

# Entire System Server

## User's Guide

Version 3.8.1

October 2025

This document applies to Entire System Server Version 3.8.1 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

Copyright © 1987-2025 Software GmbH, Darmstadt, Germany and/or its subsidiaries and/or its affiliates and/or their licensors.

The name Software AG and all Software GmbH product names are either trademarks or registered trademarks of Software GmbH and/or its subsidiaries and/or its affiliates and/or their licensors. Other company and product names mentioned herein may be trademarks of their respective owners.

Detailed information on trademarks and patents owned by Software GmbH and/or its subsidiaries is located at <https://softwareag.com/licenses>.

Use of this software is subject to adherence to Software GmbH's licensing conditions and terms. These terms are part of the product documentation, located at <https://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

This software may include portions of third-party products. For third-party copyright notices, license terms, additional rights or restrictions, please refer to "License Texts, Copyright Notices and Disclaimers of Third-Party Products". For certain specific third-party license restrictions, please refer to section E of the Legal Notices available under "License Terms and Conditions for Use of Software GmbH Products / Copyright and Trademark Notices of Software GmbH Products". These documents are part of the product documentation, located at <https://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

Use, reproduction, transfer, publication or disclosure is prohibited except as specifically provided for in your License Agreement with Software GmbH.

**Document ID: NPR-USERSGUIDE-381-20251004**

## Table of Contents

1 About this Documentation .....	1
Document Conventions .....	2
Online Information and Support .....	2
Data Protection .....	3
2 User's Guide .....	5
3 Introduction .....	7
Contents of this Documentation .....	8
System Overview .....	8
How the Entire System Server Works .....	9
How to Access Operating System Services .....	11
How a Natural User Benefits from the Entire System Server .....	11
Integration .....	12
4 Getting Started .....	15
Syntax Used to Access Entire System Server .....	16
Using Entire System Server in a Multi-Computer Environment .....	19
Using Entire System Server Update View Processors .....	19
Examples .....	23
5 Online Tutorial .....	31
Online Tutorial Menu .....	32
Online Tutorial Function Keys .....	32
Online Tutorial Commands .....	33
Online Help .....	33
6 View Descriptions .....	35
General Information .....	36
View Summary .....	40
7 ACCOUNTING .....	43
Fields .....	44
Relevant Error Codes .....	45
Field Descriptions .....	45
8 ACTIVE-JOBS .....	49
Fields .....	50
Relevant Error Codes .....	65
Field Descriptions .....	51
Examples .....	56
9 ADDRESS-SPACE .....	57
Fields .....	58
Field Descriptions .....	58
10 ALLOCATIONS .....	61
Fields .....	62
Relevant Error Codes .....	63
Field Descriptions .....	63
11 AUTHORIZED-LIBRARIES .....	67
Fields .....	68

Relevant Error Codes .....	68
Field Descriptions .....	68
Example: Using AUTHORIZED-LIBRARIES View .....	69
12 CATALOG .....	71
Fields .....	72
Relevant Error Codes .....	73
Field Descriptions .....	73
Example: Using CATALOG View .....	76
13 CATALOG-UPDATE .....	77
Fields .....	78
Relevant Error Codes .....	78
Field Descriptions .....	79
14 CHECK-SECURITY .....	81
Fields .....	82
Field Descriptions .....	82
15 COMMON-DATA .....	85
Fields .....	86
Relevant Error Codes .....	86
Field Descriptions .....	87
Example .....	89
Supplementary Information about COMMON-DATA .....	95
16 CONSOLE .....	97
Fields .....	98
Relevant Error Codes .....	99
Field Descriptions .....	99
Default Order of Data Returned .....	104
17 CONSOLE-LOG .....	105
Fields .....	106
Relevant Error Codes .....	107
Field Descriptions .....	107
Default Order of Data Returned .....	111
18 COPY-FILE .....	113
Fields .....	114
Relevant Error Codes .....	115
Field Descriptions .....	115
19 DEVICE-NAMES .....	121
Fields .....	122
Field Descriptions .....	122
20 EVENTING .....	123
Fields .....	124
Relevant Error Codes .....	124
Field Descriptions .....	125
21 FILE-ALLOCATE .....	127
Fields .....	128
Relevant Error Codes .....	129

Field Descriptions .....	129
22 FILE-ATTRIBUTES .....	137
Fields .....	138
Relevant Error Codes .....	139
Field Descriptions .....	140
23 FILE-MAINTENANCE .....	147
Fields .....	148
Relevant Error Codes .....	148
Field Descriptions .....	148
24 IDCAMS .....	151
Fields .....	152
Relevant Error Codes .....	152
Field Descriptions .....	152
Default Order of Data Returned .....	153
25 IEBCOPY .....	155
Fields .....	156
Supported for Compatibility .....	281
Relevant Error Codes .....	157
Field Descriptions .....	157
Default Order of Data Returned .....	159
26 LIB-DIRECTORY .....	161
Fields .....	162
Relevant Error Codes .....	163
Field Descriptions .....	163
Default Order of Data Returned .....	336
27 LIB-UPDATE .....	169
Fields .....	170
Relevant Error Codes .....	170
Field Descriptions .....	171
28 LIB-ZAP .....	175
Fields .....	176
Field Descriptions .....	176
Default Order of Data Returned .....	177
29 LOADED-MODULES .....	179
Fields .....	180
Relevant Error Codes .....	180
Field Descriptions .....	181
30 LOAD-MODULE .....	183
Fields .....	184
Relevant Error Codes .....	185
Field Descriptions .....	185
31 MAIN-STORAGE .....	191
Fields .....	192
Relevant Error Codes .....	192
Field Descriptions .....	193

32 NATPROC-LOGON .....	195
Fields .....	196
Relevant Error Codes .....	196
Field Descriptions .....	197
33 NATPROC-USERS .....	199
Fields .....	200
Relevant Error Codes .....	201
Field Descriptions .....	201
34 NET-OPER .....	205
Fields .....	206
Relevant Error Codes .....	207
Field Descriptions .....	207
Default Order of Data Returned .....	209
35 READ-FILE .....	211
Fields .....	212
Relevant Error Codes .....	213
Field Descriptions .....	213
Default Order of Data Returned .....	218
36 READ-SPOOL .....	219
Fields .....	220
Relevant Error Codes .....	221
Field Descriptions .....	221
Default Order of Data Returned .....	224
37 READ-UNIX-FILE .....	225
Fields .....	226
Relevant Error Codes .....	226
Field Descriptions .....	226
38 RECEIVE-EMAIL .....	229
Fields .....	230
Relevant Error Codes .....	231
Field Descriptions .....	231
39 RESOURCE-CONTROL .....	235
Fields .....	236
Relevant Error Codes .....	236
Field Descriptions .....	237
40 SEND-EMAIL .....	241
Fields .....	242
Relevant Error Codes .....	243
Field Descriptions .....	243
41 SEND-MESSAGE .....	249
Fields .....	250
Relevant Error Codes .....	250
Field Descriptions .....	251
42 SPOOL-FILES .....	253
Fields .....	254

Relevant Error Codes .....	255
Field Descriptions .....	256
43 SPOOL-QUEUE .....	265
Fields .....	266
Relevant Error Codes .....	267
Field Descriptions .....	267
44 SPOOL-UPDATE .....	275
Fields .....	276
Relevant Error Codes .....	276
Field Descriptions .....	277
45 SUBMIT .....	279
Fields .....	280
Relevant Error Codes .....	281
Field Descriptions .....	281
SUBMIT Programming Notes .....	284
46 SYSTEM-COMMAND .....	285
Fields .....	286
Field Descriptions .....	286
Examples .....	287
Default Order of Data Returned .....	290
47 SYSTEM-INFO .....	291
Fields .....	292
Field Descriptions .....	293
48 TCB .....	299
Fields .....	300
Relevant Error Codes .....	300
Field Descriptions .....	301
49 UNIT-ATTRIBUTES .....	305
Fields .....	306
Field Descriptions .....	307
50 UNIX-DIRECTORY .....	313
Fields .....	314
Relevant Error Codes .....	314
Field Descriptions .....	315
51 VTOC .....	319
Fields .....	320
Relevant Error Codes .....	321
Field Descriptions .....	321
52 VTOC-UPDATE .....	327
Fields .....	328
Relevant Error Codes .....	328
Field Descriptions .....	329
53 WRITE-FILE .....	331
Fields .....	332
Relevant Error Codes .....	333

Field Descriptions .....	334
WRITE-FILE Programming Notes .....	339
WRITE-FILE and RELEASE Unused Space .....	339
Write ISPF Statistics .....	340
54 WRITE-SPOOL .....	341
Fields .....	342
Relevant Error Codes .....	343
Field Descriptions .....	343
WRITE-SPOOL Programming Notes .....	348
55 WRITE-UNIX-FILE .....	349
Fields .....	350
Relevant Error Codes .....	350
Field Descriptions .....	351
56 Related Literature .....	353



# 1

## About this Documentation

---

■ Document Conventions .....	2
■ Online Information and Support .....	2
■ Data Protection .....	3

## Document Conventions

---

Convention	Description
<b>Bold</b>	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <i>folder.subfolder.service</i> , APIs, Java classes, methods, properties.
<i>Italic</i>	Identifies:  Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies:  Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the   symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

## Online Information and Support

---

### Product Documentation

You can find the product documentation on our documentation website at <https://documentation.softwareag.com>.

### Product Training

You can find helpful product training material on our Learning Portal at <https://learn.software-ag.com>.

### Tech Community

You can collaborate with Software GmbH experts on our Tech Community website at <https://tech-community.softwareag.com>. From here you can, for example:

- Browse through our vast knowledge base.
- Ask questions and find answers in our discussion forums.
- Get the latest Software GmbH news and announcements.
- Explore our communities.
- Go to our public GitHub and Docker repositories at <https://github.com/softwareag> and <https://hub.docker.com/publishers/softwareag> and discover additional Software GmbH resources.

## Product Support

Support for Software GmbH products is provided to licensed customers via our Empower Portal at <https://empower.softwareag.com>. Many services on this portal require that you have an account. If you do not yet have one, you can request it at <https://empower.softwareag.com/register>. Once you have an account, you can, for example:

- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

## Data Protection

---

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.



## 2 User's Guide

---

This documentation covers the following topics:

<i>Introduction</i>	Provides an overview of the Entire System Server functionality.
<i>Getting Started</i>	Contains information necessary to communicate with the various operating system services provided by the Entire System Server.
<i>Online Tutorial</i>	Serves as a starting help for users and contains available views, a help text for each view specific to each operating system, and a sample program for each view.
<i>View Descriptions</i>	Explains how the description of each view is organized, describes global fields and provides an overview of available views according to their functional area.
<i>Related Literature</i>	



# 3 Introduction

---

■ Contents of this Documentation .....	8
■ System Overview .....	8
■ How the Entire System Server Works .....	9
■ How to Access Operating System Services .....	11
■ How a Natural User Benefits from the Entire System Server .....	11
■ Integration .....	12

This chapter covers the following topics:

## Contents of this Documentation

---

This documentation contains all information relevant to Entire System Server users. Before you start reading the following sections, you are advised to read the background information contained in the Entire System Server Concepts and Facilities documentation.

For the sake of convenience, however, a brief system overview and a description of how Entire System Server works is given in the following subsections. Some hints as to how the different types of Natural users can make use of Entire System Server are also included.

Subsequent sections cover the following topics:

- **Getting Started**

Describes the statements to access the Entire System Server, and gives some examples illustrating the use of the Entire System Server.

- **Online Tutorial**

Describes the online tutorial delivered with the Entire System Server.

- **View Descriptions**

Lists the Entire System Server views and gives a detailed description of addressable fields.

- **Operator Commands**

Describes the operator commands that can be used to control the Entire System Server.

## System Overview

---

The Software GmbH product Entire System Server is a self-contained software package that provides operating system services in a Natural environment. When installed on computers that are linked up in an Entire Net-Work, the Entire System Server supports distributed computing environments that can encompass heterogeneous operating systems.

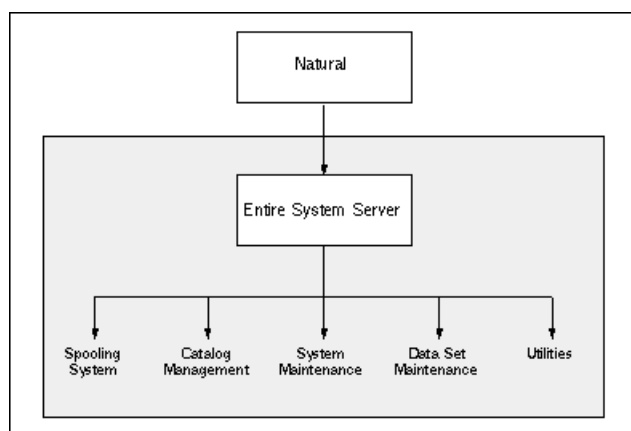
The Entire System Server makes data center management facilities available to Natural users (system programmers, application developers, computer operators), who now have access to network data not available before in a Natural environment. Entire System Server services include:

- access to jobs in input and output queues;
- submission of batch jobs;



- access to system console and operator command input;
- disk management;
- catalog management;
- read and write access to conventional files;
- utility functions (IDCAMS, AMASPZAP, IEBCOPY, ARCHIVE);
- network operations.

The following figure illustrates how Entire System Server enhances the Natural environment:



## How the Entire System Server Works

Entire System Server provides operating system information and services in the form of views. Depending on the type of service requested, displayed items can be further processed using operator commands, or used by a Natural program.

Entire System Server views consist of fields which are given a name. A Natural program can use this name to reference the associated item.

For example, Entire System Server provides a view of VTOC information, in which the various items are identified by field name. You can use the Natural `FIND` statement in a Natural program to select VTOC information. In the request, you can specify a volume serial number to identify the volume, and a node number to identify the particular Entire System Server in a computer network. Individual items are requested by specifying their field names. The following Natural program illustrates this for Volume `VOL001` and Node 148:

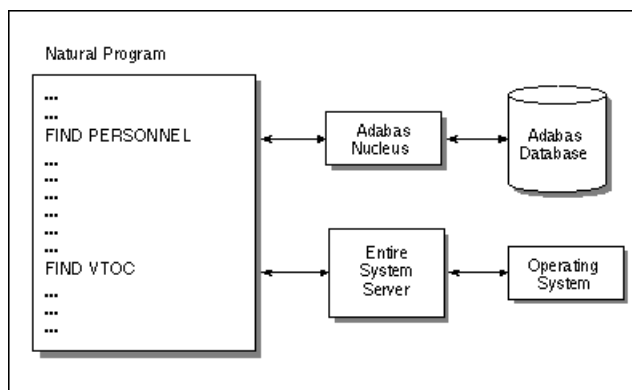
```
FIND VTOC WITH VOLSER='VOL001'
          AND NODE=148
  SORT BY DSNAME
  DISPLAY DSNAME DSORG LRECL BLKSIZE PERCENT-USED
LOOP
END
```

Internally, the presentation of such operating system information is implemented as follows:

Each Entire System Server in the network is assigned a database ID (node number) which is specified for the views it provides.

The Natural `FIND` statement (as in the above example) results in an Adabas call which the Entire System Server recognizes and intercepts based on the database ID. The Adabas call is passed to a special region, which serves Entire System Server requests: instead of database records, operating system information and system services are returned.

In other words, Natural behaves as if the view addressed by the `FIND` statement were an Adabas file: Natural builds the various Adabas control blocks and issues Adabas calls. The Entire System Server handles Adabas calls in the same way as Adabas itself. The following figure illustrates this concept:



Whereas the first `FIND` statement in the above figure returns personnel data from an Adabas database, the second `FIND` statement accesses operating system information.

In order to make the Entire System Server more efficient, the Adabas calls are intercepted to provide buffering between the Natural program and the Entire System Server nucleus. Natural places the requested service into the Adabas format, search and value buffers, and the result is returned to the record buffer.

## How to Access Operating System Services

Natural programs can access the Entire System Server using either of the following statements:

Natural Statement	Meaning
FIND	Select operating system information for the specified view(s).
PROCESS	Perform operating system activities using the specified view(s).

The Entire System Server in turn accesses the requested operating system service. Each operating system service is presented as a view defined to the Entire System Server.

- When directed at Entire System Server, the Natural statements listed above can be used with some additional options. These are described in detail in section [Getting Started](#).
- A detailed description of each view available through Entire System Server is given in the section [View Descriptions](#).
- Example Natural programs with calls to the Entire System Server can be found in the online tutorial delivered with the Entire System Server.

## How a Natural User Benefits from the Entire System Server

The additional information and services provided by the Entire System Server are accessible via views as appropriate to each supported operating system. It is therefore not difficult to see how the Entire System Server can benefit the Natural user, whether a system programmer, a computer operator or an application programmer. A brief outline follows in the subsections below.

### System Programmers and Computer Operators

The computer operator benefits especially from the access to job management items; these include job variables, job switches and the job queue, `SYSLIST` files and spool information, as well as the access to the console and active job information. Applications can be realized to allow an operator to perform functions with an easy-to-use Natural tool.

With the Entire System Server, the system programmer has a very powerful instrument for maintaining and monitoring network-wide system resources and information from a single location. A special benefit is the ability to further process information retrieved through Entire System Server in the Natural environment.

For example, a system programmer can write programs to give statistics about disk usage, monitor spooling systems, inspect job address space, run the `ARCHIVE` utility, use inter-task communication (ITC), etc. The names of the views described in this documentation speak for themselves, and any

experienced system programmer will recognize the many possibilities that the Entire System Server offers for the work in this particular environment.

### Application Programmers

The range of file management views provided by the Entire System Server are of special importance to the application programmer. Names of operating system files can be assigned dynamically at execution time (batch and online). With the `FILE-ALLOCATE` view, an operating system file can be created at any time.

Another benefit for application programming is the group of views that make batch processing available to online applications. Using the `SUBMIT` view, application programmers can run jobs on any computer in the network and monitor them using the `ACTIVE-JOBS` view. The results can be inspected from within the application using the `SPOOL-QUEUE`, `READ-SPOOL` or `READ-FILE` views as appropriate.

One useful feature for application programmers is the access to information stored in sequential files. Using the views `READ-FILE` and `WRITE-FILE`, application programmers can work with sequential files in a synchronized way. This even holds true in TP environments which otherwise would not support access to sequential files.

## Integration

---

The Entire System Server is fully integrated into the Entire technology, Software GmbH's concept for realizing Open Enterprise Computing. This means that the Entire System Server can operate in a computer network if the different computers are interlinked with Software GmbH's Entire Net-Work. Different physical machines are addressed by using different Entire System Server node numbers. This enables one Entire System Server application to control a multi-CPU environment which may include heterogeneous operating systems.

As the logical companion of Natural, the Entire System Server is fully compatible with other tools available for the Natural environment such as:

- Predict
- Natural Security
- Super Natural
- Entire Connection

Entire System Server also interfaces with security packages such as RACF, ACF2 and TOP SECRET, etc.

Entire System Server can be used with Natural in batch mode, when using Natural with a TP monitor such as Com-plete, CICS, IMS or *open*UTM, when using Natural with TSO or TIAM, or with a program that uses Adabas direct commands.

Calls from UNIX platforms are supported, for example, for Entire Operations.



# 4

## Getting Started

---

▪ Syntax Used to Access Entire System Server .....	16
▪ Using Entire System Server in a Multi-Computer Environment .....	19
▪ Using Entire System Server Update View Processors .....	19
▪ Examples .....	23

This section contains information necessary to communicate with the various operating system services provided by the Entire System Server. The examples included show the use of the Entire System Server. The examples consist of Natural programs that reference Entire System Server views, and show the resulting output.

An example program for every available view is contained in an online tutorial delivered with the Entire System Server (see Section [Online Tutorial](#) for more information).

This chapter covers the following topics:

## Syntax Used to Access Entire System Server

---

Entire System Server views can be accessed from any Natural program using the Natural statement `PROCESS` or `FIND`. Which statement you will use depends on the type of view accessed, the access mode required, and the number of records selected.

- The `PROCESS` statement is intended for use only for views related to performing an activity.
- The `FIND` statement can be used to retrieve information, which may consist of a set of records.

### PROCESS Statement

The `PROCESS` statement is used to request a function (for example, allocate, update, or delete system data, issue operator commands,) using the appropriate operating system service.

```
PROCESS view-name USING field-name=value  
      GIVING field-name
```

#### Example:

```
PROCESS FILE-ALLOCATE USING  
      DSNAME = 'USER.123',  
      VOLSER = 'SAG001',  
      NODE   = 151  
      GIVING ERROR-CODE
```

Using the view `FILE-ALLOCATE`, a dataset named `USER.123` is allocated on a volume with the serial number `SAG001`, on the machine identified by the Entire System Server node ID `151`, and a code is returned.



## FIND Statement

The `FIND` statement can be used to display data from views that require specification of fields. Selectable fields are indicated in the view descriptions by a `D` in the `Descriptor` column (see [View Descriptions](#)).

```
FIND ... view-name WITH ... search criteria
```

Data is selected based on the specified search criteria (see next subsection).

### Example:

```
FIND ACTIVE-JOBS WITH NODE      = 151
                        AND JOB-NAME = COMPLETE
....
END-FIND
```

Using the `ACTIVE-JOBS` view, the job named `COMPLETE` on the machine identified by the Entire System Server node ID 151 is selected for display.

### Search Criteria with the FIND Statement

When `FIND` is used to access the Entire System Server, search criteria can be used to specify values for alphanumeric fields. Two search criteria are available:

- `*` Acts as placeholder for one or more characters in the position;
- `_` Acts as placeholder for one character.

The following examples demonstrate the use of these search criteria:

#### Example 1:

```
FIND VTOC WITH VOLSER = 'V3380A' AND DSNAME = 'L99*LOAD*'
```

All datasets on volume `V3380A` whose names start with `L99` followed by anything, followed by `LOAD`, followed by anything, are selected; for example:

- `L99COM.LOAD.NPR`
- `L99.SAG.LOAD.DOCS`
- `L99NPROC.LOAD`

### Example 2:

```
FIND VTOC WITH VOLSER = 'V3380A' AND DSNAME = '*SOURCE'
```

All datasets on volume V3380A whose names end with SOURCE are selected; for example:

- A1234.SOURCE
- SAG.PP.SOURCE
- AB.MYSOURCE

### Example 3:

```
FIND ACTIVE-JOBS WITH JOB-NAME = 'L_ _AB*'
```

All jobs whose first characters are L, followed by any 2 characters, followed by AB, followed by anything are selected; for example:

- L12ABJOB
- LAAABX
- LXXAB2YC

### Example 4:

```
FIND ↵
```

```
NATPROC-USERS WITH USER-ID = '_ _ _ _ _'
```

All users of the Entire System Server whose identifiers contain exactly 5 characters are selected.

The **FIND** statement does not create an ISN list as in the case of Adabas. Therefore, all functions related to ISN lists are not supported; for example, **RETAIN**, **\*NUMBER**.

As Entire System Server does not support ISN lists as it is done in Adabas, the meaning of the field **\*NUMBER** is different.

There are in general 3 possibilities:

1. **\*NUMBER = 0** means for Natural: fall in **NO RECORDS FOUND** clause and Entire System Server did not find any record which fulfilled the search criteria.
2. **\*NUMBER = 1** means for Natural one record found. It will be returned for views with one wanted action such as **FILE-ATTRIBUTES**, **CATALOG-UPDATE**.
3. **\*NUMBER = large value**: there are different large values for different views such as **CATALOG**, **READ-FILE** and **READ-SPOOL**

---

## Using Entire System Server in a Multi-Computer Environment

---

If you have more than one computer at your installation, you may have more than one Entire System Server node installed (ask your system programmer). Note that the node ID identifies each Entire System Server node uniquely.

It is possible to direct a Entire System Server request from a Natural program to a specific node. To do this, specify `NODE=nnn` in the appropriate `FIND` statement; for example:

```
FIND VTOC WITH VOLSER='DISK01' AND NODE=151
```

This statement is executed in Node 151. If the `NODE` field is not specified, the default node is used (DBID specified in the DDM).

An alternative method is to use the `NODE-NAME` field when referencing Entire System Server nodes on other machines. `NODE-NAME` is a character field and allows programs to be written without regard to a specific node number. If a particular machine needs to have its node changed, the only update that is required is to the mapping module `ESYNODTB` (see also Entire System Server *Installation and Customization* documentation). No Natural programs need to be changed and restowed.

An example of `NODE-NAME` is

```
FIND VTOC WITH VOLSER='SMS236' AND NODE-NAME = 'PROD'
```

If both `NODE` and `NODE-NAME` are specified, the `NODE` specification takes precedence.

A Natural program can even access multiple nodes. For example, using the `COPY-FILE` view, you can copy a file from one node to another.

---

## Using Entire System Server Update View Processors

---

### General

Most of the views provided by ESY obtain data from the Operating System and return these data to the Natural program. Those views belong to the group of retrieval views. Another group of views allows you to modify Operating System objects in a certain way. These views belong to the group of update views.

All multi-record views with an Adabas file number greater than or equal to 200 belong to update views. These views require a special programming technique. A number of other update views support a single record request only (for example, `CATALOG-UPDATE`, `VTOC-UPDATE`) and do not need special programming considerations.

The field `FUNCTION` is provided in all update views. It should contain blanks while creating the object, and the value `CLOSE` if the object has been properly created. If no `CLOSE` has been requested, the object is still in open state and not completely built.

We recommend using the Natural statement `PROCESS` to request update view services.

```
PROCESS update_view USING
      NODE = #NODE
      , FUNCTION = #FUNCTION
      ...
```

### A Session with Multiple `PROCESS` Statements

If more than one `PROCESS` statement is implemented in a Natural program and the requests are related to one session only, for example, to create a single dataset, the `PROCESS` statements must be indicated as belonging together.

A typical example is the `PROCESS WRITE-FILE USING FUNCTION=' '` in one subroutine to create several records and `PROCESS WRITE-FILE USING FUNCTION='CLOSE'` in a different subroutine. The field `IDENTIFIER` must be used and filled with the same 8-byte character string to indicate a session dealing with the same dataset in different locations of a Natural program.

Another issue is implementing nested loops requesting update view services. A separate `IDENTIFIER` must be used in every loop level to make the calls linked to several sessions if for example `WRITE-FILE` is used in different loop levels. If no `IDENTIFIER` is provided, unpredictable results might occur in nested loops.

### Segmenting Data

If records have to be written to a dataset, the view `WRITE-FILE` must be used to do it. The field `RECORD` is defined as an alphanumeric field with a maximum length of 253 bytes only. Datasets probably contain records larger than 253 bytes. Therefore, the pieces of such records have to be delivered in segments.

Setting fields `SEGMENT-NUMBER` and `SEGMENT-LENGTH` allows you to create records longer than 253 bytes. Assuming a record length of 500 bytes, two view calls are needed.

`SEGMENT-NUMBER=1, SEGMENT-LENGTH=250, RECORD bytes 1-250` filled with data, create the first part of the record, `SEGMENT-NUMBER=2, SEGMENT-LENGTH=250, RECORD bytes 1-250` the second part of the record.

Smaller segments could also be used (for example, 5 segments each 100 bytes long) but this would increase the number of calls and reduce the performance.

