELp 2= TOP 3= QUIt 5= LOCate
7= BACkward 8= FORward 9= BOTtom 10= BKWd 1/2 11= FWD 1/2

The first section of the BROWSE display (named procedures not found) helps identify various errors in specifying procedure selection criteria. If a procedure is listed here with the correct spelling (as is PROC6 in the example) then it is not in your procedure file or group.

The second section of the BROWSE screen displays detailed information about the procedures successfully selected:

- Date and Time columns display the time of the latest update of each found procedure.

- If the context specified is a group with multiple procedure files, then the BROWSE function displays a Filename column instead of the Time column.

- Length column displays the length in bytes of each found procedure. This figure can be useful if you need to calculate temporary disk space required for batch processing (see "Editing the cross-reference job procedure" on page 244).

BROWSE is a read-only function that has no effect on your options or defaults. Therefore, the available PF keys all control movement within the display. You can locate any string by typing it on the command line and pressing PF5.

Editing the cross-reference job procedure

This section is for users who have some familiarity with job procedures and batch processing. If you are not familiar with the job procedure language in use at your installation, use the default procedure set up by your dictionary administrator.

The generic cross-reference job procedure is stored as a Model 204 procedure named XREF.SYSTEM.*jtype* in the file M204DCTL, where *jtype* stands for JCL, EXEC, or JECL depending on whether your operating system is z/OS, z/VM, or z/VSE.

User job control procedures are named XREF.*userid*.JOB. They are also stored in M204DCTL.

To create a new user job procedure, issue the following Model 204 commands (with the appropriate values for *jtype* and *userid*):

```
OPEN M204DCTL
COPY PROCEDURE XREF.SYSTEM.jtype TO XREF.userid.JOB
```

Pressing PF4 (EDItjob) at the Selection screen allows you to edit your user job procedure, using the Model 204 full-screen editor. You can edit any line, but, in general, restrict your changes to installation-specific parameters such as output destination and job class.

When you edit your job procedure, take note of the following guidelines:

- Placeholder line is marked by the string //*M204XREF. Whenever you edit the job procedure, make sure that you do not delete this line. It marks the place where the selected procedures are inserted in the batch jobstream.

- Space allocation parameters specify a temporary data set or z/VM file with DDNAME = CCAREF. If you are submitting large jobs, you might want to increase the space parameters. You can estimate your temporary space requirements as follows: select a relatively large number of procedures on the Selection screen, press PF9 to BROWSE, and multiply the total bytes of the procedures displayed by 30.

- If you increase the temporary space parameters, find the sort step and increase the space for sort work data sets proportionately.

- LPP parameter in your job procedure sets the number of lines per page appropriate to your output device. In z/OS, this value is represented as

instream data following the LPP DDname. In z/VM, a Re*xx* variable called lpp is initialized near the top of your EXEC.

It is useful to remember that instead of editing your procedure, you can always copy the generic job procedure (or another user's procedure) by issuing the GET command in the full-screen editor.

Submitting a job

If you are using the full-screen interface, submit a cross-reference job by displaying the Selection screen and pressing PF6. If the submission is successful, an informational message is displayed above the command line. If the submission is not successful, an error message is displayed.

Successful submission of a job means only that the selection criteria you specified are valid. If the procedures you selected contain syntax errors or otherwise unparseable statements, error messages are included in the output report.

After you submit the job, no further intervention is required; batch processing proceeds whether or not you exit from the Cross-Reference facility or Model 204.

Remember, however, that how you exit from the Cross-Reference facility determines whether the options you have just chosen are saved in your user profile and used for future sessions. The END command (PF12) saves changes; the QUIt command (PF3) exits without saving changes.

You can also submit a job without going through the full-screen interface by entering the XREF command with arguments at Model 204 command level. For details, refer to "Invoking the facility" on page 229.

Retrieving output

When Cross-Reference facility batch processing is completed, the output can be sent to a disk or directly to a printer. The output destination depends on parameters set in your job procedure.

Details and options such as job class, priority, message class, and output device vary widely among Model 204 installations. If you are not familiar with job control and batch processing at your installation, ask your dictionary or system administrator how to retrieve Cross-Reference Reports.

Cross-Reference Report

The Cross-Reference Report consists of several sections, arranged in the following format:

1. Top-down list of procedures selected, with sublists of procedures they include.

2. Bottom-up list of all procedures included, and the procedures that use them.

3. Listing of each procedure, with sequential line numbers, parser errors flagged, and nesting levels marked by angle brackets.

4. For each procedure, a set of Cross-Reference Reports for each language element selected.

This section explains the details of the output report, and provides further information on how to use the Cross-Reference facility most effectively.

Cross-Reference Report format

Cross-reference output is in standard 132-column format. If you route your report to a printer, make sure that it supports a line width of 132 characters.

On each page of the report is a header, which identifies the section and also displays general information such as the length and last update of the procedure selected.

Page breaks occur whenever a new section begins, and are otherwise controlled by the LPP (lines per page) parameter in your job procedure (see "Editing the cross-reference job procedure" on page 244).

If you are cross-referencing a long procedure, you can also use the following methods to control pages and spacing:

- Force a page break in the listing by inserting a comment line *EJECT in your procedure. The line *EJECT does not appear in the procedure listing.

- Force a space by inserting the comment line *SPACE, or by inserting *SPACE *n*, where *n* is the number of blank lines you want in the procedure listing.

- Avoid using comments beginning with *CTL and *XRF in procedures to be cross-referenced. These reserved prefixes might adversely affect the parser.

- All parsed lines in the procedures are assigned sequential numbers, which appear in the left-hand column of the procedure listing. Comments and continuation lines are not numbered.

- Global dummy strings and their resolved values are listed together. If you chose to cross-reference the names, the line with the name is numbered and the line with the value has a string of five asterisks in the "LEVEL" column. If you chose to cross-reference the values, the line with the names has the asterisks.

- Each procedure is numbered sequentially from beginning to end, and all its language elements are cross-referenced together. For this reason, a procedure containing multiple requests (BEGIN... END sections) might generate a less informative report than would an equivalent set of separate subroutines.

Note: Although many features of the Cross-Reference Report are useful for debugging, remember that the internal parser is not a compiler. Lines that cannot be parsed are flagged with a general error message, but syntax errors are not described in detail. For best results, make sure that your code conforms to currently supported syntax as described in the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/Statement_syntax

http://m204wiki.rocketsoftware.com/index.php/Overview_of_Model_204_commands

Expanding INCLUDEs whenever possible also improves the overall coherence of the report.

In order to correctly cross reference image definitions and declare statements, the full image definition must be available in the procedure. If the full image definition is not available, in some cases incorrect results might occur such as including %variable definitions as part of the image definition or the following message might be issued:

```
XRF100: UNABLE TO PARSE EXPRESSION - CHECK SYNTAX.
```

Examples

The following examples (presented in condensed form) illustrate some details of the cross-reference Report format.

Top down list

The top down and bottom up lists are useful when you select several procedures.

In this example the procedure PRE-ADD.DRV has been selected; it includes five other procedures, and the relevant INCLUDE statements are found on the lines indicated. The type UL STMT denotes an INCLUDE statement within a request. COMMAND denotes a Model 204 INCLUDE command.

```
PROCEDURE            USES PROCEDURE            LINE   TYPE
-------------------------------------------------------------
PRE-ADD.DRIV         HELP.SCREEN               00031  UL STMT
                     HELPSUB                   00029  UL STMT
                     ON.CONFLICT.ERROR.UNITS   00101  UL STMT
                     SCREEN.DEFAULTS           00004  UL STMT
                     UPD.DRIV.SCREEN           00002  UL STMT
                     UTABLE.CHECK              00500  COMMAND
```

Bottom up list

This is a similar report, from the called procedure's point of view. In this case, HELPSUB is called by two different procedures in the set selected.

```
PROCEDURE              USED BY PROCEDURE      LINE   TYPE
-----------------------------------------------------------------
HELPSUB                PRE-ADD.DRIV           00029  UL STMT
                       PRE-UPD.DRIV           00014  UL STMT
```

Context, nesting level, and globals

This excerpt shows the first few lines of the PRE-ADD.DRIV procedure listing. A screen is defined within an included procedure, using another procedure called SCREEN.DEFAULTS. Each angle bracket (>) in the LEVEL column shows a nesting level. In the header, CONTEXT indicates the procedure file or group in which PRE-ADD.DRIV resides.

The user selected the Dummy String report option, so dummy string names (not substituted values) are to be cross-referenced. In the listing, the substituted value for "??TAG" appears as an unnumbered line.

```
             PROCEDURE: PRE-ADD.DRIV


CONTEXT: AUTOPROC      UPDATED: 1/30/90 16:29      LENGTH: 5465


LINE NO  LEVEL                      SOURCE LISTING
-----    -----   -------------------------------------------------
00001            B
00002            IN AUTOPROC INCLUDE UPD.DRV.SCREEN
00003    >       SCREEN UPD.DRIV
00004    >       IN AUTOPROC INCLUDE SCREEN.DEFAULTS X
00005    >>      DEFAULT PROMPT BRIGHT
00006    >>      DEFAULT INPUT PAD WITH '_' TAG BRIGHT WITH '??TAG'
         *****   DEFAULT INPUT PAD WITH '_' TAG BRIGHT WITH 'X'
00007    >>      MAX PFKEY 12
00008    >       PROMPT USC1
```

Variables

Variables (like other language elements) are grouped together and listed in alphanumeric sort order.

The DEFN column indicates the line where a variable is explicitly declared. This column is blank for undeclarable items such as files, fields, and functions. Other possible DEFN values are:

- DEFAULT

- *UNDEF for undefined image, menu, or screen items

- SYSTEM for reserved names such as PFKEY.