## Sample WRITE-FILE Program

The following sample program reads an LMS element on one node and copies the data to another LMS element on another node. It deals with segments returned by the view `READ-FILE`. If an error occurs, the copying is stopped immediately.

```

DEFINE DATA LOCAL
1 READ-FILE VIEW OF READ-FILE
  2 ERROR-CODE
  2 ERROR-TEXT
  2 SYSTEM-CODE
  2 SYSTEM-MESSAGE-CODE
  2 DSNAME
  2 ELEMENT
  2 ELEMENT-TYPE
  2 ELEMENT-VERSION
  2 RECORD
  2 RECORD-LENGTH
  2 RECORD-NUMBER
  2 SEGMENT-LENGTH
  2 SEGMENT-NUMBER
  2 END-OF-FILE
  2 PRODUCT
  2 KEY
1 WRITE-FILE VIEW OF WRITE-FILE
  2 ERROR-CODE
  2 ERROR-TEXT
  2 SYSTEM-CODE
  2 SYSTEM-MESSAGE-CODE
  2 DSNAME
  2 ELEMENT
  2 ELEMENT-TYPE
  2 ELEMENT-VERSION
  2 RECORD
  2 RECORD-LENGTH
  2 RECORD-NUMBER
  2 SEGMENT-LENGTH
  2 SEGMENT-NUMBER
  2 PRODUCT
  2 DISP
  2 KEY
  2 FUNCTION
*
1 #I-DSNAME      (A54) INIT <'$NPR.NPRvrs.DEV'>
1 #I-ELEMENT     (A64) INIT <'XCOMMAIN'>
1 #I-ELEMENT-TYPE (A8)  INIT <'P'>
1 #I-NODE        (N3)   INIT <113>
1 #I-PRODUCT     (A1)   INIT <'M'>
*
1 #O-DISP        (A3)   INIT <'NEW'>
1 #O-DSNAME      (A54) INIT <'$PRD.NPRvrs.DEV'>

```

```

1 #O-FUNCTION      (A8)  INIT <' '>
1 #O-ELEMENT       (A64) INIT <'XCOMMAIN'>
1 #O-NODE          (N3)  INIT <114>
1 #O-PRODUCT       (A1)  INIT <'M'>
*
1 #CLOSE-NEEDED    (L)   INIT <FALSE>
*
END-DEFINE
*
* Main loop reading the segments of the input file to
* write the data to output on the target node.
*
FIND READ-FILE WITH NODE          = #I-NODE
                        AND DSNAME = #I-DSNAME
                        AND ELEMENT = #I-ELEMENT
                        AND ELEMENT-TYPE = #I-ELEMENT-TYPE
                        AND PRODUCT = #I-PRODUCT
*
  IF READ-FILE.ERROR-CODE NE 0
    WRITE READ-FILE.ERROR-CODE
    READ-FILE.ERROR-TEXT
    READ-FILE.SYSTEM-CODE
    READ-FILE.SYSTEM-MESSAGE-CODE
    IF #CLOSE-NEEDED EQ FALSE
      ESCAPE ROUTINE
    END-IF
  END-IF
*
  IF READ-FILE.END-OF-FILE EQ 'YES' OR
    READ-FILE.ERROR-CODE NE 0
    ASSIGN #O-FUNCTION = 'CLOSE'
  END-IF
*
  PROCESS WRITE-FILE USING
    NODE          = #O-NODE
    , DSNAME      = #O-DSNAME
    , DISP        = #O-DISP
    , FUNCTION     = #O-FUNCTION
    , PRODUCT     = #O-PRODUCT
    , ELEMENT     = #O-ELEMENT
    , ELEMENT-TYPE = READ-FILE.ELEMENT-TYPE
    , ELEMENT-VERSION = READ-FILE.ELEMENT-VERSION
    , RECORD      = READ-FILE.RECORD
    , RECORD-LENGTH = READ-FILE.RECORD-LENGTH
    , RECORD-NUMBER = READ-FILE.RECORD-NUMBER
    , SEGMENT-LENGTH = READ-FILE.SEGMENT-LENGTH
    , SEGMENT-NUMBER = READ-FILE.SEGMENT-NUMBER
    , KEY         = READ-FILE.KEY
*
  IF WRITE-FILE.ERROR-CODE NE 0
    WRITE WRITE-FILE.ERROR-CODE
    WRITE-FILE.ERROR-TEXT

```

```

        WRITE-FILE.SYSTEM-CODE
        WRITE-FILE.SYSTEM-MESSAGE-CODE
        ESCAPE ROUTINE
    END-IF
*
    IF READ-FILE.ERROR-CODE NE 0
        ESCAPE ROUTINE
    END-IF
*
    ASSIGN #CLOSE-NEEDED = TRUE
*
END-FIND
*
END

```

## Examples

Example programs and their results are shown below for each of the functional areas of Entire System Server. The programs are taken from the Entire System Server online tutorial. A full list of field names for the various operating systems is contained in the view descriptions; see [View Descriptions](#).

### File Management: COPY-FILE

Program MCOPYFI uses the COPY-FILE view to copy files from one node to another within a computer network:

```

* Program      MCOPYFI
* View         COPY-FILE
*
* Function     Copy files from node to node
*
* -----
*
DEFINE DATA
    GLOBAL USING TUTO
    LOCAL USING COPYFI-L
END-DEFINE
*
REPEAT
    INPUT (AD=MI'_' ZP=OFF)
           // ##TITLE (AD=OI IP = OFF)
           // ' from' (I)
           // ' Dataset....:' COPY-FILE.FROM-DSNAME
           / ' Member.....:' COPY-FILE.FROM-MEMBER
           / ' Volser.....:' COPY-FILE.FROM-VOLSER
           / ' Node.....:' COPY-FILE.FROM-NODE
           // ' to' (I)

```

```

// ' Dataset....:' COPY-FILE.TO-DSNAME
/ ' Member....:' COPY-FILE.TO-MEMBER
/ ' Volser....:' COPY-FILE.TO-VOLSER
/ ' Node.....:' COPY-FILE.TO-NODE
PROCESS COPY-FILE USING FROM-DSNAME = COPY-FILE.FROM-DSNAME
                        , FROM-MEMBER = COPY-FILE.FROM-MEMBER
                        , FROM-VOLSER = COPY-FILE.FROM-VOLSER
                        , FROM-NODE   = COPY-FILE.FROM-NODE
                        , TO-DSNAME = COPY-FILE.TO-DSNAME
                        , TO-MEMBER = COPY-FILE.TO-MEMBER
                        , TO-VOLSER = COPY-FILE.TO-VOLSER
                        , TO-NODE   = COPY-FILE.TO-NODE
                        , NODE      = ##NODE
REINPUT ERROR-TEXT
*
END-REPEAT
END

```

This program prompts you for specification of the source and destination names, and notifies you of the successful copy function with a message:

```
ESY5000 COPY COMPLETED SUCCESSFULLY
```

## System Maintenance: NET-OPER

Program MNETOPR executes certain operator commands and displays system response:

```

* Program    MNETOPR
* View       NET-OPER
*
* Function    Execute NET operator commands and display response
*
* -----
*
DEFINE DATA
  GLOBAL USING TUTO
  LOCAL  USING NETOP-L
END-DEFINE
*
REPEAT
  INPUT (AD=MI'_' )
  // ##TITLE (AD=OI IP=OFF)
  // 'Command:' / ' ' NET-OPER.COMMAND (AL=79)
  // 'Purge previous messages ?' NET-OPER.PURGE-PREVIOUS '(y/n)'
*
  FIND NET-OPER WITH COMMAND      = NET-OPER.COMMAND
                      AND NODE      = ##NODE
                      AND PURGE-PREVIOUS = NET-OPER.PURGE-PREVIOUS
*
  IF ERROR-CODE > 0

```



```

        ASSIGN ##MSG-NR = 1000
        ASSIGN ##MSG-TXT1 = ERROR-TEXT
        STOP
    END-IF
*
    IF LINE-STATUS NE 'YES'
        NEWPAGE
    END-IF
*
    WRITE NOTITLE TIME-STAMP LINE (AL=70)
*
    END-FIND
END-REPEAT
END

```

Example output from the program MNETOPR using input D NET,LINES:

```

09:02:12 D NET,LINES
09:01:38 IST097I  DISPLAY  ACCEPTED
09:01:38 IST350I  VTAM DISPLAY - DOMAIN TYPE= LINES
09:01:38 IST354I  PU T4/5 MAJOR NODE = ISTPUS
09:01:38 IST170I  LINES:
09:01:38 IST080I  050-L      ACTIV----I 052-L      ACTIV----I
09:01:38 IST231I  CA MAJOR NODE = FCHAN
09:01:38 IST170I  LINES:
09:01:38 IST232I  FACAL      , ACTIV----E, CUA = 930
09:01:38 IST354I  PU T4/5 MAJOR NODE = NCPF00
09:01:38 IST170I  LINES:
09:01:38 IST080I  NATL1      RESET-N--- SIML1      RESET-N--- BRUL1      RESET-N---
09:01:38 IST080I  BERL1      RESET-N--- HANL1      RESET-N--- AMSL1      RESET-N---
09:01:38 IST080I  MUEL2      RESET-N--- STUL2      RESET-N--- STUL3      RESET-N---
09:01:38 IST080I  DEML1      RESET-N--- HAML2      RESET-N--- NIKL1      RESET-N---
09:01:38 IST080I  NIKL3      RESET-N--- NIKL4      RESET-N--- HAML1      RESET-N---
09:01:38 IST080I  STUL1      RESET-N--- WIEL1      RESET-N--- DEML2      RESET-N---
09:01:38 IST080I  LNKRESL    ACTIV----E
09:01:38 IST354I  PU T4/5 MAJOR NODE = NCPE01
09:01:38 IST170I  LINES:
09:01:38 IST080I  VXEL1      RESET-N--- NIKL5      RESET-N--- NIKL6      RESET-N---
09:01:38 IST080I  NETL1      RESET-N--- NUEL1      RESET-N--- FRIL1      RESET-N---
09:01:38 IST080I  FRIL2      RESET-N--- FRIL3      RESET-N--- FRIL4      RESET-N---

```

**System Maintenance: CONSOLE**

Program MCONSOL displays the operator console:

```
* Program    MCONSOL
* View       CONSOLE
*
* Function   Operator Console
*
* -----
*
DEFINE DATA
    GLOBAL USING TUTO
    LOCAL  USING CONSOLEL
END-DEFINE
*
SET KEY PF12 NAMED 'Node'
*
REPEAT
    RESET #LINE (*)
    RESET #CV-LINE (*)
    FIND CONSOLE WITH NODE      = ##NODE
                        AND FUNCTION = 'DISPLAY'
        PERFORM CHECK-ERROR
        ASSIGN #LINE (20) = TEXT
        ASSIGN #LINE (1:19) = #LINE(2:20)
    END-FIND
*
    FIND CONSOLE WITH NODE      = ##NODE
                        AND FUNCTION = 'DIS-WTOR'
        PERFORM CHECK-ERROR
        ASSIGN #I = *COUNTER
        ASSIGN #LINE (#I) = TEXT
        ASSIGN #CV-LINE (#I) = (AD=I)
    END-FIND
*
    RESET #LINE (20)
        #CV-LINE (20)
    FOR #I 1 19
        FOR #J = #I 20
            IF #LINE (#I) = ' '
                ASSIGN #LINE (#I:19) = #LINE (#I+1:20)
                ASSIGN #CV-LINE (#I:19) = #CV-LINE (#I+1:20)
                RESET #LINE (20)
                    #CV-LINE (20)
            ELSE
                ESCAPE BOTTOM
            END-IF
        END-FOR
    END-FOR
*
END-REPEAT
```

```

PERFORM SCREEN-IO
*
END-REPEAT
*
DEFINE SUBROUTINE SCREEN-IO
  INPUT WITH TEXT *##MSG-NR,##MSG-TXT1, ##MSG-TXT2
    USING MAP 'CONSOLE&'
  RESET ##MSG-NR ##MSG-TXT1 ##MSG-TXT2
  IF #COMMAND-LINE NE ' '
    ASSIGN #FUNCTION = 'OP-CMD'
    PERFORM ISSUE-OPERATOR-COMMAND
    RESET #COMMAND-LINE
  END-IF
  IF *PF-KEY = 'PF12'
    CALLNAT 'TUTODB' ##NODE ##MSG ##TUTO
  END-IF
END-SUBROUTINE
*
DEFINE SUBROUTINE ISSUE-OPERATOR-COMMAND
  PROCESS CONSOLE USING NODE      = ##NODE
                        , FUNCTION = #FUNCTION
                        , TEXT     = #COMMAND-LINE
                        GIVING ERROR-CODE ERROR-TEXT
  PERFORM CHECK-ERROR
END-SUBROUTINE
*
DEFINE SUBROUTINE CHECK-ERROR
  IF CONSOLE.ERROR-CODE > 0
    ASSIGN ##MSG-TXT1 = CONSOLE.ERROR-TEXT
    ASSIGN ##MSG-NR   = 1000
  END-IF
END-SUBROUTINE
*
END

```

Output from the program MCONSOL:

```

----- Operator-Console ----- Node 148
- STC 2141 NET0120 - VTAM LINK LNKA      TO NODE ANODE      STAT=ACTIVE
- STC 2141 NET0120 - VTAM LINK LNKVM     TO NODE UNKNOWN    STAT=OPEN
- STC 2141 NET0120 - VTAM LINK LNKKOP    TO NODE UNKNOWN    STAT=OPEN
- JOB 2344 IEF404I MSGEN05 - ENDED - TIME=10.22.44
- JOB 2345 IEF403I MSGEN06 - STARTED - TIME=10.22.45
  STC 2112 F FNETWK,CONN LNKU           --> UQ K CMD FROM HRO
- STC 2141 NET0137 - LINK LNKU          CONNECT INITIATED
- STC 2141 NET0137 - LINK LNKR          CONNECT INITIATED
  STC 2124 IST663I CDINIT REQUEST TO EHOST FAILED, SENSE=08010000
  IST664I REAL  OLU=SAGNET.FNETWK       ALIAS DLU=SAGNET.UNETWK
  IST889I SID = CB6722CE854CF71C
  IST314I END
  STC 2124 IST663I CDINIT REQUEST TO EGAT FAILED, SENSE=08010000
  IST664I REAL  OLU=SAGNET.FNETWK       ALIAS DLU=SAGNET.RNETWK

```

```

IST889I SID = CB6722CE854CF71E
IST314I END
STC 2112 P NPR123                --> UQ K CMD FROM WKK
STC 2112 IEE341I NPR123    NOT ACTIVE
00- STC 2231 === INACTIVE USER HAL      HAS BEEN PURGED ===

```

## Spool Management: READ-SPOOL

Program MRSP00L displays information for a specified job:

```

* Program    MRSP00L
* View       READ-SPOOL
*
* Function    Read SYSOUT records from JES
*
* -----
*
DEFINE DATA
  GLOBAL USING TUTO
  LOCAL USING RSP00L-L
  LOCAL 1 #JOBN      (N5)
        1 #JOB       (A8)
        1 #TYPE      (A2)
        1 #DS        (N3)
        1 #STRING    (A50)
        1 #SEL       (A1/1:6)
        1 #CODE      (A2/1:6) CONST (1) <'SI'>
                                   (2) <'JL'>
                                   (3) <'SM'>
                                   (4) <'SO'>
                                   (5) <'CC'>
                                   (6) <'AL'>
        1 #I         (I1)
END-DEFINE
*
REPEAT
  INPUT WITH TEXT *##MSG-NR,
                ##MSG-TXT1,
                ##MSG-TXT2
  USING MAP 'MRSP00L&'
  RESET ##MSG
*
  IF #STRING = ' '
    ASSIGN #STRING = '*'
  END-IF
*
  IF SELECTION NOT UNIQUE #SEL (*)
    REINPUT *1011
  ELSE
    FOR #I = 1 TO 6
      IF #SEL (#I) NE ' '

```

```

        ASSIGN #TYPE = #CODE (#I)
    END-IF
END-FOR
END-IF
*
    FIND READ-SPOOL WITH JOB-NAME    = #JOB
                        AND JOB-NUMBER = #JOBN
                        AND TYPE       = #TYPE
                        AND DATA-SET  = #DS
                        AND NODE       = ##NODE
                        AND RECORD     = #STRING
    IF ERROR-CODE > 0
        REINPUT ERROR-TEXT
    END-IF
    DISPLAY NOTITLE NOHDR RECORD (AL=79)
END-FIND
END-REPEAT
*
END

```

Output from the program MRSPPOOL:

The program displays the following output with all datasets specified in the prompt:

```

1          J E S 2   J O B   L O G   --   S Y S T E M   D A E F   --   N
----- JOB
5812 IEF097I OPPLG181 - USER ACF2BAT  ASSIGNED
14.03.58 JOB 5812  $HASP373 OPPLG181 STARTED - INIT 22 - CLASS W - SYS DAEF
14.03.58 JOB 5812
IEF403I OPPLG181 - STARTED - TIME=14.03.58
14.03.58 JOB 5812 *IEF233A M 803,P18111,,OPPLG181,RES518,DB181.PLOG07
14.10.51 JOB 5812
-
--TIMINGS
14.10.51 JOB 5812 -JOBNAME STEPNAME PROCSTEP   RC  EXCP  CONN    TCB    S
14.10.51 JOB 5812 -OPPLG181 PLG181   RES518      00  7122  22575   .03    .
14.10.54 JOB 5812 $DRM007 WARNING - DRM DATABASE IS ACTIVE
14.11.03 JOB 5812 +ADAN02 00008 NUCLEUS-RUN WITHOUT PROTECTION-LOG
14.11.03 JOB 5812 +ADAN03 00008 ADABAS COMING UP
14.11.03 JOB 5812 +ADAN01 00008 A D A B A S IS ACTIVE
14.11.03 JOB 5812 +ADAN01 00008 MODE = SINGLE I S O L A T E D
14.11.05 JOB 5812 $DRM200 SDR PLG181 updated successfully.
14.11.05 JOB 5812 +DRM201 Tsn P18111
14.11.05 JOB 5812 +DRM202 Seq 1  Label 7  File 7  Used 53 Writes 0
14.11.05 JOB 5812 +ADAL01 00008 93.02.05 14:11:04 CLOG NOT ACTIVE
14.11.11 JOB 5812 -OPPLG181 DRMUPD              00   320   1034   .00    .
14.11.11 JOB 5812 IEF234E K 803,P18111,PVT,OPPLG181
14.11.11 JOB 5812 IEF404I OPPLG181 - ENDED - TIME=14.11.11
14.11.11 JOB 5812 -OPPLG181 ENDED. NAME-              TOTAL TCB CPU T
14.11.11 JOB 5812 $HASP395 OPPLG181 ENDED
0----- JES2 JOB STATISTICS -----

```



# 5

## Online Tutorial

---

■ Online Tutorial Menu .....	32
■ Online Tutorial Function Keys .....	32
■ Online Tutorial Commands .....	33
■ Online Help .....	33

The Entire System Server is delivered with an online tutorial as a starting help for users. It contains available views, a help text for each view specific to each operating system, and a sample program for each view. All sample programs can be displayed, edited and executed. They illustrate the use made of the Entire System Server, and can be taken as starting points for more elaborate applications.



**Note:** When using the Entire System Server online tutorial, the Natural session parameter LE, which controls the action to be taken if the limit of retrieved records was exceeded in a database access statement processing loop, must be set to OFF.

This chapter covers the following topics:

## Online Tutorial Menu

---

You can activate the online tutorial by logging on to the library SYSNPE in your Natural environment and issuing the MENU command.

This displays the online tutorial menu, and you are prompted for the Entire System Server node number. You will usually leave the default (but see the subsection [Using Entire System Server in a Multi-Computer Environment](#)).

The content of the menu may vary according to your particular operating environment: the online tutorial provides those views relevant to your site.

Press Enter to select the node number in the prompt window.

Meaning of the information in the columns:

Column Heading	Meaning
View	Name of the view.
Program	Name of the sample program that illustrates use of the view.
Program Description	Description of the program's function.

## Online Tutorial Function Keys

---

The PF key line at the bottom of the online tutorial provides the following functions:



PF Key	Function	Description
PF3	Exit	Leave the online tutorial.
PF5	User	Display user-defined view and program names.
PF7	Up	Scroll the list of views backwards.
PF8	Down	Scroll the list of views forward.
PF10	Lang	Select the tutorial in another language from a prompt window.
PF12	Node	Select another Entire System Server node by typing the node number in the prompt window.

## Online Tutorial Commands

From the online tutorial menu, you can display view definitions and sample programs. You can also edit the programs and execute them to see the result. Additionally, you can display a help text for each view and select the text as relevant to the supported operating systems.

These functions are performed by means of line commands. Available line commands are listed at the bottom of the online Tutorial Menu, above the PF key line. You can perform a function by entering the appropriate line command in the input field preceding the view name.

The table below lists the available line commands:

Line Command	Function	Description
E	Edit	Edit the example program. You can see the results of your edited program using the line command X.
H	Help	Display an explanation of the selected view's function; see the subsection <a href="#">Online Help</a> .
L	List	Display the example program (no modification possible).
V	List Userview	Display the selected view description (names and attributes of the fields). For a comprehensive description of views and fields, see <a href="#">View Descriptions</a> .
X	Execute	Display the results of the example program.

## Online Help

The online tutorial provides online help for each view.

To display the online help text, issue the line command H in the input field preceding the view name.

The online help texts all have the same format, containing information on the purpose of the view, supported operating systems, and some additional information.

The following functions can be performed from this screen by pressing the appropriate PF key:

PF Key	Description
PF3	Leave the help screen and return to the tutorial menu.
PF5	Display general help text, that is, information relevant to all supported operating systems.
PF6, PF7, PF8	Display operating system specific information.

# 6

## View Descriptions

---

■ General Information .....	36
■ View Summary .....	40

This section gives a detailed description of every view available through Entire System Server. The section is structured as follows:

- The selection box below lists all view descriptions in alphabetical order. Each view description subsection gives a full description of the view, listing first all field names according to operating system. An overview of error messages relevant to the view is given, followed by a detailed description of each field in alphabetical order.
- The subsection [General Information](#) explains how the description of each view is organized, and describes global fields (that is, fields relevant to each view).
- The subsection [View Summary](#) provides an overview of available views, listing them according to their functional area.

#### Alphabetical List of Specific View Descriptions

<a href="#">ACCOUNTING</a>	<a href="#">ACTIVE-JOBS</a>	<a href="#">ADDRESS-SPACE</a>	<a href="#">ALLOCATIONS</a>
<a href="#">ARCHIVE</a>	<a href="#">AUTHORIZED-LIBRARIES</a>	<a href="#">CATALOG</a>	<a href="#">CATALOG-UPDATE</a>
<a href="#">CHECK-SECURITY</a>	<a href="#">COMMON-DATA</a>	<a href="#">CONSOLE</a>	<a href="#">CONSOLE-LOG</a>
<a href="#">COPY-FILE</a>	<a href="#">DEVICE-NAMES</a>	<a href="#">ENTER-PROCEDURE</a>	<a href="#">EVENTING</a>
<a href="#">FILE-ALLOCATE</a>	<a href="#">FILE-ATTRIBUTES</a>	<a href="#">FILE-MAINTENANCE</a>	<a href="#">HELP-INFO</a>
<a href="#">IDCAMS</a>	<a href="#">IEBCOPY</a>	<a href="#">ITC</a>	<a href="#">JOB-SWITCHES</a>
<a href="#">JOB-VARIABLES</a>	<a href="#">LIB-DIRECTORY</a>	<a href="#">LIB-UPDATE</a>	<a href="#">LIB-ZAP</a>
<a href="#">LOADED-MODULES</a>	<a href="#">LOAD-MODULE</a>	<a href="#">MAIN-STORAGE</a>	<a href="#">NATPROC-LOGON</a>
<a href="#">NATPROC-USERS</a>	<a href="#">NET-OPER</a>	<a href="#">PRINT-DOCUMENT</a>	<a href="#">READ-FILE</a>
<a href="#">READ-SPOOL</a>		<a href="#">READ-UNIX-FILE</a>	<a href="#">RECEIVE-EMAIL</a>
		<a href="#">SEND-EMAIL</a>	<a href="#">SEND-MESSAGE</a>
		<a href="#">SPOOL-UPDATE</a>	<a href="#">SUBMIT</a>
		<a href="#">TASK-INFO</a>	<a href="#">TCB</a>
	<a href="#">UNIX-DIRECTORY</a>	<a href="#">VTOC</a>	<a href="#">VTOC-UPDATE</a>
<a href="#">WRITE-SPOOL</a>	<a href="#">WRITE-UNIX-FILE</a>		

This chapter covers the following topics:

## General Information

---

- [Global Fields](#)
- [Global Error Codes](#)
- [Order of Information returned by Views](#)

The description of each view in this section begins with a header subsection containing the following general information about the view:

Item	Meaning
File	The file number assigned to the view within Entire System Server. This number must not be changed.
Opsys	Operating system(s) to which the view applies.
Statement	The statement you must use in your Natural programs to access the view. This is either <code>FIND</code> or <code>PROCESS</code> , depending on the view and the required function.
Task	A short description of the purpose of the view. This description is based on the online help text provided for each view in the online tutorial (see <a href="#">Online Tutorial</a> ).



**Note:** The view name may be changed by the Entire System Server Administrator. The file number and access statement cannot be changed.

### Example:

You will find this header subsection for the view `ACTIVE-JOBS`:

Item	Meaning
File	29
Statement	<code>FIND</code>
Task	Retrieve the tasks that are currently active in the system and get information about them (for example, the amount of CPU time already used by the tasks).

Each view description contains the following information for fields defined to the view:

Item	Meaning	
Dictionary Field Name	The name of the field in Natural.	
F/L	Field format and length:	
	A	Alphanumeric
	B	Binary
	D	Date
	N	Numeric
	T	Time
Mu	For fields that can be specified more than once, this column gives the maximum number of occurrences.	
DE	Descriptor.  D in this column means that this field name can be specified in the WITH clause of the FIND statement or the USING clause of the PROCESS statement. These fields support the search criteria available for the FIND statement (see <i>Getting Started</i> ) where this is appropriate.	

Item	Meaning
Remarks	General remarks concerning the field, for example, whether it is required, or whether it is dependent on a particular function.

**Example:**

The following table is the overview of some fields for view COPY-FILE:

Dictionary Field Name	F/L	Mu	DE	Remarks
Fields:				
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N3		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
FROM-DSNAME	A54		D	Required
FROM-PRODUCT	A1		D	
FROM-PASSWORD	A32		D	
TO-DSNAME	A54		D	Required

**Global Fields**

Certain fields are common to all views. These are known as *global fields* and do not appear in the full description of each field in this section (though they are included in the field overview for each view). The global fields are:

Field Name	Type/Length
ERROR-CODE	(N3)

Message code returned. For the meaning of message codes, see the Entire System Server *Messages and Codes* documentation.

Field Name	Type/Length
ERROR-TEXT	(A58)

Message text. For the meaning of message, see the Entire System Server *Messages and Codes* documentation. .

Field Name	Type/Length
NODE	(N3)

Number of the Entire System Server node to be addressed. Typically, the node number is required if you are working in a distributed environment and you wish to perform a function on a different computer in the network (see also *Using the Entire System Server* in the *Entire System Server Installation and Customization* documentation).

Field Name	Type/Length
NODE - NAME	(A16)

Name of the Entire System Server node to be addressed. This field is optional. For further information, see [Using Entire System Server in a Multi-Computer Environment](#) in the section [Getting Started](#).

Field Name	Type/Length
SYSTEM-MESSAGE-CODE	(A10)

System error code specific to the operating system. A code returned in the `ERROR-CODE` field can translate to any of a number of operating-system-specific system codes.

If any call to Entire System Server gets an error code of 508 with the error text `ESY5508 ADABAS response code :1:` returned from ESY, then the field `SYSTEM-MESSAGE-CODE` is filled with the appropriate Adabas response code in the form `ADAxxx`, where `xxx` is the Adabas response code.

## Global Error Codes

Certain error codes may be returned with any view. These are known as *Global Error Codes*. Each view description in this section contains a table with possible error codes relevant to the view. The table below contains a list of global error codes. A full explanation of error codes is given in the *Entire System Server Messages and Codes* documentation.

Code	Text
0	Request completed successfully
507	Too many parallel ESY requests.
508	Adabas response code xxx returned from ESY.
510	Logon required.
520	No core available (ASIZE).
521	NATPNI/NATPNIP unresolved.
774	No core available.
776	Request was cancelled.
777	Request has abended.

Code	Text
999	Entire System Server node <i>nnn</i> not active.

### Order of Information returned by Views

Unless otherwise noted, the default return order of information returned by view processors accessed by `FIND` (but not `FIND (1)` for reading views) is not guaranteed to be in any specific order. The views that have a guarantee of default order are:

- `CONSOLE`
- `CONSOLE-LOG`
- `IDCAMS`
- `IEBCOPY`
- `LIB-DIRECTORY`
- `LIB-ZAP`
- `NET-OPER`
- `READ-FILE`
- `READ-SPOOL`
- `SYSTEM-COMMAND`

More information regarding a specific order of returned information can be found in the appropriate view description.

If information needs to be returned in a specific order, the Natural `SORT` statement can be used. See the Natural Statements manual for more information.

All views accessed by `PROCESS` or `FIND (1)` (update views) will deliver data in the order received by the program.

## View Summary

---

- [File and Catalog Management](#)
- [Spool / Job Management](#)
- [System Maintenance](#)
- [Miscellaneous](#)

This subsection summarizes Entire System Server views according to their functional area. Together with the view name, the operating systems to which the view applies is given. The third column gives a short description of the view's function.



## File and Catalog Management

View Name	Description	File No.
CATALOG	List catalog information.	8
CATALOG-UPDATE	Perform catalog maintenance.	10
COPY-FILE	Copy files. Copying can be performed from node to node.	37
FILE-ALLOCATE	Allocate dataset to disk.	9
FILE-ATTRIBUTES	Display attributes of a dataset.	1
FILE-MAINTENANCE	Compress dataset or release unused space.	18
IDCAMS	Run IDCAMS utility.	14
IEBCOPY	Run IEBCOPY utility.	17
LIB-DIRECTORY	Read directory entries.	3
LIB-UPDATE	Perform operations on directory.	5
LOAD-MODULE	Read information on load module. 44	
READ-FILE	Read records from a dataset.	2
READ-UNIX-FILE	This view makes it possible to read data from files in the z/OS UNIX file system.	96
UNIT-ATTRIBUTES	Read information on I/O units.	6
UNIX-DIRECTORY	This view makes it possible to display directory information related to a z/OS UNIX file system.	97
VTOC	Read VTOC entries for a volume.	4
VTOC-UPDATE	Maintain VTOC entries.	7
WRITE-FILE	Write records to a dataset.	204
WRITE-UNIX-FILE	This view makes it possible to write data to files in the z/OS UNIX file system.	215

## Spool / Job Management

View Name	Description	File No.
ACTIVE-JOBS	Read information on active jobs.	29
ALLOCATIONS	Read allocations for a job.	22
READ-SPOOL	Read spool records for a job.	12
SPOOL-FILES	Read and maintain spool files for a given job.	36
SPOOL-QUEUE	Read entire spool queue.	11
SPOOL-UPDATE	Change status of job.	13
SUBMIT	Submit job.	200
WRITE-SPOOL	Write records to spool.	203

**System Maintenance**

View Name	Description	File No.
ACCOUNTING	Read accounting information.	34
ADDRESS-SPACE	Read address space information.	21
CONSOLE	Perform operations on operator console.	35
CONSOLE-LOG	Read console log.	25
DEVICE-NAMES	Read generic device names.	30
LIB-ZAP	Run superzap utility (AMASPZAP).	16
LOADED-MODULES	Read modules loaded by a job.	23
MAIN-STORAGE	Read main storage content for a job.	20
NET-OPER	Execute VTAM operator commands and display results.	15
SYSTEM-INFO	Read system information.	26
TCB	Read task information for a job.	24

**Miscellaneous**

View Name	Description	File No.
AUTHORIZED-LIBRARIES	Display a list of APF authorized data sets.	50
COMMON-DATA	Perform operations on shared main storage data.	33
CHECK-SECURITY	Query external security system as to whether user is allowed to access resource.	45
EVENTING	Perform program-to-program communication.	40
NATPROC-LOGON	Perform logon/logoff to Entire System Server.	190
NATPROC-USERS	Read Entire System Server users currently active and optionally cancel users.	191
RECEIVE-EMAIL	This view provides the support for receiving e-mails using IMAP protocol	70
RESOURCE-CONTROL	Manage resources using ENQ/DEQ.	32
SEND-EMAIL	This view provides the support for sending electronic mails.	212
SEND-MESSAGE	Send message to console and/or Com-plete, TSO or TIAM user.	19
SYSTEM-COMMAND	Execute TSO commands.	46

# 7 ACCOUNTING

---

■ Fields .....	44
■ Relevant Error Codes .....	45
■ Field Descriptions .....	45

<b>File</b>	34
<b>Statement</b>	FIND
<b>Task</b>	Read from SMF records.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
ACTIVE	A3		D	Relevant with FILE-ID='LIST'.
DATE	N5		D	
DATX	D		D	
DIRECTION	A1		D	
DSNAME	A44		D	Required unless FILE-ID='LIST'.
FILE-ID	A8		D	Required.
JOB-NAME	A8		D	
RBA	N9		D	
RECORD-LENGTH	N5		D	
RECORD-TYPE	N3		D	Required.
RECORD	A253		D	
SEGMENT-LENGTH	B2		D	
SEGMENT-NUMBER	N5		D	
START-RBA	N9		D	
SUB-TYPE	N3		D	
SYSTEM-ID	A4		D	
TIME	N6		D	
TIMX	T		D	
TOTAL-BLOCKS	N7		D	Relevant with FILE-ID='LIST'.
USED-BLOCKS	N7		D	Relevant with FILE-ID='LIST'.
VOLSER	A6		D	Relevant with FILE-ID='LIST'.

## Relevant Error Codes

Code	Text
640	Error generating VSAM control blocks.
641	Error :1: while opening SMF or VSAM file.
642	Error :1: while reading SMF or VSAM file.
643	SMF not active / not recording.
644	Invalid file ID.
645	Invalid RBA was specified.
650	Invalid sequential file.
701	DSNAME missing.
781	Unable to obtain storage for work area extension.
902	Dynamic allocation failed.
990	Field record not found in format buffer.
993	Cannot open file.

## Field Descriptions

Field Name	Type/Length
ACTIVE	(A3)

Relevant for FILE-ID='LIST'. Possible options:

Option	Explanation
NO	This is not the active SMF file.
YES	This is the active SMF file.

The individual types, lengths and operating systems for the fields are as follows:

Field Name	Type/Length
DATE	(N5)

The date of the record in the format *YYDDDD*, taken from the SMF record prefix.

Field Name	Type/Length
DATX	(D)

The date in internal format, taken from the SMF record prefix.

Field Name	Type/Length
DIRECTION	(A1)

Retrieval direction. Possible values:

Value	Explanation
F	Read forward (default).
B	Read backwards.

The individual types, lengths and operating systems for the fields are as follows:

Field Name	Type/Length
DSNAME	(A44)

- For FILE-ID='LIST', the names of the SMF data sets are returned in this field.
- For FILE-ID='MANX', specify the name of the SMF data set from which the SMF records are to be read.
- For FILE-ID='LOGS', specify the name of the SMF log stream from which the SMF records are to be read.
- For FILE-ID='SEQ', specify the name of the sequential data set from which the SMF records are to be read.

Field Name	Type/Length
FILE-ID	(A8)

Possible values:

Value	Explanation
LIST	Return a list of SMF data sets and other relevant data.
MANX	Read records from the SMF data set specified in DSNAME.
LOGS	Read records from the SMF log stream specified in DSNAME.
SEQ	Read dumped SMF records from the sequential data set specified in DSNAME.

The individual types, lengths and operating systems for the fields are as follows:

Field Name	Type/Length
JOB - NAME	(A8)

This field follows the SMF record prefix. For most record types, it contains the job name.

Field Name	Type/Length
RBA	(N9)

Relative byte address of the record.

Field Name	Type/Length
RECORD	(A253)

The SMF record / segment.

Field Name	Type/Length
RECORD - LENGTH	(N5)

Length of the entire record (not the segment length).

Field Name	Type/Length
RECORD - TYPE	(N3)

The type of the record, taken from the SMF record prefix.

Field Name	Type/Length
SEGMENT - NUMBER	(N5)

Segment number within the record.

Field Name	Type/Length
SEGMENT - LENGTH	(B2)

Length of the segment.

Field Name	Type/Length
START - RBA	(N9)

The relative byte address of the first record to be read. If omitted, the file is read from the start or end, depending on the setting of `DIRECTION`.

Field Name	Type/Length
SUB-TYPE	(N3)

SMF subtype.

Field Name	Type/Length
SYSTEM-ID	(A4)

System ID, taken from the SMF record prefix.

Field Name	Type/Length
TIME	(N6)

The time of the record in the format *HH:MM:SS*, taken from the SMF record prefix.

Field Name	Type/Length
TIMX	(T)

The time of the record in the format *YYDDDD*, taken from the SMF record prefix.

Relevant when `FILE-ID='LIST'`. Number of blocks allocated to the SMF file.

Field Name	Type/Length
USED-BLOCKS	(N7)

Relevant when `FILE-ID='LIST'`. Number of blocks used in the SMF file.

Field Name	Type/Length
VOLSER	(A6)

Relevant when `FILE-ID='LIST'`. Volume serial number of the SMF file.



## 8 ACTIVE-JOBS

---

■ Fields .....	50
■ Relevant Error Codes .....	65
■ Field Descriptions .....	51
■ Examples .....	56

<b>File</b>	29
<b>Statement</b>	FIND
<b>Task</b>	Retrieve the tasks that are currently active in the system and get information about them; for example, the amount of CPU time already used by the tasks.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
CPU-USED	N7.2		D	
DISPATCHING-PRIORITY	B1		D	
JOB-ID	A8		D	
JOB-NAME	A8		D	
JOB-NUMBER	N7		D	
STATUS	A8		D	
SYSTEM-MESSAGE-CODE	A10			
TYPE	A6		D	
REGION-ALLOCATED-BELOW	N7		D	
REGION-LIMIT-BELOW	N7		D	
REGION-ALLOCATED-ABOVE	N7		D	
REGION-LIMIT-ABOVE	N7		D	
Dictionary Field Name	F/L	Mu	DE	Remarks
ADDRESS	B4			
ASID	N4		D	
CLASSES	A6		D	Relevant with TYPE=JOB
DISPATCHABLE	A3		D	
ECPU-USED	N7.2		D	
JES-INIT-ID	A4		D	Relevant with TYPE=JOB
PROC-NAME	A8		D	
QUESCE	A3			
REGION	N7		D	
RESOURCE-GROUP	A8			
SERVER	A3			

Dictionary Field Name	F/L	Mu	DE	Remarks
SERVICE-CLASS	A8			
SERVICE-CLASS-PERIOD	N3			
SIO-CUNT	N11		D	
STEP-NAME	A8		D	
TCB	B4		D	
WORKLOAD	A8			
ZIIP-USED	N7.2		D	Normalized time
ZIIP-GP-USED	N7.2		D	

## Relevant Error Codes

Code	Text
830	JES interface is not active.
831	Error during queue initialization

## Field Descriptions

Field Name	Format/Length
ADDRESS	(B4)

ASCB address.

Field Name	Format/Length
ASID	(N4)

Address space identifier.

Field Name	Format/Length	Remarks
CLASSES	(A6)	Relevant when TYPE=JOBS: batch initiator classes

Field Name	Format/Length
CPU-USED	(N7.2)

Field Name	Format/Length
DISPATCHABLE	(A3)

Dispatchability of address space. Possible values:

Value	Explanation
NO	Address space is not dispatchable
YES	Address space is dispatchable

Field Name	Format/Length
DISPATCHING-PRIORITY	(B1)

Dispatching priority.

Field Name	Format/Length
ECPU-USED	(N7.2)

The amount of CPU consumed by the address space / task including preemptable-class CPU time (format *SSSSS.HH*).

Field Name	Format/Length
JES-INIT-ID	(A4)

Relevant when TYPE=JOB: JES batch initiator identifier.

Field Name	Format/Length
JOB-ID	(A8)

Job number in alphanumeric format. In case of numeric job numbers, the job number will also be returned in field JOB-NUMBER.

Field Name	Format/Length
JOB-NAME	(A8)

Name of the job. This is taken from the job card.

Field Name	Format/Length
PROC - NAME	(A8)

Name of the procedure currently being executed.

Field Name	Format/Length
QUIESCE	(A3)

Quiesce Indicator (YES/NO) (indicates if address space is quiesced). Relevant when TYPE=JOB: JES batch initiator identifier.

Field Name	Format/Length
REGION	(N7)

Amount of real storage used by the address space in Kbytes.

Field Name	Format/Length
REGION-ALLOCATED-BELOW	(N7)

Amount of virtual storage allocated below the 16 MB line (in KB).

Field Name	Format/Length
REGION-LIMIT-BELOW	(N7)

Amount of virtual storage that can be allocated below the 16 MB line (in KB).

Field Name	Format/Length
REGION-ALLOCATED-ABOVE	(N7)

Amount of virtual storage allocated above the 16 MB line (in KB).

Field Name	Format/Length
REGION-LIMIT-ABOVE	(N7)

Amount of virtual storage that can be allocated above the 16 MB line (in KB).

Field Name	Format/Length
RESOURCE - GROUP	(A8)

Resource Group Name .

Field Name	Format/Length
SERVER	(A8)

Server indicator (YES/NO) indicates whether or not resource goals are being honored.

Field Name	Format/Length
SERVICE - CLASS	(A8)

Service class name .

Field Name	Format/Length
SERVICE - CLASS - PERIOD	(N3)

Service class period .

Field Name	Format/Length
SIO - COUNT	(N11)

Number of I/O operations performed so far.

Field Name	Format/Length
STATUS	(A8)

**Possible values:**

Value	Explanation
<i>blank</i>	Address space is swapped in.
NON - SWAP	Address space is non-swappable.
SWAP - OUT	Address space is swapped out.
TERM	Address space is terminating.
V=R	Running in real memory.

Field Name	Format/Length
STEP-NAME	(A8)

Name of the step currently being executed.

Field Name	Format/Length
TCB	(B4)

TCB address of first ready task for this address space.

Field Name	Format/Length
TYPE	(A6)

Type of job. Possible values:

Job Type	Explanation
JOB INI STC TSU	Batch job JES initiator started task TSO user

Field Name	Format/Length
WORKLOAD	(A8)

Workload name .

Field Name	Format/Length
ZIIP-USED	(N7.2)

[Normalized] Enclave zIIP time - the amount of time the enclave has run on zIIP (format SSSSS.HH).

To reset the zIIP times at job step, reset the fields in the job step initiation exit IEFUSI. An example is supplied by IBM in SYS1.SAMPLIB(IEEUSI). You can reset the zIIP time at job step with any program running in Key 0.

Field Name	Format/Length
ZIIP-GP-USED	(N7.2)

Eligible zIIP time on GP - the amount of time the enclave has run on GP, which was eligible to run on zIIP (format SSSSS.HH).

## Examples

---

```
...  
  FIND ACTIVE-JOBS WITH NODE = 148  
                        AND CPU-USED < 1000  
*  
  IF ACTIVE-JOBS.ERROR-CODE NE 0  
    WRITE ACTIVE-JOBS.ERROR-TEXT  
    ESCAPE ROUTINE  
  END-IF  
*  
  DISPLAY ACTIVE-JOBS.JOB-NAME  
          ACTIVE-JOBS.JOB-ID  
          ACTIVE-JOBS.TYPE  
          ACTIVE-JOBS.STATUS  
          ACTIVE-JOBS.CPU-USED  
  END-FIND  
...
```

Result :

JOB-NAME	JOB-ID	TYPE	CPU	STATUS
...				
XCOM148	2975	STC	68.04	NON-SWAP
INIT		INI		IDLE
DELINDEX	2988	JOB	13.45	
WKK	2802	TSU	2.95	SWAP-OUT
...				



# 9 ADDRESS-SPACE

---

■ Fields .....	58
■ Field Descriptions .....	58

<b>File</b>	21
<b>Statement</b>	FIND
<b>Task</b>	Retrieve information about all active address space. You can use this view to monitor the activities on a system.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
ADDRESS	B4			
JOB-NAME	A8		D	
TCB	B4		D	
ASID	N4		D	
STATUS	A8		D	
DISP	A3		D	
TYPE	A3		D	
CPU	N7.2		D	
REGION	N5		D	

## Field Descriptions

---

Field Name	Format/Length
ADDRESS	(B4)

Space control block address.

Field Name	Format/Length
ASID	(N4)

Address space identifier.

CPU	(N7.2)
-----	--------

Amount of CPU consumed by address space, in the format *SSSSSSS.HH*.

Field Name	Format/Length
DISP	(A3)

Dispatchability of address space. Possible values:

Value	Explanation
NO	Address space is not dispatchable.
YES	Address space is dispatchable.

Field Name	Format/Length
JOB-NAME	(A8)

Name of the job, taken from the job card or procedure name.

Field Name	Format/Length
REGION	(N5)

Amount of real storage used in the address space in Kbytes.

Field Name	Format/Length
STATUS	(A8)

Status of address space. Possible values:

Value	Explanation
<i>blank</i>	Address space is swapped in.
NON-SWAP	Address space is non-swappable.
SWAP-OUT	Address space is swapped out.
TERM	Address space is terminating.
V=R	Running in real memory.

Field Name	Format/Length
TCB	(B4)

TCB address of first ready task for this address space.

Field Name	Format/Length
TYPE	(A3)

Type of job. Possible values:

Value	Explanation
JOB	Batch job.
STC	Started task.
TSU	TSO user.

# 10

## ALLOCATIONS

---

■ Fields .....	62
■ Relevant Error Codes .....	63
■ Field Descriptions .....	63

## ALLOCATIONS

---

<b>File</b>	22
<b>Statement</b>	FIND
<b>Task</b>	Reads information relating to files allocated to the specified job via DD statements. Files allocated dynamically are also returned.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
DDNAME	A8		D	
VOLSER	A6		D	
DSNAME	A54		D	
CLASS	A8		D	
ACCESS	A8		D	
LRECL	N5		D	
BLKSIZE	N5		D	
DSORG	A4		D	
JOB-NAME	A8		D	Required.
STEP-NAME	A8			
PROC-NAME	A8			
UNIT	A3		D	
MEMBER	A10		D	
IO-COUNT	N11		D	
RECFM	A5		D	
TCB-ADDRESS	B4		D	
PATH-NAME	A253		D	

## Relevant Error Codes

Code	Text
805	Invalid TCB address.

## Field Descriptions

Field Name	Format/Length
ACCESS	(A8)

Dataset is currently open as:

Value	Explanation
<i>blank</i>	Not open.
INOUT	Open for input, then for output.
INPUT	Open for input only.
OUTIN	Open for output, then for input.
OUTPUT	Open for input only.
RDBACK	Read backwards.
UPDATE	Open for update.
VSAM	VSAM dataset.

Field Name	Format/Length
BLKSIZE	(N5)

Field Name	Format/Length
CLASS	(A8)

Dataset classification. Possible options:

Option	Explanation
DUMMY	Dummy dataset.
SYSIN	JES SYSIN dataset.
SYSOUT	JES SYSOUT dataset.

Field Name	Format/Length
DDNAME	(A8)

Data definition name.

Field Name	Format/Length
DSNAME	(A54)

Dataset name for DDNAME.

Field Name	Format/Length
DSORG	(A4)

If the dataset is open, organization of dataset.

Field Name	Format/Length
IO-COUNT	(N11)

Number of I/O operations performed so far.

JOB-NAME	(A8)	
----------	------	--

Name of job.

Field Name	Format/Length
LRECL	(N5)

Field Name	Format/Length
MEMBER	(A10)

Member name used for DDNAME, for example, DSNAME(MEMBER).



Field Name	Format/Length
PATH - NAME	(A253)

The path name of a z/OS UNIX file. This may be a generic path name.

Field Name	Format/Length
PROC - NAME	(A8)

Current procedure name.

Field Name	Format/Length
RECFM	(A5)

Field Name	Format/Length
STEP - NAME	(A8)

Current step name.

Field Name	Format/Length
TCB - ADDRESS	(B4)

TCB address of the requested job.

Field Name	Format/Length
UNIT	(A3)

Unit on which DDNAME is allocated.

Field Name	Format/Length
VOLSER	(A6)

Volume on which DDNAME is allocated.



# 11

## AUTHORIZED-LIBRARIES

---

■ Fields .....	68
■ Relevant Error Codes .....	68
■ Field Descriptions .....	68
■ Example: Using AUTHORIZED-LIBRARIES View .....	69

<b>File</b>	50
<b>Statement</b>	FIND
<b>Task</b>	Display a list of APF authorized data sets.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A44		D	Data set or library
VOLSER	A6		D	Volume or *SMS*
DEVICE	B4			
FILE-SYSTEM	A3		D	
PREFIX	A3		D	
SERIES	A8		D	

## Relevant Error Codes

---

Code	Text
782	CSVAPF LIST <retcode>< reason-code>

## Field Descriptions

---

Field Name	Format/Length
DSNAME	(A44)

Name of the data set or its prefix.

All APF authorized data sets are returned as an unordered list.

Field Name	Format/Length
VOLSER	(A6)

Volume of the data set, or \*SMS\* if the volume resides on an SMS controlled device.

## Example: Using AUTHORIZED-LIBRARIES View

Assume the following datasets exist:

The example program ...

```
FIND AUTHORIZED-LIBRARIES WITH  
    DSNAME=PPEX.*
```

```
DISPLAY DSNAME VOLSER
```

... returns the following information:

DSNAME	VOLSER
PPEX.IAF901.LOAD	*SMS*
PPEX.IAF901.LOAD.DEV	*SMS*
PPEX.IMS.RESLIB	DBDC10
PPEX.MLC124.LOAD	*SMS*

---

# 12 CATALOG

---

■ Fields .....	72
■ Relevant Error Codes .....	73
■ Field Descriptions .....	73
■ Example: Using CATALOG View .....	76

<b>File</b>	8
<b>Statement</b>	FIND
<b>Task</b>	This view displays the catalog information of a specified file.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required
VOLSER	A6		D	
TYPE	A8		D	
Dictionary Field Name	F/L	Mu	DE	Remarks
DEVICE	B4			
FILE-SYSTEM	A3		D	
PREFIX	A3		D	
SERIES	A8		D	
Dictionary Field Name	F/L	Mu	DE	
CLASS	A4		D	
NUMBER-OF-VOLUMES	N3			
OPTION	A8		D	
USER-CATALOG	A44		D	
VOLUME-SEQUENCE	N3			



## Relevant Error Codes

Code	Text
562	Catalog entry not found.
566	Syntax error in catalog name.
567	Invalid OPTION, specify LONG or USERCAT
786	Unable to obtain / release storage for CSI work area.
787	CSI request failed, Module :1:, Reason :2:, RC :3:
788	Unable to substitute :1:, RC :2:
789	Unable to get UCB copy for :1:, RC :2:

## Field Descriptions

Field Name	Format/Length
CLASS	(A4)

Device class (for example, DASD).

Field Name	Format/Length
DEVICE	(B4)

The internal UCBTYP device code which identifies the device type on which the dataset resides.

Field Name	Format/Length
DSNAME	(A54)

Dataset name or dataset name prefix.

If the value specified is a prefix, information on all datasets with that prefix (including DSNAME itself) is retrieved (see the field PREFIX),

As an extension to the search criteria described in [Search Criteria with the FIND Statement](#) in Section [Getting Started](#), a double asterisk (\*\*) may be used to represent zero or more qualifiers, whereas a single asterisk is used to specify either a qualifier or one or more characters within a qualifier. A double asterisk cannot precede or follow any characters; it must be preceded or followed by either a period or a blank.



**Note:** Dataset names are returned in the order of their corresponding catalog records, i.e. not necessarily in ascending order.

Field Name	Format/Length
FILE-SYSTEM	(A3)

Indicates if the catalog entry describes a z/OS UNIX file system data set (HFS or #). Possible values:

<i>blank</i>	Not a file system data set.
HFS	HFS data set.
zFS	zFS data set.

Field Name	Format/Length
NUMBER-OF-VOLUMES	(N3)

Number of volumes of dataset.

Field Name	Format/Length
OPTION	(A8)

Possible options:

Option	Explanation
LONG	Scan entire catalog. This is required if a file name value such as *MACLIB* is specified. The catalog whose name is given in USER-CATALOG is scanned. If the user catalog name is not specified, the system catalog is scanned.
USERCAT	Return names of all user catalogs in the USER-CATALOG field.

Field Name	Format/Length
PREFIX	(A3)

Possible options:

Option	Explanation
YES	Default. Information on datasets with the value of the DSNAME field as prefix is retrieved.
NO	Value of the DSNAME field is taken as absolute dataset name, not a prefix.

Field Name	Format/Length
SERIES	(A8)

Device series (for example, 3330-1).

Field Name	Format/Length
TYPE	(A8)

Dataset type. Possible values:

ALIAS	Alias.
AIX	Alternate index
CLUSTER	VSAM cluster.
DATA	VSAM data component.
GDG	Generation data group.
GDS	Generation dataset.
INDEX	VSAM index component.
NONVSAM	Non-VSAM dataset.
PATH	VSAM path.
USERCAT	User catalog.

Field Name	Format/Length
USER-CATALOG	(A44)

Name of the user catalog in which the dataset is cataloged (see also `OPTION` field).

Field Name	Format/Length
VOLSER	(A6)

Volume serial number of dataset. This field supports search criteria.

Field Name	Format/Length
VOLUME-SEQUENCE	(N3)

Volume sequence (tape datasets only).

## Example: Using CATALOG View

---

Assume the following datasets exist:

- A.B.C
- A.B.C.D
- A.B.C.E

The example program ...

```
FIND CATALOG WITH
  DSNAME=<....>
  PREFIX=<....>
DISPLAY DSNAME
```

... returns the following information:

DSNAME	PREFIX	RETURNED DSNAMEs
A.B.C	NO	A.B.C
A.B.C	YES	A.B.C A.B.C.D A.B.C.E
A.B	YES	A.B.C A.B.C.D A.B.C.E
A.B	NO	(none) Error 5562 - Catalog entry not found.

DSNAME	PREFIX	RETURNED DSNAMEs
A.B.C	NO	A.B.C
A.B.C	YES	A.B.C A.B.C.D A.B.C.E
A.B	YES	A.B.C A.B.C.D A.B.C.E
A.B	NO	(none) Error 5562 - Catalog entry not found.

# 13

## CATALOG-UPDATE

---

■ Fields .....	78
■ Relevant Error Codes .....	78
■ Field Descriptions .....	79

<b>File</b>	10
<b>Statement</b>	PROCESS
<b>Task</b>	Perform catalog maintenance functions.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required.
VOLUMES	A240		D	
DEVICE	A8		D	
FILE-SEQUENCE	N3		D	
FUNCTION	A8		D	Required.

## Relevant Error Codes

---

Code	Text
571	DSNAME operand missing.
600	Unknown operation.
602	Device is invalid.
603	Index/Alias missing.
604	No volumes specified.
658	Dataset is not catalogued.

## Field Descriptions

---

Field Name	Format/Length
DEVICE	(A8)

Device code, for example, 3400-3.

Field Name	Format/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Format/Length
FILE-SEQUENCE	(N3)

Used for tape files. This value is used for the first volume only.

Field Name	Format/Length
FUNCTION	(A8)

Function to be performed. Possible values:

Value	Explanation
CATLG	Catalog new entry.
RECATLG	Recatalog an existing entry.
UNCATLG	Remove a catalog entry.

Field Name	Format/Length
VOLUMES	(A240)

Volume list. The maximum is 40 entries of 6 bytes each.

Number of versions of a file saved in a backup archive.





# 14

## CHECK-SECURITY

---

■ Fields .....	82
■ Field Descriptions .....	82

<b>File</b>	45
<b>Statement</b>	PROCESS
<b>Task</b>	Asks an external security system (RACF, ACF2, TOP-SECRET) whether user is authorized to use a given resource, for example, a dataset.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
Dictionary Field Name	F/L	Mu	DE	Remarks
ENTITY	A200		D	
CLASS	A8		D	
ATTRIBUTE	A8		D	
INSTALLATION-PARMS	A250		D	
ALLOWED	A8			

## Field Descriptions

---

Field Name	Format/Length
ALLOWED	(A8)

Output field. Access allowed indicator. One of these values will appear in this field:

Value	Explanation
ERROR- <i>nn</i>	Error returned by security system.
NO	Access not allowed.
NOSEC	Security not installed.
YES	Access allowed.

Field Name	Format/Length
ATTRIBUTE	(A8)

Entity attribute. Check whether user is allowed to access the resource with one of the following attributes as defined in the security system:

Attribute	Explanation
ALTER	Permission to change external attributes of resource.
CONTROL	Permission to create resource.
READ	Permission to read resource.
UPDATE	Permission to update resource.

Field Name	Format/Length
CLASS	(A8)

Class of entity, for example DATASET. Default is FACILITY.

Field Name	Format/Length
ENTITY	(A200)

Entity to be security checked.

Field Name	Format/Length
INSTALLATION-PARMS	(A250)

Installation parameters to be passed to security system.



# 15

## COMMON-DATA

---

▪ Fields .....	86
▪ Relevant Error Codes .....	86
▪ Field Descriptions .....	87
▪ Example .....	89
▪ Supplementary Information about COMMON-DATA .....	95

<b>File</b>	33
<b>Statement</b>	FIND, PROCESS
<b>Task</b>	Share memory between multiple applications. This memory is accessed by a unique name and is split up into data slots. When this view is to be used, the startup parameter <code>CDALEN</code> must have a value of greater than 0 (zero).

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DATA-ID	A12		D	Required for all functions except LIST.
NUMBER-OF-ENTRIES	N5		D	Relevant for functions CREATE and LIST.
ENTRY-LENGTH	N3		D	Relevant for functions CREATE and LIST.
ENTRY-NUMBER	N5		D	Relevant for functions MODIFY and GET.
DATA	A250		D	Relevant for functions MODIFY and GET.
CURRENT-ENTRIES	N5		D	Relevant for functions MODIFY, GET, LIST, CLOSE.
DELETE-ENTRY	A3		D	Relevant for function MODIFY.
PROTECT	A8		D	
FUNCTION	A8		D	Required field.

## Relevant Error Codes

---

Code	Text
600	Unknown function.
621	Identifier missing / duplicate / not found.
622	NUMBER-OF-ENTRIES missing or invalid.
623	ENTRY-LENGTH missing or invalid.
624	ENTRY-NUMBER missing or invalid.
625	Cannot allocate area.
626	DATA missing.
627	Field position + length > 250.

Code	Text
629	Area is protected.
746	Serialization running in error.

## Field Descriptions

Field Name	Format/Length
CURRENT-ENTRIES	(N5)

Output field. The value of CURRENT-ENTRIES is set from the functions CLOSE, MODIFY, GET and LIST.

Field Name	Format/Length
DATA	(A250)

Relevant for the functions MODIFY and GET. The contents of the entry.

Function MODIFY is expecting the input record in DATA.

Function GET provides the contents of the record in output field DATA.

Field Name	Format/Length
DATA-ID	(A12)

DATA-ID identifies the name associated with an area of records in the COMMON-DATA. Required as input field in all functions except LIST.

Function LIST returns all existing DATA-IDs.