The variable %FULLNAME has a line number in the DEFN column, because line 174 of PRE-ADD.DRV is:

```
%FULLNAME IS STRING LEN 75.
```

An asterisk to the right of a line number in the REFERENCES column indicates a line where the value of a variable is altered. For example, line 256 is:

```
%FULLNAME = %UPD.DRIV:LNAME WITH %UPD.DRIV:FNAME.
```

The variable %LINE is in the complex subroutine HELPSUB, the name of which is appended in parentheses. Complex subroutine names are also appended to image and screen items, lists, and labels.

```
PROCEDURE: PRE-ADD.DRIV

CONTEXT: AUTOPROC UPDATED: 1/30/87 16:29 LENGTH: 5465

VARIABLE                        DEFN      * R E F E R E N C E S *

--------------------------- ------ --------------------------------
%ENQCTR                     DEFAULT   000142  000151* 000155 000235
%FULLNAME                             000174  000256* 000261
%I                          DEFAULT   000271* 000272
%LINE (HELPSUB)             DEFAULT   000084*
```

12

Dictionary Migration Subsystem

Overview

The DDMIG subsystem allows authorized users to migrate Dictionary data from one Model 204 environment to another. You can use DDMIG to export or import the following dictionary entities, including user-defined attributes and descriptions:

fields
field groups
procedures
records
screens
screen items
views
view fields

To migrate subsystem definitions, use the SUBSYSMGMT Export and Import options described in the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/System_requirements_for_Application_Subsystems#Subsystem_Import.2FExport_options

Both DDMIG and the SUBSYSMGMT Export and Import options use the intermediate file D204SYS, a Model 204 file created during Dictionary/204 installation. The D204SYS file must be defined to each Model 204 environment that uses DDMIG or SUBSYSMGMT Export/Import.

If you are migrating files belonging to a subsystem as well as the subsystem definitions, it does not matter which facility you use first.

DDMIG security

To use DDMIG, you must be authorized by the dictionary administrator through the DICTADMIN Security screen.

DDMIG is a semipublic AUTOSTART subsystem.

Invoking DDMIG

If you are authorized to use DDMIG, you can invoke it by issuing the command DDMIG with any of the following parameters:

Syntax
```
DDMIG {EXPORT filename |
       IMPORT [CHECK | filename | ALL | ALLC] PENDING |
       DELETE [filename | ALL] |
       LIST}
```

DDMIG EXPORT command

Exporting a file means that you add Dictionary/204 data to the intermediate file D204SYS, from which the data can then be imported to another Model 204 environment.

To export a file, enter the command:

Syntax
```
DDMIG EXPORT filename
```

where *filename* is the name of the Model 204 file to be exported.

Files must be exported one at a time. To export more than one file, you must issue the DDMIG EXPORT command repeatedly. The number of files you can export is limited only by the size of D204SYS (refer to the Rocket Model 204 installation instructions for your operating system for instructions on how to create and size D204SYS).

If Model 204 file information differs from dictionary data, you must run DDGEN (described in Chapter 3) before running DDMIG.

The DDMIG EXPORT run terminates with an error message under any of the following circumstances:

- You omit the filename.

- File has staged commands.

- File does not exist in your Model 204 Dictionary.

- File is being updated through the FILEMGMT facility.

- You cannot access D204SYS.

- File has already been exported to D204SYS.

If you want to export a file that has previously been exported, you can do so by first deleting the D204SYS entry with the DDMIG DELETE command.

Once you have specified a valid filename, DDMIG issues the prompt:

`SPECIFY REPORT DESTINATION`

Here you can enter the name of a sequential file, or (if you are in Online mode) you can press Enter to display the report on the screen.

A sample EXPORT Report is shown on page 254.

Sample EXPORT Report

```
          REPORT FOR ACCOUNT: DEVPHIL    DATE:91-01-18
TIME:15:39:21
REPORT FOR FILE:   M204TEMP
THE FOLLOWING METADATA INFORMATION HAS BEEN EXPORTED
                                                    FOR
FILE: M204TEMP
FIELDS:
---------------
TSK1
TSK2

FIELD GROUPS:
----------------
DEVGROUP

RECORDS:
----------------
DEVREC

PROCEDURES:
-----------------
LOGOUT-PROC2

SCREENS
-----------------
NONE

THE FOLLOWING DATALINK INFORMATION HAS BEEN EXPORTED
                                                    FOR
FILE: M204TEMP

*** FILE to  FIELD relationships
      FILE: M204TEMP ~ FIELD: TSK1
*** FILE to RECORD relationships
      FILE: M204TEMP ~ RECORD: DEVREC

      *** RECORD to FIELD relationships
            RECORD: DEVREC ~ FIELD: TSK1
            RECORD: DEVREC ~ FIELD: TSK2

*** PROCEDURE to FILE relationships

         PROCEDURE:LOGOUT-PROC2 ~STORED IN FILE:
```

DDMIG IMPORT command

Importing means that you retrieve Dictionary data from the intermediate file D204SYS. When Dictionary data is imported, entries are added to the target Dictionary for the following entity types. User-defined descriptions and attributes are also added for each entity type.

For each file that DDMIG imports, the following entries are created:

Entity type	Dictionary information stored
FILE	One entry is added, containing all Dictionary/204 data associated with the file, including links to procedures, fields, field groups, records, views, and view fields.
PROCEDURE	One entry is added for each procedure with associated attributes. If the procedure defines a SCREEN, relationships among procedure, SCREEN, and SCREEN ITEMs are added, for each screen and item that has been exported.
RECORD	One entry is added to the Dictionary, if no record is defined for the imported file. If records are defined, one Dictionary entry is added for each record. Preallocated field are cross-referenced to a record entry. Relationships between the file and a record are added, as are relationships between the record and its fields.
FIELD	One entry is added for each field, with values for field attributes and relationships between the file and each field.
FIELD GROUP	One entry is added for each group of repeating fields in the file.
VIEW	One entry is added for each view, including links to file, records, and view fields.
VIEW FIELD	One entry is added for each view field, including links to views and fields.
DESCRIPTIONS	For each of the entity types, any user descriptions created through the DOCUMENT facility are added to the appropriate entries.
ATTRIBUTES	For each of the entity types, user attributes entered through the DICTADMIN facility are added to the appropriate entries.

DDMIG IMPORT parameters

You can use the following parameters with the DDMIG IMPORT command:

- CHECK

- ALL

- ALLC

• filename

The parameters are described in detail in the following sections.

A further option with ALL, ALLC, or *filename* is PENDING. When dictionary data is imported in Pending mode, CREATE commands can be executed either directly from the FILEMGMT Execute Commands screen or in batch mode, as described page 257. When the Pending commands are executed, the entities are defined to Model 204 as well as Dictionary/204.

CHECK parameter

The CHECK parameter tells you which files currently reside in D204SYS, which of those files already exist in the target Dictionary. and which fields are undefined. It is usually prudent to run CHECK before importing Dictionary/204 data. A sample CHECK screen follows.

```
D204SYS FILE LIST                                    Liines 1-16 0f 16


FILENAME      USERID      JOBNAME     DATE        TIME

M204TEMP     DVPHIL      DEV22       91-4-23     09:21:38
DEVFIL2      DVLEON      DEV39       91-2-28     18:33:33
 ****   MIG007 DEVFIL2 already exists in target dictionary  ****
QAFIL1       QAHERN      DEV44       90-10-06    07:09:00

 ****   MIG008 The following METADATA fields are undefined:

    FIELD1
    FIELD4
    FIELD5





1=HELp        2=TOP       3=QUIt      4=              5=LOCate    6=
7=BACKward    8=FORward   9=BOTtom    10=BKWd 1/2   11=FWD 1/2  12=
```

ALL, ALLC, and *filename* options

The ALL and ALLC options import all the file information currently residing in D204SYS to the target Dictionary.

The ALL option executes the import command as a single update; if an error occurs while importing one of the files, processing terminates with an error.

The ALLC option does not execute the IMPORT command as a single transaction; if an error occurs while importing one of the files, processing continues with the next file in D204SYS.

The *filename* option imports Dictionary data for a single file.

The ALL, ALLC, and *filename* options can all take the further parameter PENDING, described on page 257.

After you issue any of these forms of the DDMIG IMPORT command, you are prompted for a report destination. Supply the name of a sequential file or press Enter for screen output.

The IMPORT run terminates with an error message under any of the following circumstances:

- File's metadata already exist in the target Dictionary.

- File's datalink relationships are already in the target Dictionary.

- Fields for user-defined attributes are not defined in the target Dictionary.

- File name you specified is not in D204SYS.

You can avoid the above error conditions by running DDMIG IMPORT CHECK and taking the appropriate action (for example, by deleting or renaming data in the target Dictionary).

If a user has updated D204SYS since the last LIST or CHECK performed by the importing user, the DDMIG subsystem displays a Y or N prompt asking you if you want to continue.

DDMIG IMPORT PENDING option

The PENDING option can be used with ALL, ALLC or a single filename. When this option is specified, the Dictionary data is imported as staged data with the command state Pending. The staged commands can then be executed from the FILEMGMT Execute Commands screen (described in the section "Execute Commands screen" on page 305).

This job can also be performed in one step using the DDMIG job (z/OS or z/VSE) or the DDMIG option of the D204 EXEC (z/VM). You must specify a DD statement (z/OS); DBL, EXTENT and ASSIGN statements (z/VSE); or LINK, ACCESS and FILEDEF statements (z/VM) for each file to be actively imported and physically created using FIMO.BATCHCMD.

Once the Pending commands are executed, the file is physically created along with any fields defined to the file.