Field Name	Format/Length
DELETE-ENTRY	(A3)

Only used in the function MODIFY as input field.

Functions MODIFY and DELETE-ENTRY='YES' are used to remove the requested record identified by ENTRY-NUMBER.

Field Name	Format/Length
ENTRY-LENGTH	(N3)

The length of each entry in the area. Required input field in the function CREATE. Used as output field in functions CLOSE, MODIFY, GET, LIST.

Field Name	Format/Length
ENTRY-NUMBER	(N5)

Relevant for functions MODIFY and GET.

ENTRY-NUMBER is required as input field if the function MODIFY and DELETE-ENTRY='YES' is used. Otherwise it is not required and is determined implicitly.

The example program below exploits this feature. ENTRY-NUMBER is omitted for the function MODIFY to write all data records and for function GET to read all data records.

Field Name	Format/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
CLOSE	Free unused space in a given area.
CREATE	Create a new area identified by DATA-ID with size (NUMBER-OF-ENTRIES * ENTRY-LENGTH).
DELETE	Delete area identified by DATA-ID.
GET	Get record from given area.
LIST	Generate list of active areas.
MODIFY	Add, modify or delete a record in a given area.

Field Name	Format/Length
NUMBER-OF-ENTRIES	(N5)

The maximum number of entries in the area. Required as input field in function CREATE.

Used as output field in functions CLOSE, MODIFY, GET, LIST.



Field Name	Format/Length
PROTECT	(A8)

Field used to set or display protection attributes of an area in COMMON-DATA.

It is an input field when function `CREATE` is requested. It is an output field to display protection attributes via function `LIST`. If protection is omitted, all users are permitted to issue all functions to that area.

The following options are available to restrict the use of an area for other users:

Option	Explanation
DELETE	Area is DELETE protected. The functions GET, LIST and MODIFY are permitted. Other users can read and modify area but cannot delete it.
MODIFY	Area is MODIFY protected. Functions GET and LIST are permitted. Other users can issue function GET to read that area. It is not possible to modify and to delete it.
READ	Area is READ protected. Other users cannot issue any function except LIST. It is not possible to read, modify and delete that area.

## Example

The following example illustrates the usage of the different COMMON-DATA functions.

It consists of the following steps:

- list existing COMMON-DATA areas and status information `FUNCTION='LIST'`
- create an area in the COMMON-DATA pool `FUNCTION='CREATE'`
- write 5 records into the area `FUNCTION='MODIFY'`
- remove the third record `FUNCTION='MODIFY'`
- compress the area to the used size of 4 records `FUNCTION='CLOSE'`
- list the area and status information `FUNCTION='LIST'`
- display the contents of the records in the area `FUNCTION='GET'`
- remove the area and all records `FUNCTION='DELETE'`

```
DEFINE DATA LOCAL
1 COMMON-DATA VIEW OF COMMON-DATA
2 ERROR-CODE
2 ERROR-TEXT
2 SYSTEM-CODE
2 SYSTEM-MESSAGE-CODE
2 NODE
2 CURRENT-ENTRIES
2 DATA
2 DATA-ID
2 DELETE-ENTRY
2 ENTRY-LENGTH
2 ENTRY-NUMBER
2 FUNCTION
2 NUMBER-OF-ENTRIES
2 PROTECT
*
1 #DATA (A250)
1 #DATA-ID (A12) INIT <'MSGBOX1'>
1 #ERROR-ID (A30)
1 #MSGTEXT (A14) INIT <'Message number'>
1 #NODE (N3) INIT <148>
1 #I (N1)
1 #AREA-EXISTS (L) INIT <FALSE>
1 #PUT-HEADER (L) INIT <TRUE>
*
END-DEFINE
*****
*
* List all available areas in the COMMON-DATA pool and check if
* our DATA-ID is already created.
*
*****
MOVE 'COMMON-DATA Function LIST (*):' TO #ERROR-ID
*
FIND COMMON-DATA WITH NODE = #NODE
                     AND DATA-ID = '*'
                     AND FUNCTION = 'LIST'
*
    IF COMMON-DATA.ERROR-CODE NE 0
        PERFORM ERROR-HANDLER
        ESCAPE ROUTINE
    END-IF
*
    IF #PUT-HEADER EQ TRUE
*
        ASSIGN #PUT-HEADER = FALSE
        WRITE '+-----+'
            / '! COMMON-DATA LIST Overview before starting our example !'
            / '+-----+'
            // 'Common-Data-Area Number of Entries Current Entries'
            'Length of Entry'
```

```

/ ' _____ '
' _____ '

END-IF
*
WRITE COMMON-DATA.DATA-ID
  17X COMMON-DATA.NUMBER-OF-ENTRIES
  11X COMMON-DATA.CURRENT-ENTRIES
  12X COMMON-DATA.ENTRY-LENGTH
*
IF COMMON-DATA.DATA-ID EQ #DATA-ID
  ASSIGN #AREA-EXISTS = TRUE
END-IF
*
END-FIND
*
* Exit if area already created
*
IF #AREA-EXISTS EQ TRUE
  WRITE / '*** Sample cannot run. DATA-ID already created. ***'
  ESCAPE ROUTINE
END-IF
*
NEWPAGE
*****
*
* Create an area in the COMMON-DATA pool.
*
*****
MOVE 'COMMON-DATA Function CREATE' TO #ERROR-ID
*
PROCESS COMMON-DATA USING
  NODE = #NODE
  , DATA-ID = #DATA-ID
  , ENTRY-LENGTH = 100
  , FUNCTION = 'CREATE'
  , NUMBER-OF-ENTRIES = 10
*
IF COMMON-DATA.ERROR-CODE NE 0
  PERFORM ERROR-HANDLER
  ESCAPE ROUTINE
END-IF
*****
*
* Write 5 messages into the COMMON-DATA area.
*
*****
MOVE 'COMMON-DATA Function MODIFY (PUT):' TO #ERROR-ID
*
FOR #I = 1 TO 5
*
  COMPRESS #MSGTEXT #I INTO #DATA
*

```

```

        PROCESS COMMON-DATA USING
            NODE = #NODE
            , DATA = #DATA
            , DATA-ID = #DATA-ID
            , FUNCTION = 'MODIFY'
*
        IF COMMON-DATA.ERROR-CODE NE 0
            PERFORM ERROR-HANDLER
            ESCAPE ROUTINE
        END-IF
    END-FOR
*****
*
*
* Oops, message number 3 was wrong. Remove it.
*
*****
MOVE 'COMMON-DATA Function MODIFY (DELETE):' TO #ERROR-ID
*
PROCESS COMMON-DATA USING
    NODE = #NODE
    , DATA-ID = #DATA-ID
    , DELETE-ENTRY = 'YES'
    , ENTRY-NUMBER = 3
    , FUNCTION = 'MODIFY'
*
IF COMMON-DATA.ERROR-CODE NE 0
    PERFORM ERROR-HANDLER
    ESCAPE ROUTINE
END-IF
*****
*
* Compress allocated area to the size really used for messages.
*
*****
MOVE 'COMMON-DATA Function CLOSE:' TO #ERROR-ID
*
PROCESS COMMON-DATA USING
    NODE = #NODE
    , DATA = #DATA
    , DATA-ID = #DATA-ID
    , FUNCTION = 'CLOSE'
*
IF COMMON-DATA.ERROR-CODE NE 0
    PERFORM ERROR-HANDLER
    ESCAPE ROUTINE
END-IF
*****
*
* List our entry to check the status.
*
*****
MOVE 'COMMON-DATA Function LIST (1):' TO #ERROR-ID

```

```

*
FIND COMMON-DATA WITH NODE = #NODE
                     AND DATA-ID = #DATA-ID
                     AND FUNCTION = 'LIST'
*
  IF COMMON-DATA.ERROR-CODE NE 0
    PERFORM ERROR-HANDLER
    ESCAPE ROUTINE
  END-IF
*
  IF COMMON-DATA.DATA-ID NE #DATA-ID
    ESCAPE TOP
  END-IF
*
  WRITE '+-----+'
    / '! Status of our area in COMMON-DATA                !'
    / '+-----+'
    // 'Common-Data-Area Number of Entries Current Entries'
    'Length of Entry'
    / ' _____ '
    ' _____ '
*
  WRITE COMMON-DATA.DATA-ID
    17X COMMON-DATA.NUMBER-OF-ENTRIES
    11X COMMON-DATA.CURRENT-ENTRIES
    12X COMMON-DATA.ENTRY-LENGTH
*
END-FIND
*
NEWPAGE
*****
*
* Get all our entries (non-destructive GET).
*
*****
ASSIGN #PUT-HEADER = TRUE
MOVE 'COMMON-DATA Function GET:' TO #ERROR-ID
*
FIND COMMON-DATA WITH NODE = #NODE
                     AND DATA-ID = #DATA-ID
                     AND DELETE-ENTRY = 'NO'
                     AND FUNCTION = 'GET'
*
  IF COMMON-DATA.ERROR-CODE NE 0
    PERFORM ERROR-HANDLER
    ESCAPE ROUTINE
  END-IF
*
  IF #PUT-HEADER EQ TRUE
*
    ASSIGN #PUT-HEADER = FALSE
    WRITE '+-----+'

```

```

        / '!' Contents of our area in COMMON-DATA                                !'
        / '+-----+
        // 'Entry-number Data
        / '-----'
END-IF
*
WRITE COMMON-DATA.ENTRY-NUMBER
      7X COMMON-DATA.DATA (AL=50)
*
END-FIND
*****
*
* Remove area in the COMMON-DATA pool.
*
*****
MOVE 'COMMON-DATA Function DELETE' TO #ERROR-ID
*
PROCESS COMMON-DATA USING
      NODE = #NODE
      , DATA-ID = #DATA-ID
      , FUNCTION = 'DELETE'
*
IF COMMON-DATA.ERROR-CODE NE 0
  PERFORM ERROR-HANDLER
  ESCAPE ROUTINE
END-IF
*****
*
* ERROR-HANDLER
*
*****
DEFINE SUBROUTINE ERROR-HANDLER
  WRITE #ERROR-ID
      COMMON-DATA.ERROR-CODE
      COMMON-DATA.ERROR-TEXT
      COMMON-DATA.SYSTEM-CODE
      COMMON-DATA.SYSTEM-MESSAGE-CODE
END-SUBROUTINE
*
END

```

Output from above sample program:

```

Page 1                                00-11-10 09:02:02

+-----+
! COMMON-DATA LIST Overview before starting our example !
+-----+

Common-Data-Area  Number of Entries Current Entries Length of Entry
-----
TEST-BOX          7                      0                250

```

CONTAINER	20	0	50
Page 2			00-11-10 09:02:02
+-----+			
! Status of our area in COMMON-DATA !			
+-----+			
Common-Data-Area	Number of Entries	Current Entries	Length of Entry
MSGBOX1	4	4	100
Page 3	00-11-10	09:02:02	
+-----+			
! Contents of our area in COMMON-DATA !			
+-----+			
Entry-number	Data		
1	Message number 1		
2	Message number 2		
3	Message number 4		
4	Message number 5		

Five records have been written to the area MSGBOX1. After removing the third record and compressing the area, four records are available containing the messages 1, 2, 4, 5.

## Supplementary Information about COMMON-DATA

### What does COMMON-DATA do?

COMMON-DATA allows you to establish areas to save data records with a fixed record length. These records can be accessed from different applications. The usage is determined by the applications only, for example, when to create and to destroy data records. It is a service for an effective data exchange. The areas are labeled with unique names provided in field DATA-ID.

### Which Natural statements must be used with the various FUNCTIONS?

The functions LIST and GET should be requested with a FIND statement. All other functions (CLOSE, CREATE, DELETE, MODIFY) are designed as single requests and should be performed with a PROCESS statement.

### How does writing to COMMON-DATA work?

The function `MODIFY` is used to write records into the data area. The records will be saved in sequential order. The `ENTRY-NUMBER` can be omitted for writing records with the function `MODIFY`. The creation of the `COMMON-DATA` records with explicitly defined entry numbers requires an ascending sequential order. For example, it is not possible to write a record with Entry Number 3 if only Entry Number 1 has been written already.



# 16

## CONSOLE

---

■ Fields .....	98
■ Relevant Error Codes .....	99
■ Field Descriptions .....	99
■ Default Order of Data Returned .....	104

<b>File</b>	35
<b>Statement</b>	FIND, PROCESS
<b>Task</b>	Read operator console or issue console commands.

## Fields

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
FUNCTION	A8		D	Required.
JOB-ID	A8		D	Relevant with FUNCTION=DISPLAY, DIS-WTOR.
JOB-NAME	A8		D	Relevant with FUNCTION=WTOR.
JOB-TYPE	A6		D	Relevant with FUNCTION=DISPLAY, DIS-WTOR.
NETTO-TEXT	A253		D	Relevant with FUNCTION=DISPLAY, DIS-WTOR.
READ-DIRECTION	A1		D	Relevant with FUNCTION=DISPLAY.
RECORD-NUMBER	N9		D	Relevant with FUNCTION=DISPLAY.
REPLY-FLAG	A1			Relevant with FUNCTION=DISPLAY, DIS-WTOR.
REPLY-ID	A8		D	Relevant with FUNCTION=DIS-WTOR.
TEXT	A253		D	Relevant for function OP-CMD, default length: 80 characters.
TEXT-LENGTH	N3		D	Relevant for function OP-CMD, maximum value = 120
TIMX	T		D	
WAIT-TIME	B4		D	Relevant with FUNCTION=DISPLAY.
CONSOLE-ID	B1		D	Relevant with FUNCTION=DISPLAY.
REPLY	A80			Relevant with FUNCTION=WTOR.
RESPONSE-FLAG	A1			
HOLD-FLAG	A1			
DESCR-CODE-STRING	A16		D	
ROUTE-CODE-STRING	A28		D	
SEQUENCE-NUMBER	A8			
TEXT-FLAG	A1			
TIME-STAMP	A8		D	Relevant with FUNCTION=DIS-WTOR.

## Relevant Error Codes

Code	Text
530	Access denied by Security Facility.
600	Unknown function.
630	Console not defined or inactive.
699	GETVIS failed.
778	Not APF authorized.

## Field Descriptions

Field Name	Format/Length
CONSOLE-ID	(B1)

Only relevant for the `DISPLAY` function. The identifier of the console to be displayed. If the identifier is omitted, the master console is displayed.

Field Name	Format/Length
DESCR-CODE-STRING	(A16)

Descriptor codes for the console message. Each byte of the string corresponds to one of the descriptor codes 1-16. A byte contains 1 if the corresponding descriptor code is assigned, or 0 if it is not assigned.

Field Name	Format/Length
FUNCTION	(A8)

The function to be performed. Possible values are:

Value	Explanation
DISPLAY	Display console screen image.
DIS-WTOR	Display pending operator replies.
OP-CMD	Issue operator command.
WTO	Write to operator.
WTOR	Write to operator with reply.

The default length of a command line is 80 characters. However, it can be expanded up to 120 characters if field `TEXT-LENGTH` is accordingly specified as displayed in the following sample code for function `OP-CMD`:

```
PROCESS CONSOLE USING NODE = #NODE
, FUNCTION = 'OP-CMD'
, TEXT = #COMMAND-LINE
, TEXT-LENGTH = 120
GIVING ERROR-CODE ERROR-TEXT
```

Field Name	Format/Length
HOLD-FLAG	(A1)

Indicates if message is held by the system (has descriptor codes 1, 2, 3 or 11). Possible values:

Value	Explanation
N	No
Y	Yes

Field Name	Format/Length
JOB-ID	(A8)

Only relevant for function `DISPLAY` and `DIS-WTOR`. Job number (TSN) of job for which the message was created.

Field Name	Format/Length
JOB-NAME	(A8)

Only relevant for function `DIS-WTOR`. The job that issued the `WTOR`.

Field Name	Format/Length
JOB-TYPE	(A6)

Only relevant for function `DISPLAY` and `DIS-WTOR`. Type of job for which message was created, if this job is still active.

Field Name	Format/Length
NETTO-TEXT	(A253)

Only relevant for function `DISPLAY` and `DIS-WTOR`. Message text without the additional information added by the operating system at the creation of the console message.

Field Name	Format/Length
READ-DIRECTION	(A1)

Only relevant for function `DISPLAY`. Direction for reading console messages. Possible values:

Value	Explanation
B	Default. Backwards (that is, towards oldest message).
F	Forwards (that is, towards message last received).

The starting position of `READ-DIRECTION` can be specified in the `RECORD-NUMBER` field.

Field Name	Format/Length
RECORD-NUMBER	(N9)

Only relevant for function `DISPLAY`. The number of the console message is returned in this field. If used as input (descriptor), a start position can be given. Possible values:

Value	Explanation
0:	Start with latest record.
<i>n</i> :	Start with record <i>n</i> .
- <i>n</i> :	Start with latest record minus <i>n</i> records.

If the last record + 1 is selected and the value of the field `WAIT-TIME` is greater than 0, the system waits for the next message.

If the specified start position lies before the oldest available record, the oldest record is taken as the start position.

Field Name	Format/Length
REPLY	(A80)

Only relevant for function `WTOR`: the operator reply.

Field Name	Format/Length
REPLY - FLAG	(A1)

Only relevant for function DISPLAY and DIS-WTOR. Possible values:

Value	Explanation
N	Message requires no reply.
Y	Message requires a reply.

Field Name	Format/Length
REPLY - ID	(A8)

Only relevant for function DIS-WTOR. The identifier which must be used to reply to a write-to-operator-with-reply.

Field Name	Format/Length
RESPONSE - FLAG	(A1)

Indicates whether message text is the response to a command. Possible values:

Value	Explanation
N	No
Y	Yes

Field Name	Format/Length
ROUTE - CODE - STRING	(A28)

Routing codes for the console message. Each byte of the string corresponds to one of the routing codes 1 - 28. A byte contains 1 if the corresponding routing code is assigned, or 0 if it is not assigned.

Field Name	Format/Length
SEQUENCE - NUMBER	(A8)

Sequence number of the message since the last IPL.

Field Name	Format/Length
TEXT	(A253)

The command to be entered for function OP - CMD (operator command), default length = 80 characters.

Field Name	Format/Length
TEXT - FLAG	(A1)

Describes the type of message text. Possible values:

Value	Explanation
C	Control text (multi-line)
D	Data text ( " " )
E	End text ( " " )
L	Label text ( " " )
M	First line ( " " )
N	Normal text (single line)

Field Name	Format/Length
TEXT - LENGTH	(N3)

Length of field TEXT, maximum value = 120 characters. Note that using this field an operator command can exceed the default length (80 characters) up to a maximum length of 120 characters.

Field Name	Format/Length
TIME - STAMP	(A8)

Only relevant for function DIS - WTOR. Time stamp of the console message in format HH:MM:SS.

Field Name	Format/Length
TIMX	(T)

Time stamp in Natural internal format.

Field Name	Format/Length
WAIT - TIME	(B4)

Only relevant for function DISPLAY. Time in seconds to wait for the next message (see also the field RECORD - NUMBER). If no message arrives within the specified time, ERROR - CODE 537 is issued.

Up to ten delimiter characters to be used for tokenizing the record.

## Default Order of Data Returned

---

Messages are returned in timestamp order (oldest to newest).



# 17

## CONSOLE-LOG

---

■ Fields .....	106
■ Relevant Error Codes .....	107
■ Field Descriptions .....	107
■ Default Order of Data Returned .....	111

<b>File</b>	25
<b>Statement</b>	FIND
<b>Task</b>	Retrieve current and past console log data, for example, start and end of jobs and tasks, as well as important error and abend messages.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
DATA-SET	N5		D	
LOG-TIME	A8		D	
LOG-TEXT	A128		D	
LOG-ROUTE-CODE	A8		D	
LOG-RECORD-TYPE	A1		D	
LOG-REQUEST-TYPE	A1		D	
LOG-DATX	D		D	
LOG-TIMX	T		D	
RECORD-NUMBER	N9		D	
RECORD-LENGTH	N3		D	
RECORD	A253		D	
POSITION	B1		D	
TOKEN-VECTOR	A225		D	
NUMBER-OF-TOKENS	N3		D	
TOKEN-DELIMITERS	A10		D	
SCAN	A3		D	
SCAN-LIMIT	N7		D	
SCAN-TYPE	A1		D	
SCAN-LENGTH	N3		D	Relevant with SCAN-TYPE=A.
SCAN-COLUMN-FROM	N3		D	Relevant with SCAN-TYPE=A.
SCAN-COLUMN-TO	N3		D	Relevant with SCAN-TYPE=A.
DATA-SET-KEY	N11		D	
LOG-JOB-NUMBER	N7		D	
LOG-JOB-NAME	A8		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
LOG-REPLY-ID	A8		D	
LOG-SOURCE	A8		D	

## Relevant Error Codes

Code	Text
533	Requested number or records scanned.
537	Time limit reached.
699	GETVIS failed.
711	Logical Error occurred in Common JES Interface.
712	Request to Common JES Interface failed.
717	GENCB for ACB or RPL failed with RC:1:and RSN:2:
719	Unable to :1: SYSOUT dataset.
724	Requested job not found.
731	Error occurred during spool GET, RPLFDBK :1:
781	Unable to obtain storage for work area extension.
830	JES interface not active.

## Field Descriptions

Field Name	Format/Length
DATA-SET	(N5)

Requested dataset number of job SYSLOG.

Field Name	Format/Length
DATA-SET-KEY	(N1)

Unique dataset identification, offering much faster access than the dataset number. The dataset key can be obtained from the SPOOL-FILES view using job name SYSLOG.

Field Name	Format/Length
LOG-DATX	(D)

Date in Natural internal format.

Field Name	Format/Length
LOG-JOB-NAME	(A8)

Job name corresponding to the job number contained in the record. This only applies if the job is still active at calling time.

Field Name	Format/Length
LOG-JOB-NUMBER	(N7)

Job number, if contained in record.

Field Name	Format/Length
LOG-RECORD-TYPE	(A1)

Possible values:

Value	Explanation
N	Single-line message.
W	Single-line message with reply.
D	Data line of multi-line message.
E	Data/end line of multi-line message.
L	Label line of multi-line message.
M	The first line of a multi-line message.
O	Log command input.
S	Continuing previous line.
X	Entry from a source other than hardcopy or log command.

Field Name	Format/Length
LOG-SOURCE	(A8)

Source of the CONSOLE-LOG: SYSLOG or OPERLOG. SYSLOG is the default.

Field Name	Format/Length
LOG-REPLY-ID	(A8)

Reply ID of WTOR.

Field Name	Format/Length
LOG-REQUEST-TYPE	(A1)

Possible values :

Value	Explanation
C	Command issued by operator.
R	Command response.
I	Command issued internally.

Field Name	Format/Length
LOG-ROUTE-CODE	(A8)

Route codes.

Field Name	Format/Length
LOG-TEXT	(A128)

The pure log record.

Field Name	Format/Length
LOG-TIME	(A8)

Time stamp in log record.

Field Name	Format/Length
LOG-TIMX	(T)

Time in Natural internal format.

Field Name	Format/Length
NUMBER-OF-TOKENS	(N3)

Number of tokens in record.

Field Name	Format/Length
POSITION	(B1)

Offset in log record. The RECORD field will contain log record starting at this offset.

Field Name	Format/Length
RECORD	(A253)

Log record.

Field Name	Format/Length
RECORD-LENGTH	(N3)

Length of log record.

Field Name	Format/Length
RECORD-NUMBER	(N9)

Retrieve records from log starting at this relative record number. If a negative value (*-nnnnnnnn*) is specified, the *nnnnnnnn* most current log records are retrieved.

Field Name	Format/Length
SCAN	(A3)

Specify YES to return the first record that meets the selection criteria and all the following records.

Field Name	Format/Length
SCAN-COLUMN-FROM	(N3)

Relevant if SCAN-TYPE=A. Specifies the column number where the scan is to start. Default is 1.

Field Name	Format/Length
SCAN-COLUMN-TO	(N3)

Relevant if `SCAN-TYPE=A`. Specifies the column number where the scan is to end. Default is the end of the record.

Field Name	Format/Length
SCAN-LENGTH	(N3)

Relevant if `SCAN-TYPE=A`. Specifies the length of the scan string in field `RECORD`.

Field Name	Format/Length
SCAN-LIMIT	(N7)

Specifies the maximum number of records to be scanned before the record is selected. If the limit is reached and no record found, error code 533 is issued.

Field Name	Format/Length
SCAN-TYPE	(A1)

Specify `A` to perform an absolute scan. The wildcard symbols asterisk (\*) and underscore (\_) are treated as normal characters.

Field Name	Format/Length
TOKEN-VECTOR	(A225)

Tokenized log record (15 tokens each with a length of 15 bytes).

Field Name	Format/Length
TOKEN-DELIMITERS	(A10)

## Default Order of Data Returned

---

Messages are returned in the order in which they are found in the console hardcopy file.





# 18

## COPY-FILE

---

■ Fields .....	114
■ Relevant Error Codes .....	115
■ Field Descriptions .....	115

<b>File</b>	37
<b>Statement</b>	PROCESS
<b>Task</b>	Copy files or library members. Both source and target files must exist before this function is executed.  Load modules can only be copied from PDS to PDS, while program objects can only be copied from PDSE to PDSE. Mixing of PDS and PDSE formats is unavailable due to IBM restrictions.

## Fields

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
FROM-DSNAME	A54		D	Required
FROM-PRODUCT	A1		D	
FROM-PASSWORD	A8		D	
TO-DSNAME	A54		D	Required
TO-PRODUCT	A1		D	
TO-PASSWORD	A8		D	
REPLACE	A3		D	
ERROR-NODE	N5			
ERROR-VIEW	N3			
FROM-VOLSER	A6		D	
FROM-TAPE-DDNAME	A8		D	
FROM-TAPE-FILE-SEQUENCE	B2		D	
FROM-USERID	A8		D	
FROM-USER-PASSWORD	A32		D	
FROM-MEMBER	A8		D	
FROM-NODE	N5		D	
TO-VOLSER	A6		D	
TO-TAPE-DDNAME	A8		D	
TO-TAPE-FILE-SEQUENCE	B2		D	
TO-USERID	A8		D	
TO-USER-PASSWORD	A32		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
TO-MEMBER	A8		D	
TO-NODE	N5		D	

## Relevant Error Codes

Code	Text
530	Access denied by Security Facility
549	Not a PDSE data set
659	Dataset is already cataloged
670	View not supported on one of the operating systems
679	Input and output files are incompatible
683	FAMS error, R15 = :1; R0 = :2:
685	FAMS subtask abended
699	GETVIS failed
701	DSNAME missing
772	Requested dataset not found
998	Member not found



**Note:** Any possible return code from READ-FILE, WRITE-FILE, LIB-DIRECTORY, LIB-UPDATE, SYSTEM-INFO and NATPROC-LOGON may also be returned.

## Field Descriptions



**Note:** Specification of user ID and password are only required if they are different from the local user ID and password.

Field Name	Format/Length
ERROR-NODE	(N5)

If an error occurred during processing, this contains the node which returned the error code.

Field Name	Format/Length
ERROR-VIEW	(N3)

If an error occurred during processing, this contains the view number (called internally by COPY-FILE) which returned the error code. If it is zero, then the error was not returned by a called view.

Field Name	Format/Length
FROM-DSNAME	(A54)

Fully qualified input dataset name.

Field Name	Format/Length
FROM-MEMBER	(A8)

Name of the member to be copied.

Field Name	Format/Length
FROM-NODE	(N5)

Entire System Server node ID from which to copy.

Field Name	Format/Length
FROM-PASSWORD	(A8)

Password for input dataset.

Field Name	Format/Length
FROM-PRODUCT	(A1)

Specify access method with FROM-LIBRARY:

Value	Explanation
L	CA-Librarian
P	CA-Panvalet

Field Name	Format/Length
FROM-TAPE-DDNAME	(A8)

The DD name of the input tape as specified in the view FILE-ALLOCATE.

Field Name	Format/Length
FROM-TAPE-FILE-SEQUENCE	(B2)

The file number of the dataset to be read.

Field Name	Format/Length
FROM-USERID	(A8)

User ID in FROM-NODE.

Field Name	Format/Length
FROM-USER-PASSWORD	(A32)

User password in FROM-NODE.

Field Name	Format/Length
FROM-VOLSER	(A6)

Volume serial number of the input dataset.

Field Name	Format/Length
REPLACE	(A3)

Possible options:

Option	Explanation
NO	Add object to library. If an object with the same name already exists, issue error code.
REP	Replace object of the same name. If it does not exist, issue error code.
YES	Default. Add object to library. If an object with the same name already exists, replace it.

Field Name	Format/Length
TO-DSNAME	(A54)

Fully qualified output dataset name.

Field Name	Format/Length
TO-MEMBER	(A8)

Name to be assigned to the member in the output dataset. By default, the name of the input member is taken.

Field Name	Format/Length
TO-NODE	(N5)

Entire System Server node ID to which to copy.

Field Name	Format/Length
TO-PASSWORD	(A8)

Password for output dataset.