The following DDMIG CCAIN stream actively imports file data (executes staged commands with status Pending). Files can be imported actively by

uncommenting the commands that follow the OUTFILE line.

```
PAGESZ=6184,SPCORE=20000,NFILES=110,NDCBS=110,NDIR=110,
INCCC=0,MINBUF=10,LENQTBL=300,SERVSIZE=215000,LOGADD=10,
LITBL=150,LFSCB=7000,LSTBL=10000,LGTBL=500,LRETBL=5000,NO
RQS=6
LOGON userid
password
DDMIG IMPORT filename PENDING
OUTFILE
*OPEN M204PROC
*IN M204PROC INCLUDE FIMO.BATCHCMD
*filename
***
EOJ
```

where:

userid	Is filemanager.
password	Is the password for that user ID.
filename	Is the name of the file to be imported. Here you can specify ALL to import all files that have been exported.

Follow these guidelines:

- Three asterisks (***) following *filename* are required for FIMO.BATCHCMD; if you are using active import, *do not* remove them.

- If you are using active import for more than 10 files, you must increase LOGADD by the number of files exceeding 10.

- OUTFILE refers to the report file for the run.

DDMIG LIST command

The command DDMIG LIST generates a report exactly like the CHECK report on page 256, except for the error checking and undefined field messages.

DDMIG DELETE command

To delete files from D204SYS, issue the command:

Syntax `DDMIG DELETE [ALL | filename]`

If you specify ALL, DDMIG deletes all files in D204SYS. Before clearing D204SYS, DDMIG displays a Y or N prompt, asking you if you want to continue.

DDMIG restrictions

The following restrictions apply to the DDMIG subsystem:

- You must execute both the Export and Import steps using the same Model 204 version.

- If DATALINK relationships exist in the target Dictionary for a file to be imported, they must be deleted or renamed before the import.

- DDMIG does not import the file control record; therefore, it cannot migrate user-defined entities linked to files, fields, records, or procedures.

A
Entity Type Definitions

This appendix lists entity type definitions in alphabetical order.

ACCOUNT

One ACCOUNT entry exists for each Model 204 account that uses Dictionary/204, Workshop/204, or PC/204. ACCOUNT entries are used by Dictionary/204 and Workshop/204 to determine which facilities the user can use and to determine the user's session defaults. ACCOUNT entries are also used by PC/204 and the Workshop/204 Query/Update facility to determine who controls each view definition and who can read or update the data associated with each view.

Used by   Dictionary/204, Workshop/204, PC/204

Defined in   Dictionary Administration

System attributes

ENTITY	Value must be ACCOUNT.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Model 204 logon account (user ID) for a user. The value must be a name from 1 to 10 characters.
OUTPUT FILE	Name of the default output destination when generating hard copy reports with Dictionary/204 facilities. Unless otherwise specified, the system default is OUTFILE. This value can be from 1 to 30 characters.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.
DOC_ENT_ALLOWED	Multiply occurring field containing all entity types the Documentation facility user is allowed to modify.

System relationships

USES	FACILITY. States that this account has privileges to use the facility.

Relationships

OWNS	VIEW entries. Using Query/Update, the user with this account can update the OWNs, READs, and UPDATEs relationships to this view for all accounts.
READS	VIEW entries. The user with this account can use these views to read data through Query/Update or PC/204.
READS	COMPOSITE VIEW entries. The user with this account can use these views to read data through PC/204.
UPDATES	VIEW entries. The user with this account can use these views to update data through Query/Update.

Referenced by

```
Entity Type        Relationship

PROCEDURE          WRITTEN BY
```

COMPOSITE VIEW

See "Defining view entries" on page 38 for the definition of this entity type.

DEVELOPER DEFAULTS

One DEVELOPER DEFAULTS entry exists for each attribute that has a default value in the Workshop/204 Query/Update interface, such as the KEY attribute for fields.

Used by   Workshop/204 Query/Update

Defined in   Workshop/204 Query/Update

System attributes

ENTITY	Value must be DEVELOPER DEFAULTS.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Name of the attribute for which a default is being set
ATTRIB MODIFIABLE	Indicates whether or not this default can be overridden by the Query/Update user. The values are Y, N, or null. Default is Y.
ATTRIB TYPE	Indicates what type of default this is. The values are VIEW, FILE, or FIELD.
ATTRIB VAL	Default value for this attribute.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

None.

Relationships

None.

ENTITY TYPE

ENTITY TYPE entries define the entity types in the dictionary's standard definitions (in contrast to the user-created entity types). These entries are used by Dictionary/204 as part of the Dictionary/204 security scheme.

Used by   Dictionary/204

Defined in   Dictionary/204 installation

System attributes

ENTITY	Value must be ENTITY TYPE.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Standard entity type name

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

None.

Relationships

None.

Referenced by

```
Entity Type    Relationship

FACILITY       CONTROLS
```

FACILITY

FACILITY entries define the Dictionary/204 and Workshop/204 facilities. These entries are used by Dictionary/204 as part of the Dictionary/204 security scheme. These entries also define defaults for some of the facilities, such as the Dictionary/204 File Management facility's Active/Inactive option. These entries are initially defined with the installation of Dictionary/204 and Workshop/204. The Dictionary Administration facility is used to change the defaults

Used by   Dictionary/204, Workshop/204

Defined in   Dictionary Administration

System attributes

ENTITY	Value must be FACILITY.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Identifies the facility
ADMIN HELP	Two lines of help text, 60 characters each. The text is defined at installation. It describes the use of the named facility.
ADMIN PROC	Name of the procedure that controls the setting of the facility options through the Dictionary Administration facility.
ADMIN TITLE	Name of the screen used to set the Facility options. This value is the same as the text of the menu option used to select the screen through the Dictionary Administration facility.
FM OPTION	These values set the available command execution modes for File Management: IN = INACTIVE, AI = ACTIVE IMMEDIATELY, AD = ACTIVE DELAYED, GENERATE COMMANDS ONLY
FM DEFAULT OPTION	This value is the default mode. Choose one of the values selected in FM OPTION.
FM DEFAULT PROCFILE	Name of the procedure file in which commands generated by File Management are stored.

FM DEFAULT USEFILE	Name of the default output or report file in which commands generated by File Management are stored.
SCG DEFAULT PROCFILE	Name of the procedure file in which procedures generated by the Screen and Action Generator are stored. This attribute is present only if Workshop/204 is installed.
SCG DISPLAY PROCNAME	Name of the default procedure template used when generating display procedures using the Screen and Action Generator. This attribute is present only if Workshop/204 is installed.
SCG QUERY PROCNAME	Name of the default procedure template used when generating query procedures in Screen and Action Generator. This attribute is present only is Workshop/204 is installed.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the number of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

CONTROLS	ENTITY TYPE. The facility updates entities of this type.
Cross-Reference	SUBSYSTEM. The subsystem corresponding to this facility.

Relationships

None.

Referenced by

Entity Type	Relationship
ACCOUNT	USES

FIELD

One FIELD entry exists for each field in a Model 204 file. This entry specifies the physical characteristics of the field. FIELD entries are used by the File Management facility in maintaining the field definition and in sizing the file, in mapping views (including COBOL views) to Model 204 data, and by the Screen and Action Generator in generating views from records.

Used by File Management, Workshop/204 Query/Update, Workshop/204 Screen and Action Generator, PC/204, Access/204 View Management, and Picture Power.

Defined in File Management, PC Volume Management

System attributes

ENTITY	Value must be FIELD.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Model 204 file name concatenated with a period followed by the field name (that is, the UNQUALIFIED NAME). The field name must begin with a character and cannot exceed 70 characters (excluding the file name component). The format is: *`<file_name.field_name>`* (See the UNQUALIFIED NAME definition below.)
UNQUALIFIED NAME	Name of this field without the file name prefix. This name need not be unique within the FIELD entity type. This is the same as the Model 204 field name.
AVERAGE LENGT	Specifies average number of characters in the values for this field. The value is an integer. Screen and Action Generator uses this attribute when generating a view definition from a record definition.
AVERAGE OCCURS	Specifies the average number of occurrences of this field in a record. The value is an integer. Default is 1. If the value is non-zero, Access/204 View Management assumes that the field is multiply occurring. Screen and Action Generator uses this attribute when generating a view definition from a record definition.
CODED/FRV FEW VAL	If the field is coded (CODED=Y) or for-each-value (FOR-EACH-VALUE Y/N=Y), this specifies that it is few valued, approximately 50 or fewer distinct values. This attribute corresponds to the Model 204 field attribute, FEW-VALUED. The value is Y, N, or null. The File Management default is N.

CODED/FRV MANY VAL	If the field is coded (CODED=Y) or FRV, this specifies that it is many valued, approximately 50 or more distinct values. Corresponds to Model 204 field attribute, MANY-VALUED. The value is Y, N, or null. The File Management default is N.
CODED	Specifies that this field is CODED. This means that each unique value is stored in the file's Table A and that a code is stored in each Table B record instead of the value. Corresponds to the Model 204 field attributes CODED and NON-CODED. The value is Y, N, or null. The File Management default is the Model 204 default (not coded).
DEFERRABLE Y/N	If the field is key (KEY Y/N=Y), this specifies whether or not the updates to the index for this field can be deferred. Corresponds to the Model 204 field attributes DEFERRABLE and NON-DEFERRABLE. The value is Y, N, or null. The File Management default for key fields is Model 204 default, Y.
FIELD PERCENT RATE	Percentage of time a field occurs in a specific RECORD. Specified as a RECORD=VALUE pair. One record = value pair is stated for each record that the field participates in. The value is an integer from 0 to 99999. The default is 100. Used by File Management for file sizing. Refer to "Field Group Definition screen" on page 301 for the algorithm used to compute this value.
FLOATING PT Y/N	Specifies that this field is floating point. The number of bytes is stored in AVERAGE LENGTH. The value for this attribute is Y, N, or null. Corresponds to the Model 204 field attribute, FLOAT. The File Management default is the Model 204 default, N, or null.
FOR-EACH-VALUE Y/N	Specifies that this field is a FOR EACH VALUE field. This means that a separate list of the unique values is maintained and available to SOUL requests. Corresponds to the Model 204 field attributes FRV and NON-FRV. The value is Y, N, or null. The File Management default is the Model 204 default, N.
IMMED	Number of immediate pointers per segment in the ordered index. The value is an integer between 0 and 255. The File Management default is the Model 204 default, 1.
KEY Y/N	Specifies that this field is KEY. This means that an index is maintained for the field. Corresponds to the Model 204 field attributes KEY and NON-KEY. The value is Y, N, or null. The File Management default is the Model 204 default, N.
LEVEL	Specifies the security level for this field. Corresponds to the Model 204 field attribute LEVEL. The value is an integer between 0 and 255, or null. The File Management default is the Model 204 default, 0.