Field Name	Format/Length
TO-PRODUCT	(A1)

Specify access method for TO-LIBRARY:

Value	Explanation
L	CA-Librarian
P	CA-Panvalet

Field Name	Format/Length
TO-TAPE-DDNAME	(A8)

The DD name of the output tape as specified in the view FILE-ALLOCATE.

Field Name	Format/Length
T0-TAPE-FILE-SEQUENCE	(B2)

The file number of the dataset to be written.

Field Name	Format/Length
T0-USERID	(A8)

User ID in T0-NODE.

Field Name	Format/Length
T0-USER-PASSWORD	(A32)

User password in T0-NODE.

Field Name	Format/Length
T0-VOLSER	(A6)

Volume serial number of the output dataset.





# 19

## DEVICE-NAMES

---

■ Fields .....	122
■ Field Descriptions .....	122

<b>File</b>	30
<b>Statement</b>	FIND
<b>Task</b>	Display information for defined devices.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
NAME	A8		D	
TYPE	B4		D	
ADDRESS	B2		D	

## Field Descriptions

---

Field Name	Format/Length
ADDRESS	(B2)

Unit address.

Field Name	Format/Length
NAME	(A8)

Generic name defined during system generation.

Field Name	Format/Length
TYPE	(B4)

Internal device type code.

# 20

## EVENTING

---

■ Fields .....	124
■ Relevant Error Codes .....	124
■ Field Descriptions .....	125

<b>File</b>	40
<b>Statement</b>	FIND or PROCESS, depending on value in FUNCTION field.
<b>Task</b>	Allows communication between Natural programs or Natural applications. This DDM enables Natural programs to send data to and receive data from other Natural programs, even if the partner program is located on another system running a different operating system.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
FUNCTION	A8		D	Required, Unique.
EVENT-NAME	A8		*	*
MAX-TIME	B4		*	*
NUMBER-OF-WAITERS	N5		*	*
NUMBER-OF-MESSAGES	N5		*	*
MESSAGE-ARRAY	A250	M7	*	*

\* See [Field Descriptions](#), FUNCTION field: Matrix of statements, fields and functions.

## Relevant Error Codes

---

Code	Text
600	Unknown function.
886	Event is in use.
887	Event is already defined.
888	Event name must be specified.
890	Event does not exist.
891	Timeout waiting for event.
894	Enable eventing failed.
893	Getmain failed.

## Field Descriptions

Which fields are relevant with which statement depends on the `FUNCTION` specified (see the description of the `FUNCTION` field, below).

Field Name	Format/Length
EVENT - NAME	(A8)

Name of the event.

Field Name	Format/Length
FUNCTION	(A8)

Specifies the action to be performed. Possible values:

Value	Explanation
DEFINE	Define an event
DELETE	Delete an event
LIST	List events
POST	Post event
RECEIVE	Receive messages from event
SEND	Send message to event
WAIT	Wait for post of event (or timeout)
SENDPOST	Both SEND and POST.

Matrix of statements, fields and functions:

Key: R=Required, U=Unique, D=Descriptor

PROCESS Statement	Functions				
Fields	DEFINE	DELETE	SEND	WAIT	POST
EVENT - NAME	RUD	RUD	RUD	RUD	RUD
MAX - TIME				UD	
MESSAGE - ARRAY			RUD		

FIND Statement	Functions	
Fields	RECEIVE	LIST
EVENT-NAME	RUD	D
NUMBER-OF-WAITERS		D
MESSAGE-ARRAY	D	
NUMBER-OF-MESSAGES		D

Field Name	Format/Length
MAX-TIME	(B4)

Maximum time (in seconds) you want to wait for a message to arrive. If no message arrives within this time you will get ERROR-CODE 891 (timeout).

Field Name	Format/Length
MESSAGE-ARRAY	(A250) M7

Array of maximum 7 messages for SEND/RECEIVE functions.

Field Name	Format/Length
NUMBER-OF-MESSAGES	(N5)

Number of messages waiting to be received.

Field Name	Format/Length
NUMBER-OF-WAITERS	(N5)

Number of tasks waiting to be posted.

# 21

## FILE-ALLOCATE

---

■ Fields .....	128
■ Relevant Error Codes .....	129
■ Field Descriptions .....	129

<b>File</b>	9
<b>Statement</b>	PROCESS
<b>Task</b>	Enables the allocation of files from a Natural session.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required.
VOLSER	A6		D	VOLSER or UNIT is required.
DSORG	A4		D	
UNIT	A8		D	VOLSER or UNIT is required.
EXPIRATION-DATE	A8		D	
EXPIRATION-DATX	D		D	
RECFM	A4		D	Required.
LRECL	N5		D	Required.
BLKSIZE	N5		D	Required.
ALLOCATION-TYPE	A3		D	Required.
PRIMARY-ALLOCATION	N10		D	Required.
SECONDARY-ALLOCATION	N10		D	Required.
DISP	A3		D	
DIRECTORY-BLOCKS	N7		D	Required for PO-type datasets (see DSORG field).
CATALOG	A3		D	
RLSE	A3		D	
CONTIG	A3		D	
ROUND	A3		D	
EXTENDED-TEXT	A250	M/3	D	
VOLUME-COUNT	N2		D	Required if writing multiple reels
VOLUME-SEQUENCE	N2		D	
DENSITY	A1		D	
LABEL	A4		D	
DDNAME	A8		D	



Dictionary Field Name	F/L	Mu	DE	Remarks
DSNTYPE	A8		D	
DSNTYPE-VERSION	N1		D	
EATTR	A3		D	
FREE	A3		D	
SMS-STORAGE-CLASS	A8		D	
SMS-MANAGEMENT-CLASS	A8		D	
SMS-DATA-CLASS	A8		D	
MAXGENS	N9			

## Relevant Error Codes

Code	Text
530	Access denied by Security Facility.
701	DSNAME missing.
710	Allocation failed. Reason=TAPES NOT ALLOWED.

## Field Descriptions

Field Name	Type/Length
ALLOCATION-TYPE	(A4)

Space allocation type. Possible values:

BLK	Block.
CYL	Cylinder.
TRK	Tracks (default).

Field Name	Type/Length
BLKSIZE	(N5)

Field Name	Type/Length
CATALOG	(A3)

Specifies whether and how the dataset is cataloged. Possible options:

Option	Explanation
NO	Default. Dataset is not cataloged.
YES	Dataset is cataloged. If you specify generation dataset name (DATASET(+1)), the dataset is always cataloged. The dataset must already have been cataloged (see the view CATALOG-UPDATE, especially the field NUMBER-OF-GENERATIONS).

Field Name	Type/Length
CONTIG	(A3)

Specifies contiguous allocated space. Possible options:

Option	Explanation
NO	Default. Space is not allocated contiguously.
YES	Space is allocated contiguously.

Field Name	Type/Length
CREATE-JOBNAME	(A8)

Job name used to create the data set described by its format 8 DSCB.

Field Name	Type/Length
CREATE-STEPNAME	(A8)

Step name used to create the data set described by its format 8 DSCB.

Field Name	Type/Length
DDNAME	(A8)

Internal DD name used by the Entire System Server. It must be specified on calls to READ-FILE and WRITE-FILE when allocating tape units.

Field Name	Type/Length
DSNTYPE	(A8)

The type of data set to be allocated. Possible values:

OptionValue	Explanation
BASIC	Basic format sequential data set (default).
LARGE	Large format sequential data set.
LIBRARY	Partitioned data set extended (PDSE).

Field Name	Type/Length
DSNTYPE-VERSION	(N1)

The data set version number for a library (PDSE). Possible values are 1 or 2.

Field Name	Type/Length
DENSITY	(A1)

Tape density. Possible options:

Option	Explanation
3	1600 BPI
4	6250 BPI

Field Name	Type/Length
DIRECTORY-BLOCKS	(N7)

Number of directory blocks for PDS.

Field Name	Type/Length
DISP	(A3)

Disposition of the dataset. Possible values:

Value	Explanation
NEW	Allocate new dataset.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Type/Length
DSORG	(A4)

Dataset organization. Possible options:

P0	Partitioned dataset (PDS).
PS	Default. Sequential dataset.

Field Name	Type/Length
EATTR	(A3)

Extended attributes. Possible values:

Value	Explanation
OPT	Data set can support extended attributes (format 8 and 9 DSCBs).
NO	Data set does not support extended attributes (default).

Field Name	Type/Length
EXPIRATION-DATE	(A8)

Expiration date in the format *YYDDD* or *YYYYDDD*. If *EXPIRATION-DATE* is specified with format *YYDDD*, it will be converted to the *YYYY/DDD* format using a fixed window from 1964 to 2063.

There is no default (i.e., no expiration date).

Field Name	Type/Length
EXPIRATION-DATX	(D)

Expiration date in internal format.

Field Name	Type/Length
EXTENDED-TEXT	(A250)

Text lines (up to 3) containing error description.

Field Name	Type/Length
FREE	(A3)

Specify YES to free the allocation for DDNAME.

Field Name	Type/Length
LABEL	(A4)

Type of label processing.

Field Name	Type/Length
LRECL	(N5)

Logical record length. The default is 0.

Field Name	Type/Length
MAXGENS	(N9)

Maximum number of member generations for a PDSE version 2.

Possible values are 0 (no generations) or a value between 1 and the upper limit specified as MAXGENS\_LIMIT in parmlib member IGDSMS<sub>xx</sub>.

Field Name	Type/Length
PRIMARY-ALLOCATION	(N10)

■ Primary space allocation (default is 0).

Field Name	Type/Length
RECFM	(A4)

Record format.

The default is FB.

Field Name	Type/Length
RLSE	(A3)

Specifies whether unused space is released after the dataset is closed. Possible options:

Option	Explanation
NO	Default. Unused space is not released.
YES	Unused space is released after dataset is closed.

Field Name	Type/Length
ROUND	(A3)

Specifies whether one or more whole cylinders are to be allocated. Possible options:

Option	Explanation
NO	Default. Allocated space need not be whole cylinders.
YES	Allocate one or more whole cylinders.

Field Name	Type/Length
SECONDARY-ALLOCATION	(N10)

Secondary space allocation (default is 0).

Field Name	Type/Length
SMS-DATA-CLASS	(A8)

Data class of SMS managed file.

Field Name	Type/Length
SMS-MANAGEMENT-CLASS	(A8)

Management class of SMS managed file.

Field Name	Type/Length
SMS-STORAGE-CLASS	(A8)

Storage class of SMS managed file.

Field Name	Type/Length
UNIT	(A8)

Generic unit name on which the dataset is to be allocated, for example, SYSDA.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number where the file is to be located.

Field Name	Type/Length
VOLUME-COUNT	(N2)

Maximum number of output volumes to be allocated. Required if writing multiple reels.

Field Name	Type/Length
VOLUME-SEQUENCE	(N2)

When a tape dataset is cataloged, you can supply a value of greater than 1 if processing is not the start with the first reel.





# 22

## FILE-ATTRIBUTES

---

■ Fields .....	138
■ Relevant Error Codes .....	139
■ Field Descriptions .....	140

<b>File</b>	1
<b>Statement</b>	FIND
<b>Task</b>	Display attributes for a given file, for example, record format, block size, record length.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
VOLSER	A6		D	
DSNAME	A54		D	Required.
DSORG	A4			
CREATION-DATE	A8			
EXPIRATION-DATE	A8			
LAST-TTR	B3			
LAST-TTTR	B4			
FILE-SIZE	N10			
SECURITY	A5			
SERIES	A8			
CREATION-DATX	D			
EXPIRATION-DATX	D			
PRODUCT	A1			
LRECL	N5			
BLKSIZE	N5			
RECFM	A5			
PAGES-USED	N10			PDSE only: Number of used pages.
PASSWORD	A8		D	
EXTENTS	A192			
EXTENTS-ARRAY	A192	59		
CYLINDERS-ALLOCATED	N7			
TRACKS-ALLOCATED	N3			
UNIT	A3			
NUMBER-OF-EXTENTS	N3			

Dictionary Field Name	F/L	Mu	DE	Remarks
ALLOCATION-TYPE	A3			
SECONDARY-QTY	N10			Secondary allocation quantity in Unit of Allocation type.
PRIMARY-QTY	N10			Primary allocation quantity in Unit of Allocation type.
PERCENT-USED	N3			
LAST-REFERENCE	A8			
LAST-REFERENCE-DATX	D			
NUMBER-OF-MEMBERS	N7			
TOTAL-DIRECTORY-BLOCKS	N5			
UNUSED-DIRECTORY-BLOCKS	N5			
UPDATED-SINCE-BACKUP	A3			
SMS	A3			
OPTIONS	A80			
SMS-STORAGE-CLASS	A8			
SMS-MANAGEMENT-CLASS	A8			
SMS-DATA-CLASS	A8			
CREATE-JOBNAME	A8			
CREATE-STEPNAME	A8			
DSNTYPE	A8			
DSNTYPE-VERSION	N1			
EATTR	A3			
VOLSER-ARRAY	A6	59		For multi-volume datasets on DASD
SERIES-ARRAY	A8	59		For multi-volume datasets on DASD
EXTENTS-ARRAY	A192	59		For multi-volume datasets on DASD
MAXGENS	N9			
SHORT-INFO	A4			

## Relevant Error Codes

Code	Text
500	VSAM error
506	Data set is migrated.
699	GETVIS failed
701	DSNAME missing
786	Unable to obtain storage for CSI work area.
787	CSI request failed, Module :1:, Reason :2:, RC :3:.

Code	Text
899	I/O error during read
993	Open error

## Field Descriptions

---

Field Name	Type/Length
ALLOCATION-TYPE	(A4)

Allocation type specified. Possible values:

ABS	Absolute
BLK	Block
CYL	Cylinders
TRK	Track

Field Name	Type/Length
BLKSIZE	(N5)

Block size.

Field Name	Type/Length
CREATE-JOBNAME	(A8)

Job name used to create the data set described by its format 8 DSCB.

Field Name	Type/Length
CREATE-STEPNAME	(A8)

Step name used to create the data set described by its format 8 DSCB.

Field Name	Type/Length
CREATION-DATE	(A8)

Creation date in the format *DD/MM/YY*. If no creation date is specified, this field is filled with asterisks  
\*\*\*\*.

Field Name	Type/Length
CREATION-DATX	(D)

Creation date in Natural format.

Field Name	Type/Length
CYLINDERS-ALLOCATED	(N7)

Number of integral cylinders allocated.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Type/Length
DSNTYPE	(A8)

Data Set Type Specification.

Field Name	Type/Length
DSNTYPE-VERSION	(N1)

The data set version number for a library (PDSE). Possible values are 1 or 2.

Field Name	Type/Length
DSORG	(A4)

Dataset organization.

For example: PS, P0, VS.

Field Name	Type/Length
EATTR	(A3)

Extended attributes. Possible values:

Value	Explanation
OPT	Data set can support extended attributes (format 8 and 9 DSCBs).
NO	Data set does not support extended attributes. (default).

Field Name	Type/Length
EXPIRATION-DATE	(A8)

Expiration date in the format *DD/MM/YY*. If no creation date is specified, this field is filled with asterisks *\*\*\*\**.

Field Name	Type/Length
EXPIRATION-DATX	(D)

Expiration date in Natural format.

Field Name	Type/Length
EXTENTS	(A192)

Extent information, 16 entries of 12 bytes each. Each entry contains:

- Low cylinder and head (track) address of extent (binary CCHH)
- High cylinder and head (track) address of extent (binary CCHH)
- Number of cylinders in extent
- Number of additional tracks in extent

Field Name	Type/Length
EXTENTS-ARRAY	(A192) 59

Array of extents for multi-volume datasets. Each element reflects one volume.

Field Name	Type/Length
FILE-SIZE	(N10)

Number of tracks currently allocated. (CYLINDERS-ALLOCATED in tracks + TRACKS-ALLOCATED).

Field Name	Type/Length
LAST-REFERENCE	(A8)

Last reference date in format *DD/MM/YY*. If the last reference date is null, this field is filled with asterisks *\*\*\**.

Field Name	Type/Length
LAST-REFERENCE-DATX	(D)

Last reference date in Natural format.

Field Name	Type/Length
LAST-TTR	(B3)

Last track.

Field Name	Type/Length
LAST-TTTR	(B4)

■ Last used track and block on track (TTTR).

Field Name	Type/Length
LRECL	(N5)

Logical record length.

Field Name	Type/Length
MAXGENS	(N9)

Maximum number of member generations for a PDSE version 2.

Possible values are 0 (no generations) or a value between 1 and the upper limit specified as MAXGENS\_LIMIT in parmlib member IGDSMS<sub>xx</sub>.

Field Name	Type/Length
NUMBER-OF-EXTENTS	(N3)

Number of extents.

Values are 1 - 16

Field Name	Type/Length
NUMBER-OF-MEMBERS	(N7)

Number of members in the dataset. If the dataset is not a partitioned dataset, this field shows 0.

Field Name	Type/Length
OPTIONS	(A80)

Options for CA-Panvalet, CA-Librarian, etc.

Field Name	Type/Length
PAGES-USED	(N10)

The number of pages allocated for members and directory information in a PDSE.

Field Name	Type/Length
PASSWORD	(A8)

Specify password for protected datasets.

Field Name	Type/Length
PERCENT-USED	(N3)

Tracks used / tracks allocated.

Field Name	Type/Length
PRIMARY-QTY	(A10)

Primary allocation quantity in unit of allocation type.

Field Name	Type/Length
PRODUCT	(A1)

Access method used. Possible values:

Value	Explanation
L	CA-Librarian
P	CA-Panvalet



Field Name	Type/Length
RECFM	(A5)

Record format.

Field Name	Type/Length
SECONDARY - QTY	(N10)

Secondary allocation quantity in Unit of Allocation type.

Field Name	Type/Length
SECURITY	(A5)

Security status. Possible values:

Value	Explanation
NONE	Not password-protected.
READ	Password-protected for read and write operations.
WRITE	Password-protected for write operations.

Field Name	Type/Length
SHORT - INFO	(A4)

This enables calling file attributes also for PDS data sets without RACF read access for which some users might not have permission.

Value	Explanation
YES	The following values are not be returned for PO / POE data sets: TOTAL-DIRECTORY-BLOCKS UNUSED-DIRECTORY-BLOCKS NUMBER-OF-MEMBERS DSNTYPE-VERSION MAXGENS TOTGENS PERCENT-USED for HFS data sets: PERCENT-USED.
NO	Default.



# 23

## FILE-MAINTENANCE

---

■ Fields .....	148
■ Relevant Error Codes .....	148
■ Field Descriptions .....	148

<b>File</b>	18
<b>Statement</b>	PROCESS
<b>Task</b>	Compress a PDS library online.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required.
PASSWORD	A8		D	
FUNCTION	A8		D	
VOLSER	A6		D	Required if dataset is not cataloged.
LINE	A121		D	
COMPLETION-CODE	B2			
DISP	A3			

## Relevant Error Codes

---

Code	Text
778	Not APF authorized.

## Field Descriptions

---

Field Name	Type/Length
COMPLETION-CODE	(B2)

IEBCOPY completion code.

Field Name	Type/Length
DISP	(A3)

Disposition to be used when compressing the file. Possible options:

- OLD
- SHR

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Type/Length
FUNCTION	(A8)

Possible values:

Value	Explanation
COMPRESS	Default. Compress dataset or file.
RECALL	Recall file stored with HSM (Hierarchical Storage Manager).

Field Name	Type/Length
LINE	(A121)

IEBCOPY output line. For a description of the line layout, see [IEBCOPY documentation](#).

Field Name	Type/Length
PASSWORD	(A8)

Password for dataset

Field Name	Type/Length
VOLSER	(A6)

Volume serial number of the dataset.



# 24

## IDCAMS

---

■ Fields .....	152
■ Relevant Error Codes .....	152
■ Field Descriptions .....	152
■ Default Order of Data Returned .....	153

<b>File</b>	14
<b>Statement</b>	FIND
<b>Task</b>	Retrieve information on datasets using the IDCAMS utility.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
COMMAND	A253		D	Required.
LINE-LENGTH	N3			
LINE	A133		D	

## Relevant Error Codes

---

Code	Text
779	IDCAMS has abended

## Field Descriptions

---

Field Name	Type/Length
COMMAND	(A253)

Input command to IDCAMS. Each command must begin with a blank and multiple commands must be separated by a semicolon (;). See the *Access Method Service* documentation for more information.



Field Name	Type/Length
LINE	(A133)

IDCAMS output line.

Field Name	Type/Length
LINE - LENGTH	(N3)

Length of output line.

## Default Order of Data Returned

---

Each line of the output listing is presented in order.



# 25

## IEBCOPY

---

■ Fields .....	156
■ Supported for Compatibility .....	281
■ Relevant Error Codes .....	157
■ Field Descriptions .....	157
■ Default Order of Data Returned .....	159

<b>File</b>	17
<b>Statement</b>	PROCESS
<b>Task</b>	Run the IEBCOPY utility under the Entire System Server and build input cards for IEBCOPY. Knowledge of IEBCOPY syntax is not required.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
FROM-DSNAME	A54		D	Required.
FROM-MEMBER	A10		D	Required.
FROM-VOLSER	A6		D	Required if dataset is not cataloged.
FROM-PASSWORD	A8		D	Required if dataset is password protected.
TO-DSNAME	A54		D	Required.
TO-MEMBER	A10		D	
TO-VOLSER	A6		D	Required if dataset is not cataloged.
TO-PASSWORD	A8		D	Required if dataset is password protected.
REPLACE	A3		D	
LINE	A121		D	
COMPLETION-CODE	B2		D	

## Supported for Compatibility

---

Dictionary Field Name	F/L	Mu	DE	Remarks
IN-DSNAME	A54		D	
IN-MEMBER	A10		D	
IN-VOLSER	A6		D	
IN-PASSWORD	A8		D	
OUT-DSNAME	A54		D	
OUT-MEMBER	A10		D	
OUT-VOLSER	A6		D	
OUT-PASSWORD	A8		D	

## Relevant Error Codes

---

Code	Text
778	Not APF authorized
551	MEMBER missing

## Field Descriptions

---

Field Name	Type/Length
COMPLETION-CODE	(B2)

IEBCOPY completion code.

Field Name	Type/Length
FROM-DSNAME	(A54)

Fully qualified input dataset name.

Field Name	Type/Length
FROM-MEMBER	(A10)

Name of member to be copied. Select all members in the dataset by specifying an asterisk \*.

Field Name	Type/Length
FROM-PASSWORD	(A8)

Password for input dataset if the dataset is password protected.

Field Name	Type/Length
FROM-VOLSER	(A6)

Volume serial number of input dataset. Required if the dataset is not cataloged.

Field Name	Type/Length
LINE	(A121)

IEBCOPY output line.

Field Name	Type/Length
REPLACE	(A3)

Specifies whether the member in the output dataset is to be replaced. Possible options:

Option	Explanation
NO	Do not replace member if it already exists in the output dataset.
YES	Replace member if it already exists in the output dataset.

Field Name	Type/Length
TO-DSNAME	(A54)

Fully qualified output dataset name.

Field Name	Type/Length
TO-MEMBER	(A10)

Name to be assigned to the member in the output dataset. If omitted, the output member name is used.

Field Name	Type/Length
TO-PASSWORD	(A8)

Password for output dataset if the dataset is password protected.

Field Name	Type/Length
TO-VOLSER	(A6)

Volume serial number of output dataset. Required if the dataset is not cataloged.

## Default Order of Data Returned

---

Each line of the output listing is presented in order.





# 26

## LIB-DIRECTORY

---

■ Fields .....	162
■ Relevant Error Codes .....	163
■ Field Descriptions .....	163
■ Default Order of Data Returned .....	336

<b>File</b>	3
<b>Statement</b>	FIND
<b>Task</b>	This view reads the directory of the specified library and returns the entries record by record.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required.
PASSWORD	A8		D	
ALIAS	A8		D	
ALIAS-ORIGINAL	A8		D	
GENERATION	N9		D	
LONG-ALIAS	A3		D	
MEMBER	A10		D	
MEMBER-LONG-NAME	A253		D	Valid only if LONG-ALIAS = 'YES' requested.
MEMBER-TTR	B4		D	
MODULE-ATTRIBUTES	A80		D	
MODULE-LENGTH	N11		D	
NUMBER-OF-OCCURRENCES	N7		D	
OPTIONS	A80		D	
PRODUCT	A1		D	
RECORD	A200		D	
USER-DATA	A120		D	
USER-DATA-HEX	B120		D	
USER-DATA-LENGTH	N3		D	
VERSION	A2		D	
VOLSER	A6		D	Required only if dataset is not cataloged.

## Relevant Error Codes

Code	Text
500	VSAM error
550	File not a PDS
699	GETVIS failed
899	I/O error during read
906	DESERV error, R15=xxxxxxxx, R0=xxxxxxxx
991	Unknown product
993	OPEN error

## Field Descriptions

Field Name	Type/Length
ALIAS	(A8)

Possible values:

Value	Explanation
YES	Member name is an alias name.
NO	Member name is an original name.

Field Name	Type/Length
ALIAS-ORIGINAL	(A8)

If ALIAS=YES, original name of the member (load libraries only).

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Type/Length
GENERATION	(N9)

Generation number of member (only valid for PDSE version 2).

Field Name	Type/Length
LONG-ALIAS	(A3)

If set to YES, will return member alias names longer than 8 bytes in length (see [MEMBER- LONG-NAME](#)). Default is NO.

Field Name	Type/Length
MEMBER	(A10)

Name of member.

Field Name	Type/Length
MEMBER- LONG-NAME	(A253)

If LONG-ALIAS is set to YES, then this field will contain the first 253 bytes of member names, including those members whose name length is less than or equal to 8. If LONG-ALIAS is set to NO, then this field is equivalent to MEMBER.

Field Name	Type/Length
MEMBER-TTR	(B4)

Field Name	Type/Length
MODULE-ATTRIBUTES	(A253)

The module's attributes in keyword format. The relevant keywords are separated by one blank. Possible values:

1PAGE	First segment is page aligned.	AMODEANY	Phase has AMODE ANY.
2PAGE	Second segment is page aligned.	AMODE24	Phase has AMODE 24.
1RMODE31	First segment is RMODE 31.	AMODE31	Phase has AMODE 31.
2RMODE31	Second segment is RMODE 31.	MSHPBYP	Member is MSHP bypassed.
AMODE24	Phase has AMODE 24.	MSHPCTL	Member is MSHP controlled.
AMODE31	Module/alias is AMODE 31.		
AMODE64	Module/alias is AMODE 64.		
AMODEANY	Module/alias is AMODE ANY.	RECTYPEF	Member has fixed record format.

AUTH	APF-authorized.	RECTYPEU	Member has undefined record format.
COMPRESSED	Module is in COMPRESSED format.	RECTYPEV	Member has variable record format.
FETCHPACK	Module is FETCHOPT PACK.	RMODEANY	Phase has RMODE ANY.
FETCHPRIME	Module is FETCHOPT PRIME.	RMODE24	Phase has RMODE 24.
FILLx	FILL option is set. The character following FILL is the value.  <b>Note:</b> It may not be printable (a MOVE EDITED would be needed to convert the value to hexadecimal).	RMODE31	Phase has RMODE 31.
LOADONLY	Only loadable.	SYSIPT	Member contains SYSIPT data.
MAMODE31	If alias, main EP is AMODE 31.		
MAMODE64	If alias, main EP is AMODE 64.		
MAMODEANY	If alias, main EP is AMODE ANY.		
NOTEXEC	Not executable.		
OVLY	Overlay.		
PAGE	Module is page aligned.		
REFR	Refreshable.		
RENT	Reentrant.		
REUS	Reusable.		
RMODE24	Phase has RMODE 24.		
RMODE31	Phase has RMODE 31.		
RMODEANY	Module is RMODE ANY.		
SCTR	Scatter.		
SSI	Module has SSI data.		
TEST	Test option (TSO).		

Field Name	Type/Length
MODULE - LENGTH	(N11)

Length of module in bytes.

Field Name	Type/Length
NUMBER-OF-OCCURRENCES	(N7)

Number of records which contain the requested string.

Field Name	Type/Length
OPTIONS	(A80)

Option	Explanation
ARC	Get list of archived members (CA-Librarian access method).

Field Name	Type/Length
PASSWORD	(A8)

Password for protected datasets.

Field Name	Type/Length
PRODUCT	(A1)

Access method used. Possible options:

Option	Explanation
L	CA-Librarian
P	CA-Panvalet

Field Name	Type/Length
RECORD	(A200)

String for which SCAN is to be performed.

Field Name	Type/Length
USER-DATA	(A120)

User data for the member.

ISPF statistics entry (if any). For further information, refer to *ISPF statistics entry in a PDS directory* under *ISPF Messages and Codes Manual > Diagnostic Tools and Information > Diagnostic information* in the [z/OS ISPF BookShelf](#).

Field Name	Type/Length
USER-DATA-HEX	(B120)

User data for the member in hexadecimal format.

Field Name	Type/Length
USER-DATA-LENGTH	(N3)

Length of user data for the member.