LRESERVE	Indicates the percentage of space to leave free on a leaf-page during deferred updates (FLOD) or the ordered index REORGANIZE OI. The percentage is a value between 0 and 99. The File Management default is the Model 204 default, 15.-
MAX OCCURRENCES	For a multiply occurring field the maximum number of occurrences expected. Used by File Management. The default is 1.
MIN OCCURRENCES	For a multiply occurring field, the minimum number of occurrences expected. Used by File Management. The default is 1.
MIXED CASE	Specifies if data is stored in mixed case or uppercase. The value is Y for mixed case, N for uppercase, null for uppercase. The default is null.
NR NUM SIGNIF DIGITS	If the field is numeric range (NUMERIC RANGE Y/N=Y), specifies the maximum number of significant digits for this field. The value is an integer. The value is required by File Management for numeric range fields.
NRESERVE	Indicates the percentage of space to leave free on a node-page during deferred updates (FLOD) or the ordered index REORGANIZE OI. The percentage is a value between 0 and 99. The File Management default is the Model 204 default, 15.
ORDERED Y/N	Specifies that this field is an ORDERED field. The value is Y, N, or null
NUMERIC RANGE Y/N	Specifies that this field is a NUMERIC RANGE field. The value is Y, N, or null. Corresponds to the Model 204 field attributes NUMERIC RANGE and NON-RANGE. The File Management default is the Model 204 default, N.
NUMBER UNIQUE VALUES	If the field is KEY, NUMERIC RANGE, FRV, or CODED, specifies the estimated number of distinct values for this field in the file. The value is an integer. File Management requires a value for key, numeric range, frv, and coded fields.
PHYSICAL FORMAT	Specifies whether the PHYSICAL PICTURE is fixed or variable. The values are: compact, V = VARIABLE, F = FIXED, Null for invisible fields.They are used to determine the search strategy in generated code.

PHYSICAL PICTURE	Describes the physical picture of the FIELD. This is used by Access/204 View Management for generating the Access/204 field attribute SYSTEM PICTURE. It is used by PC/204 to determine domain characteristics. The specification is the same as for Access/204 SYSTEM PICTURE. The default is X(20), which is the same as the Access/204 SYSTEM PICTURE default. The Access/204 limit for string length is 231 characters. For other products and facilities, the limit is 255 characters. The specifications follow:
	Strings
	• X(n) - string, length n
	Numeric
	• 9(n) - numeric integer, length n
	• 9(n).9(m) - decimal number with embedded decimal point
	• 9(n)V9(m) - decimal number with implied decimal point
	• A prefix of '+' can be used to denote a positive numeric. Access/204 View Management converts the S to a minus (-) when it downloads the information to Access/204.
	• A prefix of '-' can be used to denote a negative numeric. For example: '+9(n)'.
	• A prefix of 'S' can be used to denote a signed numeric.
	• Null is the required value for invisible fields.
	The following date formats are allowed (Y=year, M=month, d=day):
	• YYYYMMDD. For example: 19850625, June 25, 1985.
	• YYMMDD. For example: 850625, June 25, 1985.
	• MMDDYYYY. For example: 06251985, June 25, 1985.
PHYSICAL PICTURE (continued)	• YYYYDDD. For example: 1985176, June 25, 1985.
	• YYDDD. For example: 85176, June 25, 1985.
	Picture
	• Value of P, indicating graphic data to be processed by PICTURE/205.
PREALLOCATED PAD	If the field is preallocated, this specifies the character to be used to pad the field when a value is actually shorter than the preallocated length. The value is X'yy' or null. Corresponds to the Model 204 field attribute PAD. The File Management default is the Model 204 default, X'00'.

SIGNIFICANT DIGITS	Specifies what digits are significantly stored in the PHYSICAL PICTURE. The values are:
	A — All digits are significant and stored. Essentially a fixed length field matching the PHYSICAL PICTURE.
	T — Trailing zeroes after the decimal point are stored, Leading zeroes are not stored
	L— Leading zeroes are significant, Trailing zeroes after the decimal point are not stored.
	N — No leading zeroes or trailing zeroes after the decimal point are stored. This is the default value
	null — Is interpreted as having a value of 'N'. These values are used to determine the search strategy in logically generated code.
SPLITPCT	Indicates the percentage of data to leave on the earlier node during the split of a node in an immediate (as opposed to deferred) update. The percentage is a value between 1 and 100. The File Management default is the Model 204 default, 50.
STRING Y/N	Specifies whether a field is to be stored in character or numeric format. Corresponds to the Model 204 field attributes STRING and BINARY. The value is Y for character data, N or null for binary, or floating point (numeric data). The File Management default is the Model 204 default, Y.
TREETYPE	Indicates whether an ordered index field is based on CHARACTER field or NUMERIC comparisons. The value is Y, N, or null. The default depends upon the values specified for STRING Y/N. If STRING Y/N is Y, the default is C. If STRING Y/N is N, the default is N. These values can be changed by the administrator.
UPDATE-IN-PLACE Y/N	Specifies whether or not the occurrence of a field is to be updated in place. If not, updating an occurrence makes the occurrence the last occurrence of the field. Corresponds to the Model 204 field attributes, UPDATE IN PLACE and UPDATE AT END. The value is Y, N, or null. The File Management default is the Model 204 default, Y.
UNIQUE Y/N	Specifies whether a given field name = value pair can occur in only one record in a file. The value is Y, N, or null. Corresponds to the Model 204 field attributes UNIQUE and NON-UNIQUE. The File Management default is the Model 204 default, N.

VISIBLE Y/N	If a field is KEY (KEY Y/N=Y), specifies whether or not a field is visible. Invisible fields have entries only in the indexes. Thus, they can be used as part of a search criteria but cannot be printed. Corresponds to the Model 204 field attributes, VISIBLE and INVISIBLE. The value is Y, N, or null. The File Management default is the Model 204 default, Y, for key fields.
WEIGHTING FACTOR	Indicates the percentage of values in the file to be added immediately as opposed to those added in deferred updates (for example, the values added in a FLOD routine). This factor is used by File Management sizing to estimate the relative significance of LRESERVE and SPLITPCT. The value is an integer between 0 and 100. The default is 50.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.
DEFAULT VAL	This value specifies the default for data entered for this field.
NR MORE 3% FILE Y/N	If the field is NUMERIC RANGE (NUMERIC RANGE Y/N=Y), this specifies whether or not this field occurs in more than 3% of the records in this file. **Note:** This percentage represents the frequency of the field, not of a fieldname=value pair. The value is Y, N, or null. This value is for documentation purposes only.
ONEOF	List of valid values for this field. The validation criteria on the view field are later used to generate validation criteria for a screen item.

RANGEIS	Value specification of the range of permissible values for this field. The format is: `<RANGEIS=`*`rangestart_value`*`,` *`rangeend_value`*`>` This is not a repeating value; to specify multiple ranges, add more attribute=value pairs. ANDing of the multiple ranges is assumed. The validation criteria on the view field is later used to generate validation criteria for a screen item.
VERIFY	List of characters that are valid for this field. The validation criteria on the view field are later used to generate validation criteria for a screen item.

System relationships

Cross-Reference	FIELD GROUP entries. Indicates that this field occurs in the corresponding FIELD GROUPs. Used by Access/204.
Cross-Reference	RECORD entries. Indicates that this field occurs in the corresponding record types. Used by File Management.
Cross-Reference	FILE entry. Indicates that this field occurs in a corresponding file. Used by File Management.
HAS STAGED	STAGED FIELD entry. Indicates that this field participates in a pending field definition. Used by File Management.

Relationships

None.

Referenced by

```
Entity Type          Relationship

COBOL VIEW FIELD     MAPS TO, ALT MAPS TO
COBOL FIELD GROUP    MAPS TO, ALT MAPS TO
FILE                 HASH KEY, SORT KEY, RECSCTY
RECORD               RECTYP ID, UNIQUE ID
VIEW FIELD           MAPS TO
STAGED FIELD GROUP   DELLINK
STAGED RECORD        DELLINK, STAGED TO
```

FIELD GROUP

One FIELD GROUP entry exists for each repeating group of fields within a Model 204 file. This entry describes which fields occur together as a repeating group within physical records. No field can be in more than one field group in a

file. These entries are used by the File Management facility for describing record layouts.

Used by File Management; Access/204 View Management

Defined in File Management

System attributes

ENTITY	Value must be FIELD GROUP.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Model 204 file name concatenated with a period followed by the field group name (that is, UNQUALIFIED NAME). The field group name must begin with a character and cannot exceed 70 characters (excluding the file name component). The format is: *<file_name.field_group_name>* (See the UNQUALIFIED NAME definition below.)

Attributes

UNQUALIFIED NAME	Name of this field group without the file name prefix. This name need not be unique within the FIELD GROUP entity type. This is the same as the Model 204 field group name.
SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

Cross-Reference	FILE entries. Indicates that this field group occurs in the corresponding files. Used by File Management.
Cross-Reference	RECORD entries. Indicates that this field group occurs in the corresponding record type. Used by File Management.
Cross-Reference	FIELD entries. Indicates that this field participates in the FIELD GROUP.
STAGED TO	STAGED RECORD. Indicates that the field group participates in a pending RECORD definition. Used by File Management.
HAS STAGED	STAGED FIELD. Indicates that the field group has a staged field in pending status for a pending STAGED FIELD GROUP. Used by File Management.
HAS STAGED	STAGED FIELD GROUP. Indicates that the field group has a pending staged field group. Used by File Management.

Relationships

None.

FILE

One FILE entry exists for each Model 204 file. This entry describes the physical characteristics of the file. The File Management facility uses FILE entries to size files, create files, and maintain file definitions. FILE entries are also used in mapping views (including COBOL views) to Model 204 data.

Used by File Management, Workshop/204 Query/Update, Workshop/204 Screen and Action Generator, PC/204, PC/204., Access/204 View Management, PC Volume Management

Defined in File Management

System attributes

ENTITY	Value must be FILE.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Model 204 file name. The name must begin with a character and can be from 1 to 8 characters long.

ADD LEVEL	Default field security level for adding occurrences of a field for a file. Corresponds to the Model 204 file parameter ADDLVL. The value is between 0 and 255 or null. The File Management default is the Model 204 default, 0.
ASIZE	Number of pages in Table A of this file. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 3.
ASTRPPG	Number of Table A strings per page. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 400.
ATRPG	Number of Table A pages for field names. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 1.
AVG PROC NAME LEN	Average length of procedure names. File Management uses this or the actual lengths of procedure names for the procedure entries related to this file. The value is an integer or null. The File Management default is 20.
AVG PAGES PER PROC	Average number of pages in a procedure. The value is used by File Management to calculate space for procedures. The value is an integer or null. The File Management default is 1.
BEXTOVFL	Extra overflow pages are in Table B for sorted files. The value is expressed in Model 204 pages. The value is an integer; the default is null. Used by File Management.
BPGPMSTR	Master area in Table B for sorted files, expressed as Model 204 pages. The value is an integer; the default is null. Used by File Management.
BPGPOVFL	Master overflow area in Table B for sorted files, expressed as Model 204 pages. The value is an integer; the default is null. Used by File Management.
BRECPPG	Maximum number of records per Table B page. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 256.
BRESERVE	Number of bytes of space to reserve on a Table B page. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 17.
BREUSE	Percentage of space that must be available on a Table B page beyond BRESERVE for the page to be placed on the reuse queue. Applies only to files that are designated RRN (reuse record number). The File Management default is the Model 204 default, 20.
BSIZE	Number of Table B pages for this file. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 5.

CSIZE	Number of Table C pages for this file. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 1.
DATA SET NAME	Name the operating system uses for this file. Multiply occurs for each physical file that makes up this Model 204 file.
DDNAME	Also known as file name, this is a multiply occurring value, one for each physical file that makes up this Model 204 file.
DEVICE TYPE	Device type for this file. The value is 2311, 2314, 3330, 3340, 3350, 3370, 3375, 2305-2, or 3380, or null. If the value is null or invalid, File Management calculates TOT SPACE TRKS if there is only one data set.
DPGSRES	Number of pages in Table D to be reserved for use in alerting Model 204 of a table full condition. The value is an integer; the File Management default is the Model 204 default: the smaller of (DSIZE/50 + 2) or 40.
DRESERVE	Percentage of space to reserve for expansion of Table D pages. The File Management default is the Model 204 default, 15.
DSIZE	Number of Table D pages for this file. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 15.
FICREATE	Specifies which release of Model 204 the file was created under. The value is the Model 204 release number. This value is used by File Management.
FILE OPTIONS	Value corresponds to the Model 204 FOPT parameter. The value is the sum of: X'80' — Prohibit statement numbers in procedures X'40' — Prohibit statement labels in procedures X'08' — Append first if RDFS X'02' — Disable lock pending updates X'01' — Only file managers define fields or: null — None of the above The File Management default is the Model 204 default, null.

FILEORG		Indicates the primary organization of the file. Corresponds to the Model 204 FILEORG parameter. For Release 9.0 files, the value is the sum of the options selected from:
		X'40' — Skewing enabled (obsolete feature) X'20' — Unordered X'08' — Hash X'04' — RDFS - Reuse Record Number X'02' — Sort or hash key required for every record X'01' — Sorted
		or:
		Default: X'00' (entry order)
		For pre-Release 9.0 files, the value is the sum of the options selected from:
		X'08' — hash X'04' — RDFS - Reuse Record Number X'02' — Sort or hash key required for every record X'01' — Sorted X'00' — Entry order
		or:
		X'14' — RDFS, entry order, reuse record number
		The default is X'00' (entry order).
FITRANS		Indicates whether the file supports floating point data storage. The values are:
		4 — File does not support floating point data storage. Created in Release 7.1 or earlier format and not transformed by the TRANSFORM FLOAT command.
		5 — File supports floating point data storage. File is either a Release 7.1 or earlier format file that has been transformed by the TRANSFORM FLOAT command, or file was created under Release 8.0 or later and supports floating point data storage.
FM OPTION		These values set the possible command execution modes for File Management:
		IN — INACTIVE
		AI — ACTIVE IMMEDIATELY
		AD — ACTIVE DELAYED, GENERATE COMMANDS ONLY
FORMAT FILE		Option of CREATE command, specifies if file storage area is to be formatted when creating a file. The File Management default is Y.

FRCVOPT	The FRCVOPT parameter controls the file recovery option. The value is the sum of:
	X'80' — No updates if roll forward logging inactive X'40' — No updates if checkpointing inactive X'20' — No participation in checkpointing X'10' — Discontinuities not allowed) X'08'— Disables the backout mechanism of transaction backout X'04' — No participation in roll forward logging X'02' — No participation in roll forward X'01' — Roll forward all the way
	or:
	Default: X'00'.
FREESIZE	Number of unassigned pages in the file. The value is an integer or null. The File Management default is 0.
FVFPG	Number of Table A pages for few-valued field values. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 1.
IVERIFY	Option of CREATE command, specifies if file storage area is to be verified to be error free when initializing the file. The Model 204 default is N.
MVFPG	Number of Table A pages for many-valued field values. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 1.
NUMBER OF PROCS	Expected number of procedures to be stored in the file. File Management uses this value or takes the sum of the related PROCEDURE entries, whichever is greater.
NUMBER OF RECORDS	Expected number of records for this file. The value is an integer. 0 means that this is a file with only procedures. File Management requires a value.
OPENCTL	Open control parameters determines whether or not a password must be entered when opening the file. The value is one of the following:
	X'80' — Public X'40' — Semipublic Z'00' — Private
	The value X'20' can be added to any of the values above to implement record security.
	The File Management default is the Model 204 default, X'80' (public).
PAGE SIZE	Page size of Model 204 pages. The value is 3368, 3624, 6184, or 7208. The File Management default is 6184.

PDSIZE	Number of contiguous pages in the procedure dictionary in Table D. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 3.
PDSTRPPG	Maximum number of procedure entries per procedure page. The value is calculated by the File Management facility. The File Management default is the Model 204 default, 128.
PRCLDEF	Default user class for procedures in a public or semipublic file. The value is between 0 and 255 or null. The File Management default is the Model 204 default, 0.
PRIVDEF	Default user privileges for a public or semipublic file. Valid settings of PRIVDEF are (options can be summed): X'8000' — File manager. X'4000' — Allow record security override. X'2000' — Allow updating of data with ad hoc queries. X'1000' — Allow changes, other than deletions, to internal procedures. X'0800' — Allow updating of data with internal procedures. X'0400' — Allow retrieval of data with ad hoc requests. X'0200' — Allow display, echoing, and copying of internal procedures. X'0100' — Allow retrieval of data with internal procedures. X'0080' — Allow updating of data with external procedures. X'0040' — Allow retrieval of data with external procedures. X'0020' — Allow INCLUDE of internal procedures. X'0010' — Allow definition of internal procedures. X'0008' — Allow deletion of internal procedures. X'0001' — Allow viewing of file parameters. The default is X'BFFF'.
READ LEVEL	Default field security level for read access. Corresponds to the Model 204 file parameter READLVL. The value is between 0 and 255 or null. File Management default is the Model 204 default, 0.
SECTY	Type of security in effect for a file. Corresponds to the Model 204 file parameter SECTY. The default is X'00'.
SELECT LEVEL	Default field security level for select (or FIND) for a file. Corresponds to the Model 204 file parameter SELLVL. The value is between 0 and 255. The File Management default is the Model 204 default, 0.
TOT SPACE PGS	Total space required for the file in pages. The value is calculated by the File Management facility.
TOT SPACE TRKS	Total space required for the file in tracks. File Management calculates this value, if only one valid DEVICE TYPE was specified.

UPDATE LEVEL	Default field security level for update access to the file. Corresponds to the Model 204 file parameter UPDTLVL. The value is between 0 and 255. The File Management default is the Model 204 default, 0.
WGTD RECORD LENGTH	Weighted record length for all records in this file, based on their frequency of occurrence in this file. The value is an integer. The value is calculated by the File Management facility.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

Cross-Reference	FIELD GROUP entries. Indicates the field groups for this file. Required by File Management.
Cross-Reference	FIELD entries. Indicates the fields for this file. Required by File Management.
Cross-Reference	RECORD entries. Indicates the records that are stored in this file. Used by File Management.
Cross-Reference	PC VOLUME. Indicates that the Model 204 file has been formatted for use by the PC Volume Management facility.
HASH KEY	FIELD. Indicates the hash key for the file.
SORT KEY	FIELD. Indicates the sort key for the file.
RECSCTY	FIELD. Indicates the record security for the file.
HAS STAGED	STAGED FILE. Indicates that the file has a staged file definition. Used by File Management.
HAS STAGED	STAGED FIELD. Indicates that the file has a staged field pending. Used by File Management.