Field Name	Type/Length
VERSION	(A2)

Version of CA-Panvalet access method.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number.

## Default Order of Data Returned

---

Members are presented in ascending order.





# 27

## LIB-UPDATE

---

■ Fields .....	170
■ Relevant Error Codes .....	170
■ Field Descriptions .....	171

<b>File</b>	5
<b>Statement</b>	PROCESS
<b>Task</b>	Perform library update functions, for example, rename, purge directory entries.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required.
FUNCTION	A8		D	Required.
VOLSER	A6		D	Required only if the dataset is not cataloged.
MEMBER	A10		D	Required.
NEWNAME-MEMBER	A10		D	Relevant with FUNCTION=RENAME.
GENERATION	N9		D	Relevant with FUNCTION=SCRATCH.
PRODUCT	A1		D	
ALIAS	A8		D	Relevant with FUNCTION=ALIAS.
ALIAS-EP	B4		D	Relevant with FUNCTION=ALIAS.
ALIAS-AMODE	A3		D	Relevant with FUNCTION=ALIAS.
PASSWORD	A8		D	
MEMBER-PASSWORD	A8		D	Relevant when PRODUCT=L.
OPTIONS	A80		D	Relevant when PRODUCT=L.

## Relevant Error Codes

---

Code	Text
541	Member generation not found in directory.
542	GENERATION not valid for this library.
543	GENERATION not valid for FUNCTION =:1:.
550	File not a PDS.
551	MEMBER not specified.

Code	Text
552	NEWNAME / ALIAS missing.
553	I/O error on directory.
554	Member not found.
555	NEWNAME / ALIAS already exists.
556	File is in use.
600	Unknown function.
608	ISITMGD failed with RC :1: and reason :2:.
699	Not enough main storage available.
991	Unknown product.
993	OPEN error.

## Field Descriptions

Field Name	Type/Length
ALIAS	(A8)

Relevant with FUNCTION=ALIAS. Name of alias to be created.

Field Name	Type/Length
ALIAS-EP	(B4)

Relevant with FUNCTION=ALIAS. Entry point address to be assigned to the alias.

Field Name	Type/Length
ALIAS-AMODE	(A3)

Relevant with FUNCTION=ALIAS. AMODE to be assigned to the alias. Value can be one of 24, 31, 64 or ANY.

Field Name	Type/Length
DSNAME	(A54)

Dataset name of the library to be updated.

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
ALIAS	Assign alias to existing member.
RENAME	Rename member/element.
SCRATCH	Scratch member/element.

Field Name	Type/Length
GENERATION	(N9)

Generation number of member (only valid for PDSE version 2 with MAXGENS > 0).

Field Name	Type/Length
MEMBER	(A10)

Name of member to be processed.

Field Name	Type/Length
MEMBER-PASSWORD	(A8)

Password for protected CA-Librarian member.

Field Name	Type/Length
NEWNAME-MEMBER	(A10)

Relevant for FUNCTION=RENAME. New name of member.

Field Name	Type/Length
OPTIONS	(A80)

Options for CA-Librarian access method.

Field Name	Type/Length
PASSWORD	(A8)

Password for protected dataset or file.

Field Name	Type/Length
PRODUCT	(A1)

Access method used. Possible options:

Option	Explanation
L	CA-Librarian
P	CA-Panvalet

Field Name	Type/Length
VOLSER	(A6)

Volume serial number.

---

# 28

## LIB-ZAP

---

■ Fields .....	176
■ Field Descriptions .....	176
■ Default Order of Data Returned .....	177

<b>File</b>	16
<b>Statement</b>	PROCESS
<b>Task</b>	Apply Zaps to load modules using AMASPZAP, without having to submit a batch job.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
DSNAME	A54		D	Required.
VOLSER	A6		D	Required if dataset is not cataloged.
LINE	A121		D	
COMMAND	A253		D	Required.
PASSWORD	A8			Required if dataset is password-protected.
COMPLETION-CODE	B2			

## Field Descriptions

---

Field Name	Type/Length	Operating System
COMMAND	(A253)	

Input cards to AMASPZAP. Use a semicolon (;) to delimit cards. For example:

```
NAME MODULE;  
  VER 2A 4700;  
  REP 2A 47F0
```

If no command is specified, temporary file &TEMP.SI is read. In this manner, Zap cards can be written into the temporary file using the WRITE-FILE view, and AMASPZAP is invoked using the file as input.



Field Name	Type/Length	Operating System
COMPLETION-CODE	(B2)	

Completion code returned from AMASPZAP.

Field Name	Type/Length	Operating System
DSNAME	(A54)	

Fully qualified dataset name.

Field Name	Type/Length	Operating System
LINE	(A121)	

AMASPZAP output line.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	

Password for dataset, if dataset is password protected.

Field Name	Type/Length	Operating System
VOLSER	(A6)	

Volume serial number. Only required if dataset is not cataloged.

## Default Order of Data Returned

---

Each line of the output listing is presented in order.



# 29

## LOADED-MODULES

---

■ Fields .....	180
■ Relevant Error Codes .....	180
■ Field Descriptions .....	181

<b>File</b>	23
<b>Statement</b>	FIND
<b>Task</b>	Returns a list of all modules which have been loaded into the requested address space.

This chapter covers the following topics:

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
TCB-ADDRESS	B4		D	Required.
MODULE	A8		D	
TYPE	A4		D	
LOAD-ADDRESS	B4		D	
LENGTH	B3		D	
ENTRY-POINT	B4		D	
USE-COUNT	N3		D	
PSW	B4		D	
STATE	A7		D	

## Relevant Error Codes

---

Code	Text
805	Invalid TCB address.

## Field Descriptions

---

Field Name	Type/Length
ENTRY - POINT	(B4)

Entry point of the module.

Field Name	Type/Length
JOB - NAME	(A8)

Name of the job.

Field Name	Type/Length
LENGTH	(B3)

Length of the module.

Field Name	Type/Length
LOAD - ADDRESS	(B4)

Load address of the module.

Field Name	Type/Length
MODULE	(A8)

Name of load module, interpreted by the fields TYPE, LOAD - ADDRESS and LENGTH.

Field Name	Type/Length
PSW	(B4)

Current Program Status Word for a program (does not apply, if TYPE=LOAD).

Field Name	Type/Length
STATE	(A7)

Run state of the program (does not apply, if TYPE=LOAD). Possible values:

Value	Explanation
RUN	Program is running.
SUSPEND	Program is suspended.
WAIT	Program is in wait state.

Field Name	Type/Length
TCB-ADDRESS	(B4)

Address of Task Control Block.

Field Name	Type/Length
TYPE	(A4)

Module type. Possible values:

Value	Explanation
IRB	Interrupt Request
LOAD	Module was loaded.
PRB	Program Request.
SIRB	System Interrupt Request.
SVRB	SuperVisor Request for SVC routines.
TIRB	Task Interrupt Request.

Field Name	Type/Length
USE-COUNT	(N3)

Use count of the module.

# 30

## LOAD-MODULE

---

■ Fields .....	184
■ Relevant Error Codes .....	185
■ Field Descriptions .....	185

<b>File</b>	44
<b>Statement</b>	PROCESS
<b>Task</b>	Retrieves information on a load module residing on a specified dataset.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
FUNCTION	A8		D	
DSNAME	A54		D	
VOLSER	A6		D	Required if dataset is not cataloged.
MEMBER	A10		D	
PASSWORD	A8		D	
SEGMENT-LENGTH	B2		D	
BLOCK-OFFSET	B4		D	
CSECT-OFFSET	B4		D	
SEGMENT	A253		D	Relevant with FUNCTION=DATA.
ESD-NAME	A8		D	Relevant with FUNCTION=ESD or IDR.
ESD-NAME-LONG	A253		D	Relevant with FUNCTION=ESD or IDR or DATA.
ESD-TYPE	A2		D	Relevant with FUNCTION=ESD or VCON.
ESD-ADDRESS	B4		D	Relevant with FUNCTION=ESD.
ESD-LENGTH	N11		D	Relevant with FUNCTION=ESD.
ESD-AMODE	A3		D	Relevant with FUNCTION=ESD.
ESD-RMODE	A3		D	Relevant with FUNCTION=ESD.
ESD-LR-ID	N5		D	Relevant with FUNCTION=ESD.
ESD-ID	N5		D	Relevant with FUNCTION=ESD.
IN-CSECT	A8		D	Relevant with FUNCTION=VCON.
IN-CSECT-LONG	A253		D	Relevant with FUNCTION=VCON.
IDR-CALLER-ID	A80		D	Relevant with FUNCTION=IDR.
IDR-DATE	A8		D	Relevant with FUNCTION=IDR.
IDR-DATA	A40		D	Relevant with FUNCTION=IDR.
IDR-DATX	D		D	Relevant with FUNCTION=IDR.
IDR-TYPE	A4		D	Relevant with FUNCTION=IDR.



Dictionary Field Name	F/L	Mu	DE	Remarks
MODULE-LENGTH	N11		D	Relevant with FUNCTION=ATTR.
MODULE-ATTRIBUTES	A80		D	Relevant with FUNCTION=ATTR.
MODULE-SSI	B4		D	Relevant with FUNCTION=ATTR.

## Relevant Error Codes

Code	Text
534	File is not a load library.
580	Binder API :1: call, rc :2:, rsn :3:
600	Unknown function.
998	Member not found.

## Field Descriptions

Field Name	Type/Length
BLOCK-OFFSET	(B4)

This field is the offset of the first returned byte in SEGMENT into the load module.

Field Name	Type/Length
CSECT-OFFSET	(B4)

The offset of this segment in the current CSECT.

Field Name	Type/Length
ESD-ADDRESS	(B4)

Relevant with FUNCTION=ESD. Address of the external symbol.

Field Name	Type/Length
ESD-AMODE	(A3)

Relevant with FUNCTION=ESD. The AMODE assigned to the CSECT.

Field Name	Type/Length
ESD-ID	(N5)

Relevant with FUNCTION=ESD. The ID of the external symbol.

Field Name	Type/Length
ESD-LENGTH	(N11)

Relevant with FUNCTION=ESD. Length of the external symbol.

Field Name	Type/Length
ESD-LR-ID	(N5)

Relevant with FUNCTION=ESD. The ID of the label reference (LR) symbol.

Field Name	Type/Length
ESD-NAME	(A8)

Relevant with FUNCTION=ESD or IDR. The external symbol name.

Field Name	Type/Length
ESD-NAME-LONG	(A253)

Relevant with FUNCTION=ESD or IDR or DATA. Returns up to 253 bytes of a long ESD name.

Field Name	Type/Length
ESD-RMODE	(A3)

Relevant with FUNCTION=ESD. The RMODE assigned to the CSECT.

Field Name	Type/Length
ESD-TYPE	(A2)

Relevant with FUNCTION=ESD or VCON. Possible values:

FUNCTION=ESD		FUNCTION=VCON	
CM	Common.	ER	External symbol is unresolved.
ER	External reference.	SD	External symbol is resolved.
LR	Label reference (i.e. Entry name).	WX	External symbol is unresolved (weak).
PC	Private code.		

PR	Pseudo reference.
SD	Section definition (i.e. CSECT).
WX	Weak external reference.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
ATTR	Return module attributes.
DATA	Return data on CSECTs.
ESD	Return names of external symbols and other related information as it appears in the external symbol dictionary.
IDR	Return information on applied Zaps and linkedit date/version.
VCON	Return information on external symbols as they appear in the relocation dictionary.

Field Name	Type/Length
IDR-CALLER-ID	(A80)

Relevant with FUNCTION=IDR. Identifies the caller-ID for the Binder IDR data.

Field Name	Type/Length
IDR-DATA	(A40)

Relevant with FUNCTION=IDR. The IDR data.

Field Name	Type/Length
IDR-DATE	(A8)

Relevant with FUNCTION=IDR. The date of the Zap/linkage in format *DD/MM/YY*.

Field Name	Type/Length
IDR-DATX	(A8)

Relevant with FUNCTION=IDR. The date of the Zap/linkage in internal format.

Field Name	Type/Length
IDR-TYPE	(A4)

Relevant with FUNCTION=IDR. Possible types:

Type	Explanation
LANG	Data produced by the language translator to identify the compiler or assembler.
LINK	Linkage entry. The IDR-DATA field contains linkedit name followed by version.
USER	User data created by IDENTIFY statement. The IDR-DATA field contains data (max. 40 bytes).
ZAP	AMASPZAP entry. The IDR-DATA field contains IDRDATA (length 8).

Field Name	Type/Length
IN-CSECT	(A8)

Relevant with FUNCTION=VCON. Name of the CSECT in which the reference to the external symbol appears.

Field Name	Type/Length
IN-CSECT-LONG	(A253)

Relevant with FUNCTION=VCON. Returns up to 253 bytes of a long CSECT name.

Field Name	Type/Length
MEMBER	(A10)

Member name.

Field Name	Type/Length
MODULE-ATTRIBUTES	(A253)

Relevant with FUNCTION=ATTR. The module's attributes in keyword format. The relevant keywords are separated by a blank. See the description for [MODULE-ATTRIBUTES](#) in the [LIB-DIRECTORY](#) view for values returned in this field.

Field Name	Type/Length
MODULE - LENGTH	(N11)

Relevant with FUNCTION=ATTR. The module's length in bytes.

Field Name	Type/Length
MODULE - SSI	(B4)

Relevant with FUNCTION=ATTR. The module's SSI data.

Field Name	Type/Length
PASSWORD	(A8)

Password for protected dataset.

Field Name	Type/Length
SEGMENT	(A253)

Relevant with FUNCTION=DATA. Contains the data segment with length SEGMENT - LENGTH.

Field Name	Type/Length
SEGMENT - LENGTH	(B2)

The length of the record segment to be returned. At the end of the block/CSECT/module, the segment may be smaller.

SEGMENT - LENGTH might sometimes have a value greater than 253. This indicates the presence of a large area of the FILL character specified when binding the load module or program object (almost always X'00'; different values are indicated in the data returned by the MODULE - ATTRIBUTES field). Programs should interpret this as indicating that the FILL character is present for SEGMENT - LENGTH - 253 bytes beyond CSECT-OFFSET + 253.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number. Only required if the dataset is not cataloged.



# 31

## MAIN-STORAGE

---

■ Fields .....	192
■ Relevant Error Codes .....	192
■ Field Descriptions .....	193

<b>File</b>	20
<b>Statement</b>	FIND
<b>Task</b>	Read storage allocated to the requested address space or partition. No modifications are possible.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
ADDRESS	B4		D	Required
LENGTH	N3		D	Required
OFFSET	B4		D	
AREA	A250		D	
JOB-NAME	A8		D	Required
ADDRESS-64BIT	B8		D	

## Relevant Error Codes

---

Code	Text
699	Not enough main storage available.
801	Job not found.
803	Cannot access data.



## Field Descriptions

Field Name	Type/Length
ADDRESS	(B4)

Starting main storage address. The actual address displayed is specified by a combination of the ADDRESS and OFFSET fields.

Field Name	Type/Length
ADDRESS-64BIT	(B8)

Starting main storage address in 64-bit format (used to display storage above 4 GB). The actual address displayed is specified by a combination of the ADDRESS-64BIT and OFFSET fields.

Field Name	Type/Length
AREA	(A250)

Location to which the storage block is returned.

Field Name	Type/Length
JOB-NAME	(A8)

Name of job which serves as address space identifier. This field is required.

Field Name	Type/Length
LENGTH	(N3)

Length of main storage to be retrieved (maximum is 250).

Field Name	Type/Length
OFFSET	(B4)

Offset related to address to be displayed. The actual address displayed is specified by a combination of the ADDRESS and OFFSET fields.



## 32 NATPROC-LOGON

---

■ Fields .....	196
■ Relevant Error Codes .....	196
■ Field Descriptions .....	197

<b>File</b>	190
<b>Statement</b>	PROCESS
<b>Task</b>	Logon to any Entire System Server accessible via Entire Net-Work

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
CPU	N5.2			
ERROR-CODE	N3			
ERROR-TEXT	A58			
IO-COUNT	N7			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
LOGON-ID	A8		D	Required.
PASSWORD	A32		D	Required
FUNCTION	A8		D	Required.
NEW-PASSWORD	A32		D	
RACF-GROUP	A8		D	
SECURITY-MESSAGE	A80			
PASSPHRASE	A100		D	
NEW-PASSPHRASE	A100		D	

## Relevant Error Codes

---

Code	Text
509	Logon failed - check LOGON-ID / PASSWORD
511	Function must be LOGON/LOGOFF

## Field Descriptions

Field Name	Type/Length
CPU	(N5.2)

Amount of CPU consumed (format *SSSSS.HH*), returned with FUNCTION=LOGOFF.

Field Name	Type/Length
FUNCTION	(A8)

Possible options:

Field Name	Type/Length
IO-COUNT	(N7)

Number of I/O operations so far, returned with FUNCTION=LOGOFF.

Option	Explanation
LOGOFF	Logoff from the system.
LOGON	Logon to the system.

Field Name	Type/Length
LOGON-ID	(A8)

System user ID.

Field Name	Type/Length
NEW-PASSPHRASE	(A100)

New password phrase for user ID.

Field Name	Type/Length
NEW-PASSWORD	(A32)

New password for system user ID.

Field Name	Type/Length
PASSPHRASE	(A100)

Password phrase for user ID.

Field Name	Type/Length
PASSWORD	(A32)

Password for system user ID.

Field Name	Type/Length
RACF - GROUP	(A8)

Group to which the user ID is defined in RACF or security interface.

Field Name	Type/Length
SECURITY - MESSAGE	(A80)

Message returned by security interface.

# 33 NATPROC-USERS

---

■ Fields .....	200
■ Relevant Error Codes .....	201
■ Field Descriptions .....	201

<b>File</b>	191
<b>Statement</b>	FIND / PROCESS
<b>Task</b>	Retrieve information about Entire System Server users and enable a user to be cancelled from the Entire System Server.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
USER-ID	A8		D	
ADABAS-ID	B4		D	
NATPROC-ID	A10		D	
LAST-ACTIVITY	N5		D	
CPU	N5.2		D	
IO-COUNT	N7		D	
ADABAS-EXTENDED-ID	B28		D	
FULL-SCAN	A3		D	
INTERNAL-TASK	A3		D	
TASK-ID	A16		D	
FUNCTION	A8		D	
ORIGIN-JOBNAME	A8		D	
TCB-ADDRESS	B4		D	
CORE-USED	N7		D	
CORE-FREE	N7		D	



## Relevant Error Codes

---

Code	Text
600	Unknown function.
649	Entire System Server User not found or cannot be cancelled.

## Field Descriptions

---

Field Name	Type/Length
ADABAS - EXTENDED - ID	(B28)

Extended Adabas user ID (28 bytes).

Field Name	Type/Length
ADABAS - ID	(B4)

The Adabas user ID.

Field Name	Type/Length
CORE - FREE	(N7)

Amount of free storage in the address space (in Kbytes). This value is only returned for the MAIN entry.

Field Name	Type/Length
CORE - USED	(N7)

Amount of storage used by task (in Kbytes).

Field Name	Type/Length
CPU	(N5.2)

Amount of CPU consumed (format: *SSSSS.HH*).

Field Name	Type/Length
FUNCTION	(A8)

Possible options:

Option	Explanation
CANCEL	Cancel user with the specified NATPROC-ID.
LASTERR	Get last error message.

If no function is specified, a list of Entire System Server users is given.

Field Name	Type/Length
FULL-SCAN	(A3)

FULL-SCAN is considered for FUNCTION = ' ' only (display list of ESY users). If FULL-SCAN is set to YES, all internal Entire System Server tasks are returned additionally. If NO or blank is supplied, only ESY users are returned.

Field Name	Type/Length
INTERNAL-TASK	(A3)

Possible values:

- YES if data of internal ESY task is returned.
- NO if data of NATPROC-USER is returned.

Field Name	Type/Length
IO-COUNT	(N7)

Number of I/O operations so far. .

Field Name	Type/Length
LAST-ACTIVITY	(N5)

Time elapsed since last activity (in seconds).

Field Name	Type/Length
NATPROC - ID	(A10)

The unique internal ID in the Entire System Server.

Value 'Task' is returned for an internal task, value NAT for a Natural subtask.

Field Name	Type/Length
ORIGIN-JOBNAME	(A8)

Name of TP system or batch job from which the user calls originate.

Field Name	Type/Length
TASK-ID	(A16)

ID of the internal task is returned. This is usually the name of the load module or, if a NATURAL-SUB-TASK is returned, the NAT-USER data.

Field Name	Type/Length
TCB-ADDRESS	(B4)

TCB address of the subtask.

Field Name	Type/Length
USER-ID	(A8)

Possible values:

Value	Explanation
<i>userid</i>	The user ID.
-----	The user is not logged on.
****main	Entry for the Entire System Server main task.

**Example:**

```
FIND NATPROC-USERS WITH NODE      = 199
                        AND FULL-SCAN = 'YES'
                        AND FUNCTION  = ' '
*
IF ERROR-CODE EQ 0
  IF #FIRST EQ 1
    WRITE 'LogonID  ESY  Task-ID          TSN    LastAct CPU used'
          'IO count INTERNAL'
    WRITE '          '
```

```
      ASSIGN #FIRST = 0  
    END-IF  
  *  
    WRITE USER-ID NATPROC-ID TASK-ID JOB-ID LAST-ACTIVITY (NL=6)  
          CPU (NL=4.2) IO-COUNT (NL=7) INTERNAL-TASK  
  ...
```

The following output is created:

LogonID	ESY	Task-ID	TSN	LastAct	CPU used	IO count	INTERNAL
TS0S	TASK	ESYCONS	3UG0	6	481.37	51	YES
TS0S	TASK	ESYEVTM	3809	0	65.46	38	YES
TS0S	TASK	ESYMAIN	3807	0	185.95	230	YES
TS0S	TASK	ESYSERV	3808	27	203.93	2783	YES
TS0S	TASK	ESYSERV	381I	0	274.54	621	YES
TS0S	NAT	NOMXTS0006300038	381E	0	67.31	0	YES
TS0S	NAT	NOM02S0006300038	381G	0	24.32	0	YES
TS0S	NAT	NOM03S0006300038	381H	0	162.89	0	YES
TS0S	0010			37	15.44	0	NO
TS0S	0011			11	241.62	208	NO
DC1	0017			0	0.02	0	NO
W0S	0007			27	137.48	0	NO

# 34

## NET-OPER

---

■ Fields .....	206
■ Relevant Error Codes .....	207
■ Field Descriptions .....	207
■ Default Order of Data Returned .....	209

<b>File</b>	15
<b>Statement</b>	FIND / PROCESS
<b>Task</b>	Issue VTAM commands and retrieve VTAM messages. Note that commands and messages are not logged to the system console.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
COMMAND	A80		D	Required.
LINE-LENGTH	N3		D	
LINE	A126		D	
LINE-STATUS	A3		D	
PURGE-PREVIOUS	A3		D	
TIME-STAMP	A8		D	
TERMINATE-TIME	N5		D	
TOKEN-VECTOR	A225		D	
NUMBER-OF-TOKENS	N3		D	
TOKENS	A15	M20	D	See fields TOKEN- <i>n</i> .
TOKEN-1	A15		D	
TOKEN-2	A15		D	
TOKEN-3	A15		D	
TOKEN-4	A15		D	
TOKEN-5	A15		D	
TOKEN-6	A15		D	
TOKEN-7	A15		D	
TOKEN-8	A15		D	
TOKEN-9	A15		D	
TOKEN-10	A15		D	
TOKEN-11	A15		D	
TOKEN-12	A15		D	
TOKEN-13	A15		D	
TOKEN-14	A15		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
TOKEN-15	A15		D	
TOKEN-16	A15		D	
TOKEN-17	A15		D	
TOKEN-18	A15		D	
TOKEN-19	A15		D	
TOKEN-20	A15		D	

## Relevant Error Codes

Code	Text
840	VTAM operator ACB is not open.
841	VTAM error in SENDCMD.
842	Invalid VTAM command.

## Field Descriptions

Field Name	Type/Length
COMMAND	(A80)

VTAM command.

Field Name	Type/Length
LINE	(A126)

Output line from VTAM. This line is split into segments, known as tokens. The field NUMBER-OF-TOKENS contains the token count, the TOKEN-1 to TOKEN-20 fields contain the corresponding tokens.

Field Name	Type/Length
LINE-LENGTH	(N3)

Length of output line.

Field Name	Type/Length
LINE-STATUS	(A3)

Line status. Possible values:

Value	Explanation
NO	No line has been returned. This means that no VTAM messages are currently queued for this user.
YES	A line has been returned.

Field Name	Type/Length
NUMBER-OF-TOKENS	(N3)

Number of tokens in line.

Field Name	Type/Length
PURGE-PREVIOUS	(A3)

Action to be performed on messages. Possible options:

Option	Explanation
NO	The messages for this user are not purged.
YES	Purge any messages queued for this user before issuing a new command.

Field Name	Type/Length
TERMINATE-TIME	(N5)

Terminate processing loop if no real lines have been returned within the specified period. The default is 60 seconds.

Field Name	Type/Length
TIME-STAMP	(A8)

The time the message was received from VTAM in the format: *HH:MM:SS*.

Field Name	Type/Length
TOKEN- <i>n</i>	(A15)

Tokens 1 to 20. These are returned in a multiple field (20 tokens of 15 bytes each).



Field Name	Type/Length
TOKENS	(A15)

Tokenized VTAM output line (20 tokens with a length of 15 bytes each), see field `TOKEN-n`.

Field Name	Type/Length
TOKEN-VECTOR	(A225)

Tokenized VTAM output line (15 tokens of 15 bytes each).

## Default Order of Data Returned

---

Records are returned in the order that VTAM issues messages.



# 35

## READ-FILE

---

■ Fields .....	212
■ Relevant Error Codes .....	213
■ Field Descriptions .....	213
■ Default Order of Data Returned .....	218

<b>File</b>	2
<b>Statement</b>	FIND
<b>Task</b>	This view makes it possible to read all or a selected set of records from a sequential or partitioned disk file (for example, PDS). Using the SCAN fields, only those records containing the specified string are returned.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required.
RECORD	A253		D	
RECORD-LENGTH	N5		D	
SEGMENT-NUMBER	N5		D	
RECORD-NUMBER	N9		D	
END-OF-FILE	A3		D	
POSITION	N5		D	
PASSWORD	A8		D	
SEGMENT-LENGTH	N3		D	
BLOCK-LENGTH	N5		D	
SCAN	A3		D	
SCAN-LIMIT	N7		D	
SCAN-TYPE	A1		D	
SCAN-LENGTH	N3		D	Relevant with SCAN-TYPE=A.
SCAN-COLUMN-FROM	N5		D	Relevant with SCAN-TYPE=A.
SCAN-COLUMN-TO	N5		D	Relevant with SCAN-TYPE=A.
TIME-LIMIT	N5		D	
DIRECT	A3		D	
VOLSER	A6		D	Only if dataset is not cataloged.
MEMBER	A10		D	
PRODUCT	A1		D	
KEY	A253		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
BLOCK-TTR	B3		D	
BLOCK-TOKEN	B4		D	
GENERATION	N9		D	
OPTIONS	A80		D	
BLOCK-NUMBER	N9		D	
SPANNED	A8		D	

## Relevant Error Codes

Code	Text
500	VSAM error.
533	Requested number or records scanned.
537	Time limit reached.
541	Member generation not found in directory.
551	MEMBER not specified.
556	File is in use.
687	Bad variable record.
699	Not enough main storage available.
701	DSNAME missing.
899	Permanent I/O error while reading dataset.
991	Unknown product.
993	OPEN error.
997	File not PDS/Sequential.
998	Member not found.

## Field Descriptions

Field Name	Type/Length
BLOCK-LENGTH	(N5)

Length of block.

Field Name	Type/Length
BLOCK-NUMBER	(N9)

Number of block.

Field Name	Type/Length
BLOCK-TTR	(B3)

TTR of the block which was read.

Field Name	Type/Length
BLOCK-TOKEN	(B4)

Token value of the block which was read.

For a large format sequential data set, the token is in the format *TTTR* where *TTT* is the relative track address and *R* the number of the block on that track.

Field Name	Type/Length
DIRECT	(A3)

Possible options:

Option	Explanation
NO	Default. The block is not read directly.
YES	If REFM=F and DSORG=PS or DA, the block is read directly according to RECORD-NUMBER and BLOCK-NUMBER.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Type/Length
END-OF-FILE	(A3)

Contains YES, if the end of record is reached. The RECORD-NUMBER field then contains the number of records in the dataset.

Field Name	Type/Length
GENERATION	(N9)

Generation number of member (only valid for PDSE version 2 with MAXGENS > 0).

Field Name	Type/Length
KEY	(A253)

ISAM or VSAM key.

Field Name	Type/Length
MEMBER	(A10)

If the dataset is a PDS, member name.

Field Name	Type/Length
OPTIONS	(A80)

Specify X to cause expansion of all ++INCLUDE statements for CA-Panvalet.