HAS STAGED	STAGED FIELD GROUP. Indicates that the file has a staged field group. Used by File Management.
HAS STAGED	STAGED RECORD. Indicates that the file has a staged RECORD. Used by File Management

Relationships

Cross-Reference	GROUP entries. Indicates the groups to which this file belongs. Not required.

Referenced by

```
Entity Type         Relationship

SUBSYSTEM           USES PROC, USES DATA
VIEW                MAPS TO
COBOL VIEW          MAPS TO
GROUP               HAS PROC, HAS UPDT
PAINTER DEFAULTS    USES PROC
PROCEDURE           STORED IN, USES
```

GROUP

One GROUP entry exists for each Model 204 group. This entry identifies the Model 204 attributes of the group. GROUP entries are usually used to describe permanent groups. PC/204 and Screen and Action Generator use GROUP entries in mapping views to Model 204 data.

Used by PC/204, Workshop/204, Screen and Action Generator

Defined in Documentation facility

System attributes

ENTITY	Value must be GROUP.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Name of the group. The name must begin with a letter and can be from 1 to 8 characters long.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.
BLDGFT Y/N	Specifies whether or not an internal field name table is to be built for this group. The value is Y or N.
PERM Y/N	Specifies whether or not this group is permanent. The value is Y or N.
PRIVDEF	Default user privileges for a public or semipublic group. The value is the sum of values allowed for the PRIVDEF attribute of the FILEs in the group plus two values: X'0004' — Allow updating of data with procedures from the procedure file. X'0002'— Allow retrieval of data with procedures from the procedure file.
OPENCTL	Same values as the OPENCTL attribute for FILE. The OPEN CONTROL parameter determines whether or not a password must be entered when opening a GROUP.

System relationships

None.

Relationships

Cross-Reference	FILE entries. Indicates that these files are part of this group.
HAS PROC	FILE entry. Specifies the procedure file for this group.
HAS UPDT	FILE entry. Specifies the file to be updated when records are added to this group.

Referenced by

```
Entity Type    Relationship
```

```
PROCEDURE        USES
SUBSYSTEM        USES
VIEW             MAPS TO
```

PAINTER DEFAULTS

One PAINTER DEFAULTS entry exists for each set of defaults corresponding to a set of Screen Painter screens. The defaults specify the color and display options for screen items: titles, prompts, and input items for READs, REREADs, and PRINTs. When using Screen Painter, you can request that the defaults for a screen be taken from a named PAINTER DEFAULTS entry. If no default set is named, attributes are taken from the entry named DEFAULT, which is defined when Screen Painter is installed.

Used by Workshop/204 Screen Painter

Defined in Documentation facility

System attributes

ENTITY	Value must be PAINTER DEFAULTS.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Name of the set of default attributes that Screen Painter users can apply to screen items.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.
INPUT PRINT COLOR	Color of an input item on a PRINT SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.

INPUT PRINT OPTION	Display option used for an input item on a PRINT SCREEN statement. The value is BLINK, REVERSE, INVISIBLE, or UNDERSCORE. INVISIBLE cannot be chosen in conjunction with any color.
INPUT READ COLOR	Color of an input item on a READ SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
INPUT READ OPTION	Display option of an input item on a READ SCREEN statement. The value is BLINK, BLINK PROTECTED, REVERSE, REVERSE PROTECTED, UNDERSCORE, UNDERSCORE PROTECTED, or INVISIBLE. INVISIBLE cannot be chosen in conjunction with any color.
INPUT RREAD COLOR	Color of an input item on a REREAD SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
INPUT RREAD OPTION	Display option of an input item on a REREAD SCREEN statement. The value is BLINK, BLINK PROTECTED, REVERSE, REVERSE PROTECTED, UNDERSCORE, UNDERSCORE PROTECTED, or INVISIBLE. INVISIBLE cannot be chosen in conjunction with any color.
PROMPT PRINT COLOR	Color of a prompt item on a PRINT SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
PROMPT PRINT OPTION	Display option of a prompt item on a PRINT SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
PROMPT READ COLOR	Color of a prompt item on a READ SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
PROMPT READ OPTION	Display option of a prompt item on a READ SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
PROMPT RREAD COLOR	Color of a prompt item on a REREAD SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
PROMPT RREAD OPTION	Display option of a print item on a REREAD SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
TAG CHAR	Character to be used to tag lines with errors. The value is a single character.
TAG COLOR	Color of the tagged field. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.

TAG OPTION	Display option of the tagged field. The value is BLINK, REVERSE, or UNDERSCORE.
TITLE PRINT COLOR	Color of the title on a PRINT SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
TITLE PRINT OPTION	Display option of the title on a PRINT SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
TITLE READ COLOR	Color of the title on a READ SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
TITLE READ OPTION	Display option of the title on a READ SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
TITLE RREAD COLOR	Color of the title on a REREAD SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
TITLE RREAD OPTION	Display option of the title on a REREAD SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.

Note: In all cases the default is the Model 204 SOUL default.

System relationships

USES PROC	FILE entry to indicate where screens built with this set of defaults are stored. Required by Screen Painter.
USED IN	SCREEN entries to indicate the screens that were built with this set of defaults. Updated by Screen Painter.

Relationships

None.

PC DRIVE

There is one PC DRIVE entry for each simulated disk drive to be used when uploading or downloading data through PC/204 or PC/Workshop/204.

Used by PC/204, PC/Workshop/204.

Defined in PC Volume Management

System attributes

ENTITY	Value must be PC DRIVE.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Identifies the PC DRIVE.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

Cross-Reference	PC VOLUME. This reference indicates that this PC DRIVE has a PC VOLUME (Model 204 file) allocated to it.

Relationships

None.

PC VOLUME

One PC VOLUME entry exists for each Model 204 file to be used when uploading or downloading data through PC/204 or PC/Workshop/204. A Model 204 file appears to be a volume during the upload or download process.

Used by PC/204, PC/Workshop/204.

Defined in PC Volume Management

System attributes

ENTITY	Value must be PC VOLUME.
CREATE DATE	Date the entry was created

LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Identifies the PC VOLUME.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
KEYWORD	Keywords used to retrieve this entry and related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

Cross-Reference	PC DRIVE. States that a simulated volume is attached to or mounted on a simulated disk drive.
Cross-Reference	FILE. States that the FILE has been formatted for use as this PC VOLUME.

Relationships

None.

PROCEDURE

One PROCEDURE entry exists for each Model 204 procedure. The File Management facility uses these entries in sizing to calculate PDSIZE and PDSTRPPG. Screen Painter and Screen and Action Generator store a PROCEDURE entry when they create a procedure. The Procedure Editor maintains these entries when procedures are defined or edited.

You can also use PROCEDURE entries to describe the Procedure Access Control Table for a Model 204 file by defining one entry per entry in the table.

Used by File Management, Workshop/204 Screen Painter, Workshop/204 Screen and Action Generator, Workshop/204 Procedure Editor and Single-Step Test, PC/204, PC/Workshop/204.

Defined in Workshop/204 Screen Painter, Workshop/204 Screen and Action Generator, Workshop/204 Procedure Editor and Single-Stop Test, PC/204, PC/Workshop/204.

System attributes

ENTITY	Value must be PROCEDURE.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Model 204 name of the procedure (or the Procedure Access Control Table entry name). The name is composed of the Model 204 file name concatenated with a period followed by the procedure name (that is, the UNQUALIFIED NAME). The name must begin with a character and cannot exceed 70 characters (excluding the file name component). The format is: *<file_name.procedure_name>* (See the UNQUALIFIED NAME definition below.)
UNQUALIFIED NAME	Name of this field without the file name prefix. This name need not be unique within the PROCEDURE entity type. This is the same as the Model 204 procedure name.
PCLASS	If this entry describes a procedure, this attribute specifies the procedure class to which the procedure belongs. The value is an integer between 1 and 255. (PCLASS is system-controlled only if Workshop/204 is installed; otherwise it is a user-controlled attribute.) If this entry describes a Procedure Access Control Table entry, it specifies the procedure class to which users in the UCLASS user class have ACCESS privileges.
LENGTH	Length of the procedure in bytes
OBJECT UPDATE DATE	Date of the last update of the procedure in the procedure file. The date is stored in julian date format, YYDDD. This attribute is updated by all facilities that store PROCEDURE entries.
OBJECT UPDATE TIME	Time of the last update of the procedure in the procedure file. The date is stored in HH:MM:SS format. This attribute is updated by all facilities that store PROCEDURE entries.

ACTION TYPE	Types of actions (procedures) that can be generated by Screen and Action Generator:
DRIVER	Implies the ability to query, display, add, update (modify), or delete data from a view by including other procedures that perform these actions. The driver specifies the types of actions allowed by the procedure it includes in the ACTION SUPPORTED attribute.
QUERY	Implies the ability to query or add to the data in the view.
DISPLAY	Implies the ability to display, update (modify), or delete the data in the view. For procedures generated by Screen and Action Generator, the facility supplies the ACTION TYPE value (the type of action that was generated).
ACTION SUPPORTED	This attribute occurs in the dictionary only if Workshop/204 is installed. The value occurs only when ACTION TYPE=DRIVER. The value indicates what can be done with this driver. The value can be: QUERY DISPLAY ADD UPDATE DELETE There can be multiple values if more than one type of action is supported. The system supplies the values for procedures created by Screen and Action Generator.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.
ACCESS	If this entry describes a procedure, the value is null. If this entry describes a Procedure Access Control Table entry, this attribute specifies the access privileges for users in the UCLASS user class to procedures in the PCLASS procedure class. The value is NONE, or a combination of USE, COPY, CHANGE, DEFINE, and DELETE. Multiple values can be separated by commas, blanks, or entered on separate lines.

UCLASS	If this entry describes a procedure, the value is null. If this entry describes a Procedure Access Control Table entry, this attribute specifies the user class with ACCESS access privileges to procedures in the PCLASS procedure class. The value is an integer between 1 and 255.

System relationships

DEFINES	SCREEN entry. Specifies the screen that is defined in this procedure. Updated by Screen Painter.
PROCESSES	VIEW entry. Identifies the view for which data is retrieved, added, updated, or deleted. This relationship is present only if Workshop/204 is installed.
USES	SCREEN entries. Indicates the screens that are used by this procedure.
STORED IN	FILE entry. Indicates the file in which the procedure is stored. Used by File Management, updated by the DDGEN utility, and updated by Workshop/204 Screen Painter and Workshop/204 Procedure Editor.

Relationships

WRITTEN BY	ACCOUNT entry. Identifies the account name of the person who wrote the procedure.
USES	FILE entries. Specifies that the files are used (read or updated) by this procedure.
USES	GROUP entries. Specifies the groups that are used (read or updated) by the procedure.
USES	PROCEDURE entries. Identifies the procedure used by the DRIVER procedure to perform the action specified in the ACTIONS SUPPORTED attribute. There can be multiple occurrences of this relationship, one for each supported action. This relationship is present only if Workshop/204 is installed.
INCLUDES	PROCEDURE entries. Specifies the procedures that are INCLUDEd by this procedure.

Referenced by

```
Entity Type       Relationship

PROCEDURE         INCLUDES
SUBSYSTEM         USES ERROR, USES INIT, USES LOGIN
```

RECORD

One RECORD entry exists for each type of record in every Model 204 file. There is one RECORD entry for Model 204 files that have only one record type to describe that record type. File Management uses RECORD entries to calculate file sizes and to describe record layouts. Screen and Action Generator uses RECORD entries to generate views.

Used by   File Management, Access/204 View Management, PC/204, Workshop/204 Screen and Action Generator

Defined in   File Management, PC Volume Management

System attributes

ENTITY	Value must be RECORD.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Model 204 file name concatenated with a period and followed by the name of this record type (that is, the UNQUALIFIED NAME). The record name must begin with a character and cannot exceed 70 characters (excluding the file name component). The format is: *file_name.record_name* (See the UNQUALIFIED NAME definition below.)
UNQUALIFIED NAME	Name of this record without the file name prefix. This name need not be unique within the RECORD entity type. This is the same as the Model 204 record name.
AVERAGE LENGTH	Average length of the RECORD.
PERCENT INCREASE	Percentage of expected increase for records of this type. The value is an integer. Used by File Management in file sizing.
NUMBER OF RECORDS	Expected number of records of this type for the file. The value is an integer. Used by File Management in file sizing.
PERCENT RATE	Percentage of the records in the file that are of this type. The value is an integer. Used by File Management to weight this record length.

RECTYPE ID	Used to indicate the field and values that can uniquely identify records of this type. For example, in a personnel file the field REC distinguishes record types. The field=value pair REC=E marks EMPLOYEE records and the field=value pair REC=D marks EMPLOYEE DEPENDENTS records. The value is specified as a field=value pair. A redundant relationship is maintained also for documentation and impact analysis. The format is FIELDNAME=VALUE.
	Single-valued: no operations other than <=> are supported. Only one occurrence of this attribute is supported.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

Cross-Reference	FIELD GROUP entries. Specifies the field groups that are in records of this type. Used by File Management and Access/204 View Management.
Cross-Reference	FIELD entries. Specifies the fields that are in records of this type. Used by File Management.
Cross-Reference	FILE entry. Specifies the file in which records of this type occur. File Management uses this relationship.
RECTYP ID	FIELD entry, the values of which identify record types. This is redundant information with the record attribute RECTYPE ID.
UNIQUE ID	FIELD entry. States that the field participates in uniquely identifying record occurrences of a given record type.
HAS STAGED	STAGED FIELD. Indicates that the record has a staged field definition. Used by File Management.
HAS STAGED	STAGED FIELD GROUP. Indicates that the record has a staged field group definition. Used by File Management.

HAS STAGED	STAGED RECORD. Indicates that the record has a staged record definition. Used by File Management.

Relationships

None.

Referenced by

```
Entity Type        Relationship

VIEW               MAPS TO
```

SCREEN

One SCREEN entry exists for each Model 204 screen created and maintained through Screen Painter or Screen and Action Generator.

Used by Workshop/204 Screen Painter, Workshop/204 Screen and Action Generator

Defined in Workshop/204 Screen Painter, Workshop/204 Screen and Action Generator

System attributes

ENTITY	Value must be SCREEN.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Name of the screen.
INPUT PRINT COLOR	Color of an input item on a PRINT SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
INPUT PRINT OPTION	Display option used for an input item on a PRINT SCREEN statement. The value is BLINK, REVERSE, INVISIBLE, or UNDERSCORE. INVISIBLE cannot be chosen in conjunction with any color.
INPUT READ COLOR	Color of an input item on a READ SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.

INPUT READ OPTION	Display option of an input item on a READ SCREEN statement. The value is BLINK, BLINK PROTECTED, REVERSE, REVERSE PROTECTED, UNDERSCORE, UNDERSCORE PROTECTED, or INVISIBLE. INVISIBLE cannot be chosen in conjunction with any color.
INPUT RREAD COLOR	Color of an input item on a REREAD SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
INPUT RREAD OPTION	Display option of an input item on a REREAD SCREEN statement. The value is BLINK, BLINK PROTECTED, REVERSE, REVERSE PROTECTED, UNDERSCORE, UNDERSCORE PROTECTED, or INVISIBLE. INVISIBLE cannot be chosen in conjunction with any color.
NUMBER OF ITEMS	Number of title, prompt, and input items. The value is an integer.
OBJECT UPDATE DATE	Part of the time stamp that notes differences between the screen definition procedure and the definition of the PROCEDURE entry that defines the screen. The value is the Julian date YYDDD and is supplied by the system.
OBJECT UPDATE TIME	Part of the time stamp that notes differences between the screen definition procedure and the definition of the PROCEDURE entry that defines the screen. The value is based on the 24-hour clock in the following form: HH:MM:SS. The value is supplied by the system.
PROMPT PRINT COLOR	Color of a prompt item on a PRINT SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
PROMPT PRINT OPTION	Display option of a prompt item on a PRINT SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
PROMPT READ COLOR	Color of a prompt item on a READ SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
PROMPT READ OPTION	Display option of a prompt item on a READ SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
PROMPT RREAD COLOR	Color of a prompt item on a REREAD SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
PROMPT RREAD OPTION	Display option of a print item on a REREAD SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
TAG CHAR	Character to be used to tag lines with errors. The value is a single character.

TAG COLOR	Color of the tagged field. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
TAG OPTION	Display option of the tagged field. The value is BLINK, REVERSE, or UNDERSCORE.
TEXT	Text of the entire screen (23 lines/1 line per occurrence) as typed by user. The value is character string.
TITLE PRINT COLOR	Color of the title on a PRINT SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
TITLE PRINT OPTION	Display option of the title on a PRINT SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
TITLE READ COLOR	Color of the title on a READ SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
TITLE READ OPTION	Display option of the title on a READ SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
TITLE RREAD COLOR	Color of the title on a REREAD SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
TITLE RREAD OPTION	Display option of the title on a REREAD SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.

Note: The default values are taken from the PAINTER DEFAULTS entry.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

HAS	SCREEN ITEM entries. Indicates the screen items that are part of this screen. Used by Screen Painter and Screen and Action Generator.
MAPS TO	VIEW. Specifies the view from which the screen was generated and named. Used by Screen and Action Generator.

Relationships

None.

Referenced by

```
Entity Type          Relationship

PAINTER DEFAULTS     USED IN
PROCEDURE            USES, DEFINES
```

SCREEN ITEM

One SCREEN ITEM entry exists for each title, prompt, and input item on screens defined through Screen Painter or Screen and Action Generator.

Used by Workshop/204 Screen Painter, Workshop/204 Screen and Action Generator

Defined in Workshop/204 Screen Painter, Workshop/204 Screen and Action Generator

System attributes

ENTITY	Value must be SCREEN ITEM.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Screen item name preceded by the screen name and a period. The format is: <screen_name.screen_item_name>.
Note:	The following are System Attributes only if Workshop/204 is installed; otherwise they are non-system attributes.
COLUMN	Starting column position for this screen item.
DEFAULT VAL	Default value for an input screen item. Used by Screen Painter and Screen and Action Generator.

DOMAIN	Type of an input field. The value is CHARACTER (all characters allowed), ALPHABETIC (only letters A-Z allowed), or NUMERIC (only digits 0-9 allowed).
ITEM NUMBER	Unique number for this item on this screen generated by Screen Painter.
ITEM REQUIRED	For screens created by Screen and Action Generator, this screen item cannot be renamed or deleted, for example, screen items such as MSG, CMD line, and PF keys. Screen and Action Generator requires these screen items. The values can be Y or the null value, if the item is not required.
ONEOF	List of the valid values for this screen item.
PRINT COLOR	Color of a screen item on a PRINT SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
PRINT OPTION	Display option of a screen item on a PRINT SCREEN statement. The value is BLINK, REVERSE, INVISIBLE, or UNDERSCORE.
RANGE END	Repeating field of the maximum permissible values for this input item.
RANGE START	Repeating field of the minimum permissible values for this input item.
READ COLOR	Color of a screen item on a READ SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
READ OPTION	Display option of a screen item on a READ SCREEN statement. The value is BLINK, BLINK PROTECTED, REVERSE, REVERSE PROTECTED, UNDERSCORE, UNDERSCORE PROTECTED, or INVISIBLE.
REQUIRED	Specifies that a value is required for this input item. The value is Y or N.
ROW	Row position of this item on the screen.
RREAD COLOR	Color of the screen item on a REREAD SCREEN statement. The value is BRIGHT, BLUE, GREEN, PINK, RED, TURQUOISE, WHITE, or YELLOW.
RREAD OPTION	Display option of a screen item on a REREAD SCREEN statement. The value is BLINK, REVERSE, or UNDERSCORE.
TEXT	Text for this screen item as typed by a user.
VERIFY	List of characters that are valid for this input item.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

None.