Field Name	Type/Length
PASSWORD	(A8)

Password for protected dataset.

Field Name	Type/Length
POSITION	(N5)

Starting position within record. The RECORD field contains input record starting at this position.

Field Name	Type/Length
PRODUCT	(A1)

Access mode used. Possible values:

Value	Explanation
L	CA-Librarian
P	CA-Panvalet

Field Name	Type/Length
RECORD	(A253)

Gives the retrieved record. The length of this field as it appears in the format buffer determines the portion of the record retrieved each time a record is requested. Field `SEGMENT-NUMBER` contains the segment number within the record. For example, the record is 240 bytes long and the calling program requests 80 bytes (in Natural reporting mode: `OBTAIN RECORD (A80)`). The calling program will then receive three segments.

Field Name	Type/Length
RECORD-LENGTH	(N5)

Length of entire record (not the segment length).

Field Name	Type/Length
RECORD-NUMBER	(N9)

Record position within the dataset.

Field Name	Type/Length
SCAN	(A3)

Specify YES to return the first record that meets all selection criteria and all subsequent records.

Field Name	Type/Length
SCAN-COLUMN-FROM	(N5)

Relevant if `SCAN-TYPE=A`. Specifies the column number where the scan is to start. Default is 1.

Field Name	Type/Length
SCAN-COLUMN-TO	(N5)

Relevant if `SCAN-TYPE=A`. Specifies the column number where the scan is to end. Default is the end of the record.

Field Name	Type/Length
SCAN-LENGTH	(N3)

Relevant if `SCAN-TYPE=A`. Specifies the length of the scan string in field `RECORD`.



Field Name	Type/Length
SCAN-LIMIT	(N7)

Specifies the maximum number of records to be scanned before the record is selected. If the limit is reached and no record found, Error Code 533 is issued.

Field Name	Type/Length
SCAN-TYPE	(A1)

Specify A to perform an absolute scan. Wildcard symbols \* (asterisk) and \_ (underline) are treated as normal characters.

Field Name	Type/Length
SEGMENT-LENGTH	(N3)

Length of segment.

Field Name	Type/Length
SEGMENT-NUMBER	(N5)

Segment number within record.

Field Name	Type/Length
SPANNED	(A8)

Spanned records, when RECFM is VBS or VS. Possible options:

Option	Explanation
FIRST	Record returned is the first part.
LAST	Record returned is the last part.
MIDDLE	Record returned is the middle part (not FIRST and not LAST).
NO	Record is not spanned.

Field Name	Type/Length
TIME-LIMIT	(N5)

Specifies the maximum number of seconds a given record is to be scanned for.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number.

## Default Order of Data Returned

---

Records are returned in order from the start of the file.

# 36

## READ-SPOOL

---

■ Fields .....	220
■ Relevant Error Codes .....	221
■ Field Descriptions .....	221
■ Default Order of Data Returned .....	224

<b>File</b>	12
<b>Statement</b>	FIND
<b>Task</b>	Read SYSOUT from spool. This view retrieves records from JES . Use the SP00L - FILES view to retrieve a list of spool files relating to the specified job before executing READ - SPOOL.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR - CODE	N3			
ERROR - TEXT	A58			
NODE	N5		D	
NODE - NAME	A16		D	
JOB - NAME	A8		D	Required if JOB - NUMBER is blank.
JOB - NUMBER	N7		D	Required if JOB - NAME is blank
JOB - ID	A8		D	Required if JOB - NAME and JOB - NUMBER are blank.
RECORD - NUMBER	N7		D	
TYPE	A2		D	Required.
RECORD - LENGTH	N5		D	
RECORD	A253		D	
POSITION	B1		D	
DATA - SET - KEY	N11		D	
SCAN	A3		D	
SCAN - LIMIT	N7		D	
SCAN - TYPE	A1		D	
SCAN - LENGTH	N3		D	Only relevant if SCAN - TYPE=A.
SCAN - COLUMN - FROM	N3		D	Only relevant if SCAN - TYPE=A.
SCAN - COLUMN - TO	N3		D	Only relevant if SCAN - TYPE=A.
TIME - LIMIT	N5		D	
DATA - SET	N5		D	
SEGMENT - NUMBER	N3		D	
SEGMENT - LENGTH	N3		D	

## Relevant Error Codes

Code	Text
533	Requested number of records scanned.
537	Time limit reached.
711	Logical Error occurred in Common JES Interface.
712	Request to Common JES Interface failed.
713	Jobname and Job ID missing. One of them required.
715	Duplicate jobnames found. Please specify job ID.
719	Unable to :1: SYSOUT dataset.
722	Requested dataset not found.
723	Requested job in input queue.
724	Requested job not found.
728	You are not allowed to see this job.
731	Error occurred during spool get.
781	Unable to obtain storage for work area extension.
830	JES interface is not active.

## Field Descriptions

Field Name	Type/Length
DATA-SET	(N5)

Requested dataset number (see also the DATA-SET-KEY field).

Field Name	Type/Length
DATA-SET-KEY	(N11)

Unique dataset identification. This offers much faster access than the dataset number. The dataset key can be obtained using the SP00L-FILES view.

Field Name	Type/Length
JOB - NAME	(A8)

Name of job. If you do not specify a job name, you must specify the JOB - NUMBER field.

Field Name	Type/Length
JOB - ID	(A8)

Job number in alphanumeric format.

Field Name	Type/Length
JOB - NUMBER	(N7)

Job number assigned by the spooling system. If you do not specify a job number, you must specify the JOB - NAME field.

Field Name	Type/Length
POSITION	(B1)

Offset in spool record (the RECORD field contains spool record starting at this offset).

Field Name	Type/Length
RECORD	(A253)

Spool record to be searched (see also the POSITION field).

Field Name	Type/Length
RECORD - LENGTH	(N5)

Length of entire spool record (not the segment length).

Field Name	Type/Length
RECORD - NUMBER	(N7)

Relative record number from start of dataset.

Field Name	Type/Length
SCAN	(A3)

If you specify YES, the first record which meets the selection criteria and all subsequent records are returned.

Field Name	Type/Length
SCAN-COLUMN-FROM	(N3)

Specifies the column number where the scan is to start. Default is column 1.



**Note:** Only relevant if SCAN-TYPE=A.

Field Name	Type/Length
SCAN-COLUMN-TO	(N3)

Specifies the column number where the scan is to end. Default is the end of the record. Only relevant if SCAN-TYPE=A.

Field Name	Type/Length
SCAN-LENGTH	(N3)

Specifies how much of the string in the RECORD field is to be scanned. Only relevant if SCAN-TYPE=A.

Field Name	Type/Length
SCAN-LIMIT	(N7)

Maximum number of records to be scanned before a record is found that matches the search criteria. If this limit is reached and no matching record is found, ERROR-CODE 533 with the appropriate text is returned.

Field Name	Type/Length
SCAN-TYPE	(A1)

Specify A for an absolute search. Note that wildcard symbols (\* and \_) are then treated as normal characters.

Field Name	Type/Length
SEGMENT-LENGTH	(N3)

Length of segment of spool record. If this field is not specified or zero, only the first segment will be returned, even if the spool record is longer than the `RECORD` area.

Field Name	Type/Length
SEGMENT-NUMBER	(N3)

Segment number of spool record to be retrieved, if the output is segmented.

Segment number within record.

Field Name	Type/Length
TIME-LIMIT	(N5)

Specifies the maximum number of seconds that a record can be scanned. If this limit is exceeded and no match is found, `ERROR-CODE 537` is returned.

Field Name	Type/Length
TYPE	(A2)

Spool dataset type. Possible values:

AL	Read all SM/SO files as one file.
CC	Summary of job steps and completion codes.
JL	Input JCL.
SI	SYSIN data.
SM	System messages.
SO	SYSOUT data.

## Default Order of Data Returned

---

Records are returned in order from the start of the `SYSOUT` data set.



# 37

## READ-UNIX-FILE

---

■ Fields .....	226
■ Relevant Error Codes .....	226
■ Field Descriptions .....	226

<b>File</b>	96
<b>Statement</b>	FIND
<b>Task</b>	This view makes it possible to read data from files in the z/OS UNIX file system.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
NODE	N5.0		D	D Node ID (DBID).
ERROR-CODE	N3.0			
ERROR-TEXT	A58			
NODE-NAME	A16		D	LPAR where node is running.
SYSTEM-MESSAGE-CODE	A10			
PATH	A128		D	Fully qualified path name.
RECORD	A253		D	Record of the file.
RECORD-LENGTH	N3.0		D	Required.

## Relevant Error Codes

---

Code	Text
530	Access denied by Security Facility.
553	I/O error on directory.
568	File not found-
993	Cannot open file.
899	I/O error on file.

## Field Descriptions

---

Field Name	Type/Length
NODE	(N5.0)

D Node ID (DBID).

Field Name	Type/Length
ERROR-CODE	(N3.0)

Message code.

Field Name	Type/Length
ERROR-TEXT	(A58)

Text describing error.

Field Name	Type/Length
NODE-NAME	(A16)

LPAR where node is running.

Field Name	Type/Length
SYSTEM-MESSAGE-CODE	(A10)

Code of system message.

Field Name	Type/Length
PATH	(A128)

Path of file to be read.

Field Name	Type/Length
RECORD	(A253)

Record to be read.

Field Name	Type/Length
RECORD-LENGTH	(N3.0)

Length of record. Required.



# 38

## RECEIVE-EMAIL

---

■ Fields .....	230
■ Relevant Error Codes .....	231
■ Field Descriptions .....	231



**Note:** This view and its associated functionality will be deprecated with the next release, as it does not comply with modern security standards such as OAuth 2.0 and Application-Layer Transport Security (AT-TLS).

<b>File</b>	70
<b>Statement</b>	FIND
<b>Task</b>	This view provides the support for receiving e-mails using IMAP protocol

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
DATE	A64		D	Date and Time a mail was transmitted to the sender's mail server.
FUNCTION	A8		D	Function to be performed.
LIST-NUM-MAILS	N3.0		D	Number of mails to be processed by one call of the LIST function. Also defined as startup parameter.
LIST-NUM-MAILS-START	N6.0		D	Sequence number the LIST function starts on its second or n <sup>th</sup> call.
MAIL-SEQUENCE-NUMBER	N6.0			Internal number; can change after call.
MAILSERVER-RESPONSE	A128			Response of mail server in case an error had occurred.
MESSAGE-ID	A128		D	Internal identifier.
NUMBER-MAILS	N5.0			Number of mails in inbox.
NUMBER-NEW-MAILS	N5.0			Number of unread mails in inbox.
PASSWORD	A64		D	Password of caller.
RECIPIENTS	A250		D	List of recipients.
RECORD	A253		D	Mail body.
SENDER-MAIL	A64		D	E-Mail address of sender.
SENDER-NAME	A64		D	Name of sender.
STATUS	A4		D	NEW for unread mails, SEEN for mails already read.
SUBJECT	A128		D	Subject of e-mail.
TRACE	A4		D	YES/NO. If set to YES, the contents of the mail is traced.
UID	N12.0		D	Unique identifier. Key to read or delete a mail.
USERID	A64		D	User ID of caller or e-mail address.

## Relevant Error Codes

Code	Text
600	unknown function
927	init error
928	LOGON error
929	no connection with remote host
930	LIST-NUM-MAILS greater max
931	error with command
932	record length invalid
933	UID missing
934	Mail not found

## Field Descriptions

Field Name	Type/Length
DATE	(A64)

Time and date at which an e-mail was sent. The format of this field depends on the data of mail sender.

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
DELETE	Delete a mail. See example.
LIST	Display directory data of mails such as STATUS, SENDER-MAIL, SENDER-NAME, SUBJECT, RECIPIENTS, MESSAGE-ID, UID or DATE. See example.
READ	Read a mail. See example.
STATUS	Request total number of mails (NUMBER-MAILS) and/or number of new mails (NUMBER-NEW-MAILS). See example.

Field Name	Type/Length
LIST-NUM-MAILS	(N3.0)

Number of mails displayed by function LIST. This field is also defined as startup parameter which defaults to 20. The maximum to be specified is controlled by startup parameter LIST-NUM-MAILS-MAX. The default is 100. The maximum is 999.

Field Name	Type/Length
LIST-NUM-MAILS-START	(N6.0)

This field is used for function LIST to control the position from which to read in mails, by default the position of the latest mail. Note that mails are ordered according to the date they have been received.

Field Name	Type/Length
MAIL-SEQUENCE-NUMBER	(N6.0)

Number indicating the current position of the mail in the mailbox. If a mail is deleted or a new mail arrives the MAIL-SEQUENCE-NUMBERS are recomputed.

Field Name	Type/Length
MESSAGE-ID	(A128)

A unique world-wide reference for e-mails. However, a MESSAGE-ID cannot be used to read or delete a mail. Use UID instead.

Field Name	Type/Length
MAILSERVER-RESPONSE	(A128 )

The message of the mail server if an error has occurred.

Field Name	Type/Length
NUMBER-MAILS	(N5.0)

Number of mails contained in the mailbox



Field Name	Type/Length
NUMBER-NEW-MAILS	(N5.0)

Number of mails that have not been read yet that is those with attribute `NEW`.

Field Name	Type/Length
PASSWORD	(A64)

Password for the e-mail account, handed over in the Natural program.

Field Name	Type/Length
RECIPIENTS	(A250)

The list of recipients of a mail. This can be one recipient indicated by a name and an email address, multiple recipients or a mailing list. Note that the list can only contain 250 characters and that the list is truncated if this limit is exceeded. This field is optional.

Field Name	Type/Length
RECORD	(A253)

Lines of text contained in the body of a mail. We recommend to use plain text / 7-bit ASCII because there is only a basic ASCII-EBCDIC conversion and no character encoding recognition to recognize for example UTF-8. An HTML mail will be displayed without formatting that is with HTML codes.

Field Name	Type/Length
SENDER-MAIL	(A64)

The e-mail address of the sender of a mail. This field is optional.

Field Name	Type/Length
SENDER-Name	(A64)

The name of the sender of a mail. This field is optional.

Field Name	Type/Length
STATUS	(A4)

Specifies either `NEW` for a mail that is new or `SEEN` for a mail that has already been read. This field is optional.

Field Name	Type/Length
SUBJECT	(A128)

Specifies the subject of the mail. This field is optional.

Field Name	Type/Length
TRACE	(A4)

If our support

If set to YES, a trace also includes net data from a mail. If set NO (default) or if left blank, tracing includes technical data.

Field Name	Type/Length
UID	(N12.0)

Specifies the unique identifier of a mail. A UID is displayed using the LIST function. A UID is needed to uniquely identify a mail so it can be read or deleted. The MAIL-SEQUENCE-NUMBER cannot be used for this.

Field Name	Type/Length
USERID	(A64)

User ID for the e-mail account, handed over in the Natural program.

## Examples

See *Receiving Emails in Entire System Server at Work - Examples*

## Supplementary Information about RECEIVE-EMAIL

### ■ Relevant Startup Parameters

See description of IMAP-HOST , IMAP-PORT , LIST-NUM-MAILS and LIST-NUM-MAILS-MAX in *Startup Parameters*.

### ■ Configuring AT-TLS

See *Configuring AT-TLS to Build a Secure Connection* in *z/OS Considerations*.

# 39

## RESOURCE-CONTROL

---

■ Fields .....	236
■ Relevant Error Codes .....	236
■ Field Descriptions .....	237

<b>File</b>	32
<b>Statement</b>	PROCESS
<b>Task</b>	This view can be used to synchronize access to resources. An application can lock and unlock resources, thus allowing synchronization of access by other applications that use the same technique.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
FUNCTION	A8		D	Required
SCOPE	A8		D	
QNAME	A8		D	
RNAME	A250		D	
CONTROL	A1		D	
RNAME-LENGTH	N3		D	
TCB-ADDRESS	B4			
ASID	N4			
JOB-NAME	A8			
STATUS	A4			
RESERVE-UNIT	A3		D	

## Relevant Error Codes

---

Code	Text
600	Unknown operation
610	QNAME missing
611	QNAME cannot start with SYS
612	RNAME missing
613	RNAME length missing
614	Resource is in use
615	Resource held by another task

Code	Text
616	Error in GQSCAN routine

## Field Descriptions

Field Name	Type/Length
ASID	(N4)

The address space ID that enqueued.

Field Name	Type/Length
CONTROL	(A1)

Type of control. Possible values:

Value	Explanation
E	Default. Exclusive control.
S	Shared control.

Field Name	Type/Length
FUNCTION	(A8)

Possible values:

Value	Explanation
DEQ	Release resource.
ENQ-TEST	Test whether resource is available.
ENQ-USE	If resource is available, get control of it. Any resources held by a user or application are released at logoff.
LIST	List all ENQs

Field Name	Type/Length
JOB-NAME	(A8)

The job that enqueued.

Field Name	Type/Length
QNAME	(A8)

The major name of the resource. This name may not begin with *SYS*. See example below.

Field Name	Type/Length
RESERVE-UNIT	(A3)

The UCB address of the *RESERVE*.

Field Name	Type/Length
RNAME	(A250)

The minor name of the resource. See example below.

Field Name	Type/Length
RNAME-LENGTH	(N3)

Length of the minor name of the resource (1 - 250).

Field Name	Type/Length
SCOPE	(A8)

Possible values:

Value	Explanation
RESERVE	
RESPEND	Reserve pending.
STEP	
SYSTEM	
SYSTEMS	

Field Name	Type/Length
STATUS	(A4)

Possible values:

Value	Explanation
OWNS	Owner of resource.
WAIT	Waiting for resource.

Field Name	Type/Length
TCB-ADDRESS	(B4)

The TCB address of the task that enqueued.

### Example:

The following Natural program displays the minor names of the resources with major name SPFEDIT enqueued for job XCOM148.

```

FIND      RESOURCE-CONTROL WITH FUNCTION = 'LIST'
AND QNAME = 'SPFEDIT'
AND RNAME = '*'
WHERE JOB-NAME = 'XCOM148'
DISPLAY RNAME (AL=79)
END

```

Example output from the above program:

```

                                RNAME
-----
SYSM.PROCLIB          LC370LR
USAKXH.SOURCE         DLODTXGL
WKK.SYSF.SOURCE       ASMJ3
BROKER.IV100.SAGNA.JCL $README
BF.COMN.C.SOURCE      WRTR
BF.COMN.C.SOURCE      CCLA
USARMK.SAGNA.SOURCE   COPYPDS

```





# 40

## SEND-EMAIL

---

■ Fields .....	242
■ Relevant Error Codes .....	243
■ Field Descriptions .....	243

<b>File</b>	212
<b>Statement</b>	PROCESS
<b>Task</b>	This view provides the support for sending electronic mails.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ATTACHMENT-SUFFIX	A4			
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-CODE	B2			
SYSTEM-MESSAGE-CODE	A10			
FUNCTION	A8		D	
SUBJECT	A253		D	
RECORD	A253		D	
RECIPIENT	A128	M20	D	
CC-RECIPIENT	A128	M20	D	
BCC-RECIPIENT	A128	M20	D	
IGNORE-RCPT-REJECT	A3		D	
FROM-NAME	A128		D	
REPLY-TO	A128		D	
HOST-CODE-PAGE	A8		D	
DSNAME	A54		D	
PASSWORD	A8		D	
EXTENDED-TEXT	A250	M60		
IDENTIFIER	A8		D	Required for nested SEND-EMAIL requests.
VOLSER	A6		D	Only if dataset is not cataloged.
MEMBER	A10		D	

## Relevant Error Codes

Code	Text
530	Access denied by Security Facility.
675	HOST-CODE-PAGE not supported
699	Not enough main storage available.
809	Subsystem not active.
895	<i>RECIPIENT</i> must be specified.
895	<i>SUBJECT</i> must be specified.
897	Mailer response: :1:.

## Field Descriptions

Field Name	Type/Length
ATTACHMENT-SUFFIX	(A4)

The field has a maximum length of 4 characters, so for example if the user sets ATTACHMENT-SUFFIX := 'html' or ATTACHMENT-SUFFIX := 'txt', .html resp. .txt will be appended to the attachment name, making it a valid file extension for e.g. Windows. Also, whole web pages, stored in a DS/Member, can be sent with ATTACHMENT-SUFFIX := 'html' for easier access in a web browser directly from the mail client.

Field Name	Type/Length
BCC-RECIPIENT	(A128) M20

Field Name	Type/Length
BCC-RECIPIENT	(A128) M20

Array of max. 20 recipients receiving a “blind carbon copy” of this mail.

If blank, no “blind carbon copy” will be sent. This field is optional.

Field Name	Type/Length
CC-RECIPIENT	(A128) M20

Array of max. 20 recipients receiving a “carbon copy” of this mail.

If blank, no “carbon copy” will be sent. This field is optional.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified data set name that is attached to this mail as a text file.

Field Name	Type/Length
EXTENDED-TEXT	(A250) M60

Array of max. 60 SMTP reply codes and texts from mail server in case of rejected [CC-/BCC-]RECIPIENTs.

Field Name	Type/Length
HOST-CODE-PAGE	(A8)

This field identifies the host code page of all SEND-EMAIL input fields provided by the user.

If this startup parameter is not specified, Entire System Server uses the internal default U.S. English Code Page (code page number 037/1).

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
<i>blank</i>	Default. Write a mail record.
CLOSE	All mail records have been written. Specify this function for the last SEND-EMAIL request.

Field Name	Type/Length
FROM-NAME	(A128)

`last_name` and `first_name` as additional sender information. Field must not contain any quotation marks. The required quotation marks in the mail header will be added automatically.

Field Name	Type/Length
IDENTIFIER	(A8)

Required for nested SEND-EMAIL requests. All requests for the same mail must have the same identifier.

Field Name	Type/Length
IGNORE-RCPT-REJECT	(A3)

Possible values:

Option	Explanation
YES	The e-mail is sent even if a specified RECIPIENT is rejected by the SMTP server.
NO	The e-mail is not sent if a specified RECIPIENT is rejected by the SMTP server (default).

Field Name	Type/Length
PASSWORD	(A8)

Password for protected dataset.

Field Name	Type/Length
RECIPIENT	(A128) M20

Array of max. 20 recipients receiving this mail.

At least one recipient is required for the first SEND-EMAIL request to send this mail.

Field Name	Type/Length
RECORD	(A253)

Mail record to be written as line in the message body.



**Note:** If the first RECORD starts with the string "<html" or "<!DOCTYPE HTML", the e-mail is sent with an indication that it contains text in HTML format, otherwise it will be sent as plain text.

Field Name	Type/Length
REPLY-TO	(A128)

The specified mail address is sent to all mail recipients to provide a specify reply address. This field is optional. If omitted, user ID and host name are taken to compose the reply address.

Field Name	Type/Length
SUBJECT	(A253)

Specifies the subject of the mail.

Field is required for the first SEND-EMAIL request.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number .

Field Name	Type/Length
MEMBER	(A10)

If dataset is a PDS, member name to be attached to this mail.

## Example

The following example illustrates the usage of the SEND-EMAIL view. The PROCESS statement is encapsulated in subroutine SUB-SEND-EMAIL.

```
DEFINE DATA LOCAL
1 SEND-EMAIL VIEW OF SEND-EMAIL
  2 ERROR-CODE
  2 ERROR-TEXT
  2 NODE
  2 NODE-NAME
  2 SYSTEM-CODE
  2 SYSTEM-MESSAGE-CODE
  2 FUNCTION
  2 SUBJECT
  2 RECORD
  2 RECIPIENT      (1:20)
  2 CC-RECIPIENT (1:20)
  2 IDENTIFIER
1 #FUNCTION      (A008) INIT <" ">
1 #SUBJECT       (A128) INIT <"Test mail">
1 #RECORD        (A080)
1 REDEFINE #RECORD
```

```

2 #RECORD1      (A040)
2 #RECORD2      (A040)
1 #RECIPIENT     (A128) INIT <"email_address"> <-- change this
1 #NODE          (N005) INIT <node>                <-- change this
END-DEFINE
*
ASSIGN #RECORD1  = "Dear User,"
ASSIGN #RECORD2  = " "
PERFORM SUB-SEND-EMAIL
*
ASSIGN #RECORD1  = "this is a mail sent by a Natural test pr"
ASSIGN #RECORD2  = "ogram."
PERFORM SUB-SEND-EMAIL
*
ASSIGN #RECORD1  = " "
ASSIGN #RECORD2  = " "
PERFORM SUB-SEND-EMAIL
*
ASSIGN #RECORD1  = "Best Regards,"
ASSIGN #RECORD2  = " "
PERFORM SUB-SEND-EMAIL
*
ASSIGN #RECORD1  = "NPR Development"
ASSIGN #RECORD2  = " "
PERFORM SUB-SEND-EMAIL
*
ASSIGN #FUNCTION = 'CLOSE'
ASSIGN #RECORD1  = " "
ASSIGN #RECORD2  = " "
PERFORM SUB-SEND-EMAIL
*
DEFINE SUBROUTINE SUB-SEND-EMAIL
  PROCESS SEND-EMAIL USING NODE      = #NODE
                                ,    FUNCTION = #FUNCTION
                                ,    SUBJECT  = #SUBJECT
                                ,    RECORD   = #RECORD
                                ,    RECIPIENT = #RECIPIENT
*
  IF ERROR-CODE NE 0
    WRITE  9X  '=' ERROR-CODE
        /  9X  '=' ERROR-TEXT
        /  8X  '=' SYSTEM-CODE
        /  '=' SYSTEM-MESSAGE-CODE

    NEWPAGE
    STOP
  END-IF
END-SUBROUTINE
END ↵

```

## Supplementary Information about SEND-EMAIL

The SEND-EMAIL view implements a text-based mail client. The message body is created based on text lines specified in field `RECORD`. To support a varying number of text lines, SEND-EMAIL was designed as an update view. The mail message body is closed by specifying `FUNCTION='CLOSE'`.

`RECORD` is defined as a 253-byte character field. The data specified in the `RECORD` field will be terminated by carriage return and line feed in the message body.

A zero `ERROR-CODE` is returned from SEND-EMAIL if the e-mail has been accepted by the SMTP server. This does not necessarily mean that the e-mail could be delivered to the specified `RECIPIENT(s)` and `CC-RECIPIENT(s)`.

A character set translation is needed before sending all mail data to the configured SMTP target host. Therefore, the input EBCDIC data will be converted to ASCII code page ISO 8859-1. No special characters are supported as `RECORD` data.

Currently, the SEND-EMAIL view does not support data encryption.

If startup parameter and user field `HOST-CODE-PAGE` are omitted, the SEND-EMAIL view uses the U.S. English Code Page (code page number 037/1) as character set for input data. The at-sign @ as part of various mail addresses can be supplied as (a) (left bracket, lower case a, right bracket) to simplify the input procedure. If you encounter problems with the @ character, use (a) instead. Error ESY5879 Mailer response: Send RCPT TO failed with RC 550 indicates problems with the `RECIPIENT` field.

For more information about e-mail administration, see the subsection *Run E-Mail Client* in *Common Entire System Server Features* in the Entire System Server Administration documentation. See the subsection *E-Mail Client Requirements* in the section *Installation for z/OS (Step 15)* in the Entire System Server *Installation and Customization* documentation for additional information about e-mail installation requirements.



# 41

## SEND-MESSAGE

---

■ Fields .....	250
■ Relevant Error Codes .....	250
■ Field Descriptions .....	251

<b>File</b>	19
<b>Statement</b>	PROCESS
<b>Task</b>	Allows you or the application to send messages to a TP monitor user (Com-plete, TSO, TIAM) and/or the system console.
<b>Note</b>	When sending messages to Com-plete users, return code 0 means only that the message has been forwarded to Com-plete. Possible error messages are written to the console by COMBTCH.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
MESSAGE	A79		D	Required
DESTINATION	A8		D	Required
PREFIX	A3		D	
DESTINATION-TYPE	A8		D	
STATUS	A8		D	
NOLOG	A8		D	
URGENT	A3		D	Only relevant if your site runs Net-Pass.

## Relevant Error Codes

---

For TSO and TIAM: if the message could not be sent because the target user is not logged on, ERROR-CODE is 0 and the STATUS contains NOLOG.

Code	Text
630	Console not defined or not active.

## Field Descriptions

Field Name	Type/Length
DESTINATION	(A8)

Destination, depending on DESTINATION-TYPE.

For type Com-plete, TSO and TIAM, the message is sent to the user ID.

For type APPL, the message is sent to the application name.

Specify \*CONSOLE here to send the message to the console only.

Field Name	Type/Length
DESTINATION-TYPE	(A8)

Type of destination to which the message is to be sent:

Destination	Explanation
APPL	To the application specified in the field DESTINATION.
COMPLETE	To Com-plete user only.
TSO	To TSO user only.

Default in is TSO and Com-plete user (if the user is not logged on to Com-plete, the message is sent to TSO).

Field Name	Type/Length
MESSAGE	(A79)

Message text to be sent. This text will be prefixed by: Message from *userid* (see the PREFIX field).

Field Name	Type/Length
NOLOG	(A8)

Specify CONSOLE in this field to send the message to the console if the TSO or TIAM user is not logged on.