Relationships

MAPS TO	VIEW FIELD. Specifies the screen item that was generated from the named view field. Used by Screen and Action Generator. This relationship is present only if Workshop/204 is installed.

Referenced by

```
Entity Type      Relationship

SCREEN           HAS
```

STAGED FIELD

STAGED FIELD entries are used by File Management to stage changes to Model 204 fields.

Used by File Management

Defined in File Management

STAGED FIELD has all the attributes and references that FIELD has; in addition, it has the following attributes and references:

System attributes

ENTITY	Value must be STAGED FIELD.
COMMAND	Model 204 or Dictionary/204 command that is to be executed for this STAGED FIELD entry
COMMAND STATE	State of the command for this STAGED FIELD entry. The value can be: • PENDING — Command is staged for execution; valid only for FM OPTION=AD (batch mode) • $STATUS — One of several return codes from the executed command

Referenced by

```
Entity Type          Relationship

STAGED FIELD GROUP  DELLINK
STAGED RECORD       DELLINK
STAGED FILE         HAS STAGED
STAGED RECORD       HAS STAGED, RECTYPE ID, UNIQUE ID
STAGED FIELD GROUP  HAS STAGED
FILE                HAS STAGED
RECORD              HAS STAGED, RECTYP ID, UNIQUE ID
FIELD GROUP         HAS STAGED
FILE                SORT KEY, HASH KEY, RECSCTY
```

STAGED FIELD GROUP

STAGED FIELD GROUP entries are used by File Management to stage changes to Model 204 field groups.

Used by File Management

Defined in File Management

STAGED FIELD GROUP has all the attributes and references that FIELD GROUP has; in addition, it has the following attributes and references.

System Attributes

ENTITY	Value must be STAGED FIELD GROUP.
COMMAND	Command that is to be executed for this STAGED FIELD GROUP entity

COMMAND STATE	State of the command for this STAGED FIELD GROUP. The value can be:
	• PENDING — Command staged for execution, only valid for FM OPTION=AD (batch mode)
	• $STATUS — One of several return codes from the executed command

System relationships

STAGED TO	FIELD. Indicates that the field group contains the specified field. Used by File Management.
DELLINK	FIELD. Indicates that this field is no longer a part of the staged field group.
HAS STAGED	STAGED FIELD. Indicates that this staged field group contains this staged field. Used by File Management.

Referenced by

```
Entity Type       Relationship

FILE              HAS STAGED
RECORD            HAS STAGED
STAGED FILE       HAS STAGED
STAGED RECORD     HAS STAGED
```

STAGED FILE

STAGED FILE entries are used by File Management to stage changes the Model 204 files.

Used by File Management

Defined in File Management

STAGED FILE has all the attributes and references that FILE has in addition, it has the following attributes and references.

System attributes

ENTITY	Value must be STAGED FILE.
COMMAND	Command name that is to be executed for this STAGED FILE entry

COMMAND STATE	State of the command for this STAGED FILE entry. The value can be:

- PENDING — Command staged for execution, only valid for FM OPTION=AD (batch mode)
- $STATUS — One of several return codes from the executed command

System relationships

HAS STAGED	STAGED FIELD. Indicates that this staged field is part of the staged file. Used by File Management.
HAS STAGED	STAGED FIELD GROUP. Indicates that this staged field group is part of the staged file. Used by File Management.
HAS STAGED	STAGED RECORD. Indicates that this staged record is part of the staged file. Used by File Management.
SORT KEY	STAGED FIELD. Indicates that this staged field is a special field type contained in the STAGED FILE. Used by File Management.
HASH KEY	STAGED FIELD. Indicates that this staged field is a special field type contained in the STAGED FILE. Used by File Management.
RECSCTY	STAGED FIELD. Indicates that this staged field is a special field type contained in the STAGED FILE. Used by File Management.

Referenced by

```
Entity Type      Relationship

FILE             HAS STAGED
```

STAGED RECORD

STAGED RECORD entries are used by File Management to stage changes to Model 204 records.

Used by File Management

Defined in File Management

STAGED RECORD has all the attributes and references that RECORD has; in addition, it has the following attributes and references.

System attributes

ENTITY	Value must be STAGED RECORD.
COMMAND	Command name that is to be executed for this STAGED RECORD entry
COMMAND STATE	State of the command for this STAGED RECORD entry. The value can be: • PENDING — Command not executed yet, only valid for FM OPTION=AD • $STATUS — Return code from the executed command.

System relationships

HAS STAGED	STAGED FIELD. Indicates that this staged field is part of the staged record. Used by File Management.
HAS STAGED	STAGED FIELD GROUP. Indicates that this staged field group is part of the staged record. Used by File Management.
STAGED TO	FIELD GROUP. Indicates that this field group is part of the staged record. Used by File Management.
STAGED TO	FIELD. Indicates that this field is part of the staged record. Used by File Management.
DELLINK	FIELD. Indicates that this field is no longer a part of the staged record.
RECTYP ID	STAGED FIELD. Indicates that this staged record will contain this field. Used by File Management. UNIQUE ID STAGED FIELD. Indicates that the staged field is part of the UNIQUE ID for the staged record. Used by File Management.

Referenced by

```
Entity Type       Relationship

STAGED FILE       HAS STAGED
FILE              HAS STAGED
RECORD            HAS STAGED
UNIQUE ID         STAGED FIELD
```

SUBSYSTEM

One SUBSYSTEM entry exists for each Model 204 subsystem. This entry describes the operational parameters, procedure specifications, and files of the subsystem.

Used by   Subsystem Management, Single-Step Test

Defined in   Subsystem Management

For more information about the Subsystem Management facility, see the Rocket Model 204 documentation wiki:

http://m204wiki.rocketsoftware.com/index.php/System_requirements_for_Application_Subsystems#Overview_of_the_Subsystem_Management_facility

System attributes

ENTITY	Value must be SUBSYSTEM.
CREATE DATE	Date the entry was created
LAST UPDATED	Date the entry was last updated
UPDATED-BY	Account that last updated this entry
NAME	Name of the subsystem.
AUTO COMMIT	Specifies whether or not a COMMIT statement is to be executed automatically after each subsystem procedure is executed. The value is Y or N. The default is N.
AUTO LOGIN	Specifies whether or not a user is to be automatically logged on to Model 204, when a subsystem is entered using the subsystem name as the Model 204 account name. The value is Y or N.
AUTO LOGOUT	Specifies whether or not a user is to be automatically logged out of Model 204 when exiting the subsystem. The value is Y or N.
AUTO START	Specifies whether or not the subsystem is to be automatically started when it is invoked by the first user. The value is Y or N. The default is N.
COMM VARIABLE	Name of the global variable that is used to specify the name of the next procedure to be invoked in this subsystem.
COMMAND LINE VARIABLE	Name of the global variable into which the parameters are passed when the subsystem is invoked.
DISCONNECT MSGS	Specifies whether or not DISCONNECT messages are to be displayed to the user. The value is Y or N.
ERROR MSGS	Specifies whether or not error messages are to be displayed to the user. The value is Y or N.
ERROR VARIABLE	Name of the global variable that is set on an error condition in this subsystem.
EXIT	Value of the communication variable (COMM VARIABLE) that causes the user to exit the subsystem.

INFO MSGS	Specifies whether or not information messages are to be displayed to the user. The value is Y or N.
LOCK FILES	Specifies whether or not the files and groups defined to the subsystem are to be locked while the subsystem is in operation. The value is Y or N.
PRECOMPILE PREFIX	Prefix of the procedures that are to be precompiled and stored on CCATEMP when the procedures are first included by the subsystem.
NONPRECOMPILE PREFIX	Prefix of the procedures that cannot be precompiled by the subsystem.
STATUS	Status of subsystem that controls the user privileges granted when the subsystem is invoked. The value is PUBLIC, SEMI-PUBLIC, or PRIVATE.

Attributes

SHORT DESCRIPTION	Brief description of this entry. This description is the display header when Dictionary/204 reports on the entry. The limit is 64 characters.
DESCRIPTION	Longer description of this entry. This description provides more detail than the short description in the header. There is no limit on the numbers of lines of text.
KEYWORD	Keywords used to retrieve this entry along with related entries. There is no limit on the number of keywords you can specify. The limit for each keyword is 50 characters.
ALIAS	Alternate names for this entry when browsing. There is no limit to the number of aliases you can use. The limit for each alias is 50 characters.

System relationships

USES PROC	FILE entry. Specifies the subsystem procedure file.
USES DATA	FILE entries. Specifies the subsystem data files.
USES	GROUP entries. Specifies the subsystem groups.
USES ERROR	PROCEDURE entry. Specifies the procedure that is to be INCLUDEd in case of subsystem error.
USES INIT	PROCEDURE entry. Specifies the procedure that is to be INCLUDEd when the subsystem is initialized.
USES LOGIN	PROCEDURE entry. Specifies the procedure that is to be INCLUDEd when a user invokes the subsystem.
Cross-Reference	FACILITY. Specifies the Dictionary/204 or Workshop/204 facility that corresponds to this subsystem.

Relationships

None.

VIEW

See "Defining view entries" on page 38 for the definition of this entity type.

VIEW FIELD

See "Defining view entries" on page 38 for a definition of this entity type.

VIEW LINK

See "Defining view entries" on page 38 for a definition of this entity type.

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