Field Name	Type/Length
PREFIX	(A3)

Message prefix indicator. Possible values:

Value	Explanation
NO	Messages have no prefix.
YES	Messages will be prefixed by the string <code>Message from userid.</code>

Field Name	Type/Length
STATUS	(A8)

Possible values returned to this field:

Value	Explanation
LOG	The TSO or TIAM user is logged on and has received the message.
NOLOG	The TSO or TIAM user is not logged on.

Field Name	Type/Length
URGENT	(A3)

Urgent message indicator. Only relevant if your site runs Software AG's VTAM session manager Net-Pass or a similar VTAM session manager. Possible values:

Value	Explanation
NO	Default. Message class is not urgent. The message is displayed on the receiver's terminal the next time he presses Enter or any PF/PA key.
YES	Message class is changed to urgent. It is displayed on the receiver's terminal immediately. Any data the receiver has typed in since he last pressed Enter may be lost.

# 42

## SPOOL-FILES

---

■ Fields .....	254
■ Relevant Error Codes .....	255
■ Field Descriptions .....	256

<b>File</b>	36
<b>Statement</b>	FIND / PROCESS
<b>Task</b>	Returns a list of all spool files relating to a specific job.  We also recommend to use this view to determine which fields exist for a job before using the READ- SPOOL view.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
JOB-NAME	A8		D	Required.
JOB-NUMBER	N7		D	
COPIES	N3		D	
FORM	A8		D	
CHARS	A16		D	
DSNAME	A54		D	
CLASS	A4		D	
TYPE	A2		D	
DESTINATION-NODE	N5		D	
DESTINATION-REMOTE	N5		D	
RECORD-COUNT	N7		D	
FCB	A4		D	
WRITER	A8		D	
FLASH	A4		D	
PROCNAME	A8		D	
STEPNAME	A8		D	
DDNAME	A8		D	
DATA-SET	N5		D	
HOLD	A3		D	
ACTION	A20		D	
NEW-CLASS	A1		D	Relevant with FUNCTION=CHANGE , RELEASE.
GROUP-ID	A20		D	Valid for JES2 only.
FUNCTION	A8		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
RECFM	A3		D	
LRECL	N3		D	
TRC	A3		D	
DATA-SET-KEY	N11		D	
NEW-DESTINATION	A8		D	Relevant with FUNCTION=CHANGE.
NEW-FORM	A8		D	Relevant with FUNCTION=CHANGE.
NEW-WRITER	A8		D	Relevant with FUNCTION=CHANGE.
OUTDISP	A6		D	Valid for JES2 only.
IDENTIFIER	A44		D	
NEW-USERID	A8		D	Relevant with FUNCTION=CHANGE.
BURST	A3		D	
COMPACT	A8		D	
LINECT	N3		D	
UCS	A4		D	
PRINT-MODE	A4		D	
PAGEDEF	A6		D	
FORMDEF	A6		D	

## Relevant Error Codes

Code	Text
670	Error in subsystem request
671	Invalid NEW-CLASS
711	Logical Error occurred in Common JES Interface.
712	Request to Common JES Interface failed.
713	Jobname and Job ID missing. One of them required.
715	Duplicate jobnames found. Please specify Job ID.
719	Unable to :1: SYSOUT dataset.
720	Invalid TYPE.
722	Dataset not found
724	Requested job not found
728	You are not allowed to see this job
778	Not APF authorized
781	Unable to obtain storage for work area extension.
820	Unknown command

Code	Text
830	JES interface not active
833	You are not allowed to alter this job
876	No NEW-field for CHANGE request.

## Field Descriptions

---

Field Name	Type/Length
ACTION	(A20)

If the FUNCTION field value was DELETE, CHANGE or RELEASE, the result of the command is returned in this field. If only one dataset is processed, the result is also returned in the field ERROR-TEXT.

Field Name	Type/Length
BURST	A3

Possible values:

- YES: Printed output is to be burst into separate sheets.
- NO: Printed output is to be in a continuous fanfold.

Field Name	Type/Length
COMPACT	A8

The symbolic name of a compaction table.

Field Name	Type/Length
CHARS	(A16)

Four groups of four bytes each taken from JCL: (CHARS=AAAA,BBBB,CCCC,DDDD).

Field Name	Type/Length
CLASS	(A4)

Output class. For valid classes, ask your system programmer.



Field Name	Type/Length
COPIES	(N3)

Number of copies.

Field Name	Type/Length
DATA-SET	(N5)

Dataset number.

Field Name	Type/Length
DATA-SET-KEY	(N11)

Dataset key.

Field Name	Type/Length
DDNAME	(A8)

DDname of this dataset given in the JCL.

Field Name	Type/Length
DESTINATION-NODE	(N5)

Node number of the destination JES system.

Field Name	Type/Length
DESTINATION-REMOTE	(N5)

Destination ID on the destination node.

Name of spool output dataset.

Field Name	Type/Length
FCB	(A4)

Forms control buffer.

Field Name	Type/Length
FLASH	(A4)

Flash for 3800.

Field Name	Type/Length
FORM	(A8

Form of the dataset to be printed.

Field Name	Type/Length
FORMDEF	A6

Name of library member containing statements to specify forms properties for Print Services Facility (PSF).

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed on the spool file(s). Only JES SYSOUT data sets (TYPE SM or SO) can be deleted, changed or released. Spool data sets of TYPE JL or SI are not SYSOUT data sets and can only be displayed.

Possible options:

Option	Explanation
<i>blank</i>	Display information.
DELETE	Delete file(s).
CHANGE	Change output class.
RELEASE	Release from HOLD and, if NEW-CLASS is specified, also change output class (only possible for files in HOLD).

Field Name	Type/Length
GROUP-ID	(A20)

Output group id for SYSOUT data set (returned for JES2 only).

Field Name	Type/Length
HOLD	(A3)

Possible values:

Value	Explanation
NO	Dataset is not held.
YES	Dataset is held.

Field Name	Type/Length
IDENTIFIER	(A44)

Unique identifier for the specified dataset.

Field Name	Type/Length
JOB - NAME	(A8)

Name of job from job card.

Field Name	Type/Length
JOB - NUMBER	(N7)

Job number assigned by the spooling system.

Field Name	Type/Length
LINECT	N3

The maximum number of lines JES2 is to print on each page.

Field Name	Type/Length
LRECL	(N3)

Record length of the spool file.

Field Name	Type/Length
NEW-CLASS	(A1)

New class specified with the `CHANGE` or `RELEASE` function.

Field Name	Type/Length
NEW-DESTINATION	(A8)

New destination for a `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length
NEW-FORM	(A8)

New form for `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length
NEW-USERID	A8

New user ID for `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length
NEW-WRITER	(A8)

New writer program name for `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length
OUTDISP	(A8)

Output disposition for `SYSOUT` data set (returned for JES2 only). Possible values are `WRITE`, `HOLD`, `KEEP`, `LEAVE` and `PURGE`.

Field Name	Type/Length
PAGEDEF	A6

Name of library member containing statements to specify page properties for Print Services Facility (PSF).

Field Name	Type/Length
PRINT-MODE	A4

Possible values:

- LINE
- PAGE

:

:

Field Name	Type/Length
PROCNAME	(A8)

Name of procedure invoked.

Field Name	Type/Length
RECFM	(A3)

The record format of the spool file.

Field Name	Type/Length
RECORD-COUNT	(N7)

Number of records in this dataset.

Field Name	Type/Length
STEPNAME	(A8)

Name of step invoked.

Field Name	Type/Length
TRC	(A3)

YES means byte 2 in record is used for CHARS (3800). (DCB=OPTCD=J is specified).

Field Name	Type/Length
TYPE	(A2)

Spool file type. Possible options:

Option	Explanation
CC	Summary of job steps and completion codes.
JL	Input JCL.
SI	SYSIN data.
SM	System messages.
SO	SYSOUT data.

Field Name	Type/Length
UCS	A4

The universal character set (UCS) image JES is to use in printing the sysout dataset.

Field Name	Type/Length
WRITER	(A8)

External writer program which gets control if the dataset is printed.

### Example 1:

This little program displays a list of spool files for the job WKKC:

```
FIND SPOOL-FILES WITH JOB-NAME = 'WKKC'  
DISPLAY TYPE DATA-SET-KEY DDNAME STEPNAME WRITER FCB RECFM LRECL TRC  
END
```

Output from the above program:

TYPE	DATA-SET-KEY	DDNAME	STEPNAME	WRITER	FCB	RECFM	LRECL	TRC
---	-----	-----	-----	-----	---	-----	-----	---
JL	1	\$JCL			****	F	80	NO
SM	2	\$JES2LOG	JES2		****	UA	133	NO
SM	3	\$JCLIMG	JES2		****	F	132	NO
SM	4	\$SYSMSG	JES2		****	VA	133	NO
SI	101	SYSIN	COPY		****	F	80	NO
SO	102	SYSPRINT	COPY		****	FBA	121	NO

**Example 2:**

The following program deletes from HOLD class system message file number 1 (dataset key 2), and displays the message returned.

```
PROCESS SPOOL-FILES USING JOB-NAME      = 'WKKASM'
                        ' DATA-SET-KEY = 2
                        ' FUNCTION       = 'DELETE'

DISPLAY ACTION
END
```

Output from the above program:

```
          Action
-----
DELETE    OK
```





# 43

## SPOOL-QUEUE

---

■ Fields .....	266
■ Relevant Error Codes .....	267
■ Field Descriptions .....	267

<b>File</b>	11
<b>Statement</b>	FIND
<b>Task</b>	Read spool queue. This view retrieves spool queue information such as jobname, job number, class, queue, number of spool records, etc.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
HOLD	A3		D	
JOB-NAME	A8		D	
JOB-NUMBER	N7		D	
JOB-ID	A8		D	
STATUS	A9		D	
PRIORITY	N3		D	
USER	A8		D	
DATE-XEQ-START	A8		D	
DATX-XEQ-START	D		D	
TIME-XEQ-START	N6		D	
TIMX-XEQ-START	T		D	
DATE-XEQ-STOP	A8		D	
DATX-XEQ-STOP	D		D	
TIME-XEQ-STOP	N6		D	
TIMX-XEQ-STOP	T		D	
RECORD-COUNT	N9		D	
CLASS	A8		D	
QUEUE	A3		D	
DESTINATION	A8		D	
ORIGIN	A8		D	
SYSTEM-ID	A4		D	
TYPE	A3		D	
SPOOL-UTILIZATION	B1		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
GROUP - ID	A20		D	
ROOM	A4		D	
PROGRAMMER - NAME	A20		D	
MESSAGE - CLASS	A1		D	
JOB-CLASS	A1		D	
TIME - ON - READER	N6		D	
DATE - ON - READER	A8		D	
CARD - COUNT	N7		D	
OUTDISP	A6		D	
MAX - RETURN - CODE	A10		D	
SUBMITTER	A8		D	JES3 only
WLM-QUEUE-POSITION	N7		D	
WLM-SERVICE-CLASS	A8		D	

## Relevant Error Codes

Code	Text
711	Logical Error occurred in Common JES Interface.
712	Request to Common JES Interface failed.
713	Jobname and Job ID missing. One of them required.
724	Requested job not found.
729	Invalid job TYPE, specify JOB, STC or TSU.
830	JES interface is not active.

## Field Descriptions

Field Name	Type/Length
CARD - COUNT	(N7)

Number of cards submitted to internal reader.

Field Name	Type/Length
CLASS	(A8)

Job class. For valid classes, ask your system programmer.

Field Name	Type/Length
DATE-ON-READER	(A8)

Date when job was submitted to the internal reader.

Field Name	Type/Length
DATE-XEQ-START	(A8)

Date when job or queue entry started executing.

Field Name	Type/Length
DATE-XEQ-STOP	(A8)

Date when job or queue entry finished executing.

Field Name	Type/Length
DATX-XEQ-START	(A8)

Date when job or queue entry started executing - in internal format.

Field Name	Type/Length
DATX-XEQ-STOP	(A8)

Date when job or queue entry finished executing - in internal format.

Field Name	Type/Length
DESTINATION	(A8)

JES destination of job.

Field Name	Type/Length
GROUP-ID	(A20)

Unique identifier defined by JES.

Field Name	Type/Length
HOLD	(A3)

YES indicates job is in hold.

DUP indicates a temporary hold because of a duplicate job in the system.

Field Name	Type/Length
JOB-CLASS	(A1)

JES job class where the job is to be executed.

Field Name	Type/Length
JOB-ID	(A8)

Job number or TSN of job in alphanumeric format.

Field Name	Type/Length
JOB-NAME	(A8)

Name of the job.

Field Name	Type/Length
JOB-NUMBER	(N7)

Job number assigned by JES.

Field Name	Type/Length
MAX-RETURN-CODE	(A10)

Return code information for the job. The information is returned in one of the following formats:

CC <i>nnnn</i>	Job ended normally or by CC <i>nnnn</i> .
ABEND <i>Sxxx</i>	Job abended with system abend code <i>xxx</i> .
ABEND <i>Unnnn</i>	Job abended with user abend code <i>nnnn</i> .
CANCELED	Job was canceled.
CONV ABEND	Converter abended.
JCL ERROR	Job failed due to JCL error.
SEC ERROR	Job failed due to security error.

Field Name	Type/Length
MESSAGE-CLASS	(A1)

Output message class.

Field Name	Type/Length
ORIGIN	(A8)

JES3 job origin.

Field Name	Type/Length
OUTDISP	(A6)

Output disposition. Possible values are WRITE, HOLD, KEEP or LEAVE.

Field Name	Type/Length
PROGRAMMER-NAME	(A20)

Name of the user who submitted the job to identify the person or group responsible. This value is inherited from the job card.

Field Name	Type/Length
PRIORITY	(N3)

Priority of job.

Field Name	Type/Length
QUEUE	(A3)

Queue in which the job resides. Possible values:

IN	Input queue.
NJE	NJE receive/transmit queue.
OUT	Output queue.
XEQ	Job is executing.

Field Name	Type/Length
RECORD-COUNT	(N9)

Number of records in spool.

Field Name	Type/Length
ROOM	(A4)

Room number of user who submitted the job.

Field Name	Type/Length
SPOOL-UTILIZATION	(B1)

Percentage of spool used.

Field Name	Type/Length
STATUS	(A9)

Status of job.

Possible values:

ACTIVE	Job has been selected.
AVAILABLE	Job is available.
WAITING	Job is waiting (JES3 only).

Field Name	Type/Length
SUBMITTER	(A8)

The submitting user ID of the job.

Field Name	Type/Length
SYSTEM-ID	(A4)

ID of the system on which the job is/was processed.

Field Name	Type/Length
TIME-ON-READER	(N6)

Time of day when job was submitted to the internal reader.

Field Name	Type/Length
TIME-XEQ-START	(N6)

Time of day when job or queue entry started executing.

Field Name	Type/Length
TIME-XEQ-STOP	(N6)

Time of day when job or queue entry finished executing.

Field Name	Type/Length
TIMX-XEQ-START	(N6)

Time of day when job or queue entry started executing - in internal format.

Field Name	Type/Length
TIMX-XEQ-STOP	(N6)

Time of day when job or queue entry finished executing - in internal format.

Field Name	Type/Length
TYPE	(A3)

Type of job. Possible values:

Value	Explanation
JOB	Batch job.
STC	Started task.
TSU	TSO user.



Field Name	Type/Length
USER	(A8)

Owner of the job.

Field Name	Type/Length
WLM-QUEUE-POSITION	(N7)

Position on the WLM queue for the job.

Field Name	Type/Length
WLM-SERVICE-CLASS	(A8)

WLM service class name.

### Note

For z/OS JES2 or JES3, the following fields are only obtained from the spool queue if JOB-NAME or JOB-NUMBER have also been specified with the FIND request:

```

PROGRAMMER-NAME
ROOM
MESSAGE-CLASS
CARD-COUNT
RECORD-COUNT
TIME-ON-READER,  TIMX-ON-READER
DATE-ON-READER,  DATX-ON-READER
TIME-XEQ-START,  TIMX-XEQ-START
DATE-XEQ-START,  DATX-XEQ-START
TIME-XEQ-STOP,   TIMX-XEQ-STOP
DATE-XEQ-STOP,   DATX-XEQ-STOP

```

Consequently, these fields can only be used as search criteria in combination with JOB-NAME or JOB-NUMBER.



# 44

## SPOOL-UPDATE

---

■ Fields .....	276
■ Relevant Error Codes .....	276
■ Field Descriptions .....	277

<b>File</b>	13
<b>Statement</b>	FIND, PROCESS
<b>Task</b>	Alter the status of a specified spool job, for example, change job class, change destination, delete spool job entry.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
JOB-NUMBER	N5		D	Required if no JOB-NAME or JOB-ID is specified.
JOB-ID	A8		D	Required if no JOB-NAME or JOB-NUMBER is specified.
FUNCTION	A8		D	Required
JOB-NAME	A8		D	Required if no JOB-NUMBER or JOB-ID is specified.
GROUP-ID	A20		D	
CLASS	A8		D	
JES3-CLASS	A1			Valid for JES3 only.
JES3-QUEUE	A4			Valid for JES3 only.
NEW-DESTINATION	A8		D	Valid only if FUNCTION=CHANGE.

## Relevant Error Codes

---

Code	Text
671	Class missing or invalid.
711	Logical Error occurred in Common JES Interface.
712	Request to Common JES Interface failed.
714	Jobname and Job ID missing. One of them required.
715	Duplicate jobnames found. Please specify Job ID.
723	Job not in output service.
724	Requested job not found.
730	Unknown error during alter.
778	Not APF authorized.
820	Unknown command.

Code	Text
821	Job no longer active.
830	JES interface not active.
830	POWER interface not active.
833	You are not allowed to alter this job.
834	Command failed, MGCRE RC =:1:.

## Field Descriptions

Field Name	Type/Length
CLASS	(A1)

New job class or output class to be assigned when FUNCTION=CHANGE or RELEASE.

Field Name	Type/Length
FUNCTION	(A8)

Command to be executed. Possible options:

Option	Explanation
CANCEL	Cancel job.
CHANGE	Change one or more spool-queue attributes. CLASS, NEW-DESTINATION.
HOLD	Set job in HOLD status.
RELEASE	Release job.

Field Name	Type/Length
GROUP-ID	(A20)

Identification of JES SYSOUT group.

Field Name	Type/Length
JES3-CLASS	(A1)

Valid for JES3 only. Specifies the output class of the SYSOUT data sets that should be modified.

Field Name	Type/Length
JES3-QUEUE	(A4)

Valid for JES3 only. Specifies the output queue of the SYSOUT data sets that should be modified. Possible values are HOLD and WTR.

Field Name	Type/Length
JOB-ID	(A8)

Job number in alphanumeric format.

Field Name	Type/Length
JOB-NAME	(A8)

Name of job.

Field Name	Type/Length
JOB-NUMBER	(N7)

Job number assigned by JES.

Field Name	Type/Length
NEW-DESTINATION	(A8)

New destination for a given GROUP-ID. This GROUP-ID may be read using the view SPOOL-QUEUE. Valid only if FUNCTION=CHANGE.

# 45

## SUBMIT

---

▪ Fields .....	280
▪ Relevant Error Codes .....	281
▪ Field Descriptions .....	281
▪ SUBMIT Programming Notes .....	284

<b>File</b>	200
<b>Statement</b>	PROCESS
<b>Task</b>	This view allows you or a program to submit a job to the operating system. The job to be submitted can reside on disk or in storage. See also <a href="#">SUBMIT Programming Notes</a> at the bottom of this view description.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
CARD	A80		D	Required if no DSNAME / MEMBER is given.
JOB-NUMBER	N7		D	
JOB-ID	A8		D	
DSNAME	A54		D	Required if no CARD is given.
PASSWORD	A8		D	
FUNCTION	A8		D	Required for the last submit request.
IDENTIFIER	A8		D	Required with multiple parallel submit calls.
JOB-NAME	A8		D	
FROM-NODE	N5		D	
FROM-USERID	A8		D	
FROM-USER-PASSWORD	A32		D	
MEMBER	A10		D	Required
GENERATION	N9		D	
VOLSER	A6		D	Required only if dataset is not cataloged.
PRODUCT	A1		D	
OPTIONS	A8		D	



## Relevant Error Codes

---

Code	Text
500	VSAM error.
699	GETVIS failed.
899	I/O error during read.
901	Alloc of reader failed.
902	Dynamic alloc failed.
993	OPEN error.

## Field Descriptions

---

Field Name	Type/Length
CARD	(A80)

JCL record to be sent from Natural to the internal reader.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset or file name containing the JCL to be submitted. To perform the submit, a second SUBMIT request with FUNCTION=CLOSE is required.

Field Name	Type/Length
FROM-NODE	(N5)

Entire System Server node on which the JCL for the job is to be read. Ignored if it matches the USING node or the node where the user is already logged in.

Field Name	Type/Length
FROM-USERID	(A8)

User ID in the FROM-NODE.

Field Name	Type/Length
FROM-USER-PASSWORD	(A32)

User password in the FROM-NODE.

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
<i>blank</i>	Default. Pass a JCL card or the name of the dataset or member/element to be submitted to the Entire System Server.
CLOSE	All cards have been processed - perform the submit. You must specify this function for the last SUBMIT request.

Field Name	Type/Length
GENERATION	(N9)

Generation number of member (only valid for PDSE version 2 with MAXGENS > 0).

Field Name	Type/Length
IDENTIFIER	(A8)

Required if multiple submit calls are executing in parallel, as requests for the same job to be submitted must have the same identifier.

Field Name	Type/Length
JOB-ID	(A8)

Same as JOB-NUMBER, only in alpha format.

Field Name	Type/Length
JOB-NAME	(A8)

Name of job to be submitted.

Field Name	Type/Length
JOB - NUMBER	(N7)

This field is returned after a call with FUNCTION=CLOSE.

Job number assigned by the JES . If JOB - NUMBER=0, no valid job card was sent.

Field Name	Type/Length
MEMBER	(A10)

Name of member that contains the JCL to be submitted.

Field Name	Type/Length
OPTIONS	(A8)

Specify X to expand all ++INCLUDE statements.

Field Name	Type/Length
PASSWORD	(A8)

Password for protected dataset.

Field Name	Type/Length
PRODUCT	(A1)

Access method for dataset containing the JCL. Possible options:

Option	Explanation
L	CA-Librarian
P	CA-Panvalet

Field Name	Type/Length
VOLSER	(A6)

Volume serial number. Required only if the dataset is not cataloged.

## SUBMIT Programming Notes

---

SUBMIT is an UPDATE view, i.e., data is transmitted from the Natural program (client side) to ESY (server side).

The Entire System Server view SUBMIT returns codes and messages that describe whether the requested operation has been executed successfully or not, and the JOB-NUMBER of a submitted job.

Therefore, the DEFINE DATA section of the Natural program should only contain the fields shown in the following example:

```
1 SUBMIT VIEW OF SUBMIT
  2 ERROR-CODE
  2 ERROR-TEXT
  2 SYSTEM-MESSAGE-CODE

  2 SYSTEM-CODE
  2 JOB-NUMBER
```

These fields in DEFINE DATA are the fields returned from the SUBMIT view in Entire System Server to the calling Natural program.

Defining other fields in the DDM is not critical, but the access to these fields may lead to unpredictable results.

# 46

## SYSTEM-COMMAND

---

■ Fields .....	286
■ Field Descriptions .....	286
■ Examples .....	287
■ Default Order of Data Returned .....	290

<b>File</b>	46
<b>Statement</b>	FIND
<b>Task</b>	Execute TSO commands online or in batch.  TSO commands can be issued in Natural environments from TP monitors other than TSO.  Up to 50 commands and sub-commands are allowed.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
SYSTEM-MESSAGE-CODE	A10			
NODE	N5		D	
NODE-NAME	A16		D	
LINE	A132			
COMMAND	A80	M20	D	
SUB-COMMAND	A80	M50	D	Command line for an FTP server. Up to 50 Sub-Commands are allowed.

## Field Descriptions

---

Field Name	Type/Length
LINE	(A132)

Output line. If more than one output line is expected, a FIND loop is required to retrieve all of them.

Field Name	Type/Length
COMMAND	(A80) (M20)

Commands to be executed by TSO.

Field Name	Type/Length
SUB - COMMAND	(A80) (M50)

For COMMAND FTP, commands specific to FTP are set up in field SUB - COMMAND. Up to 50 SUB-COMMANDS are allowed. SUB-COMMANDS are only allowed for ONE COMMAND in a FIND or PROCESS statement.

As an example see section [How to run an FTP from Mainframe Natural Using Entire System Server](#). Using the new sub-command key PASSWORD will prevent the password to appear unencrypted, e.g. in traces or outputs.

## Examples

### TSO Command LIST to Request a List of All Datasets

The following program issues the TSO command LIST and requests a list of all datasets that start with the string WKK:

```
FIND      COMMAND WITH  COMMAND = 'LISTC LVL (''WKK'')'
  DISPLAY LINE (AL=79)
  END
```

#### Output from the program:

```
IKJ56644I NO VALID TSO USERID, DEFAULT USER ATTRIBUTES USED
READY
PROFILE PREF(WKK      )
READY
LISTC LVL ('WKK')
NONVSAM ----- WKK.BROKER.API.C
      IN-CAT --- UCAT.COM811
NONVSAM ----- WKK.BROKER.API.LIST
      IN-CAT --- UCAT.COM811
NONVSAM ----- WKK.BROKER.API.LOAD
      IN-CAT --- UCAT.COM811
NONVSAM ----- WKK.BROKER.API.OBJ
      IN-CAT --- UCAT.COM811
NONVSAM ----- WKK.CLOG
      IN-CAT --- UCAT.COM811
NONVSAM ----- WKK.COMN.IV123.SYSTEM
      IN-CAT --- UCAT.COM811
NONVSAM ----- WKK.DUMP
```

## How to run an FTP from Mainframe Natural Using Entire System Server

Using the view SYSTEM-COMMAND, you may execute an FTP from Natural to anywhere, as shown in the example below. First, ask your TCP/IP administrator for the configuration information required by the TCP/IP client programs. This dataset/member is allocated dynamically with a special DDNAME SYSTCPD. The dataset/member name will of course be different at your installation.

Then, code the command FTP, and the subsequent FTP commands are coded here as SUB-COMMANDS.

In the following example, you logon as an anonymous user to the Software AG FTP server and read a list of directories or files available at this moment.

```
DEFINE DATA LOCAL
01 SYSTEM-COMMAND  VIEW OF SYSTEM-COMMAND
  02 LINE
END-DEFINE
FIND      SYSTEM-COMMAND  WITH NODE = 148
  AND COMMAND = 'alloc f(systcpd) da(''sysm.daef.parmlib(tcpdata)'') shr'
  AND COMMAND = 'FTP'
  AND SUB-COMMAND = 'ftp.softwareag.com'
  AND SUB-COMMAND = 'anonymous'
  AND SUB-COMMAND = 'PASSWORD=abc@softwareag.de'
  AND SUB-COMMAND = 'dir'
  AND SUB-COMMAND = 'help'
  AND SUB-COMMAND = 'quit'
  PRINT  LINE(AL=132)
END-FIND
END  ↵
```

The output looks like this:

```
PROFILE PREF(WKK      )

READY
ALLOC F(SYSTCPD) DA('SYSM.DAEF.PARMLIB(TCPDATA)') SHR
READY
FTP
>EZA1736I FTP
>EZY2640I Using /etc/ftp.data for local site configuration parameters.
>EZA1450I IBM FTP CS V1R8
>EZA1456I Connect to ?
>EZA1736I ftp.softwareag.com
>EZA1554I Connecting to: server21.softwareag.com 193.26.193.60 port: 21.
>220 Software AG FTP Server ready
>EZA1459I NAME (ftp.softwareag.com:WKK):
>EZA1701I >>> USER anonymous
>331 Anonymous login ok, send your complete email address as your password.
>EZA1789I PASSWORD:
>EZA1701I >>> PASS
>230-
```



[illegible]

## Default Order of Data Returned

---

Each line of the output listing is presented in order.

# 47

## SYSTEM-INFO

---

■ Fields .....	292
■ Field Descriptions .....	293

<b>File</b>	26
<b>Statement</b>	FIND
<b>Task</b>	Retrieve information from the operating system on which this Entire System Server is running.  In an Entire Net-Work environment, this view can be used to determine which operating systems are to be supported.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
NODE-NAME-LIST	A16			
SYSTEM-MESSAGE-CODE	A10			
SYSTEM-TYPE	A8			
SYSTEM-RELEASE	A8			
SECURITY	A4			
AUTO-LOGON	A3			
ESY-VERSION	A8			
NODE-ID	A50			
JOBNAME	A8			
STARTUP-PARM	A80		D	
LOCAL-DATX	D			
LOCAL-TIMX	T			
CPU-ID	A12		D	
CPU-UTILIZATION	N3			
GMT-DIFFERENCE	N3		D	
LAST-IPL-DATX	D		D	
LAST-IPL-TIMX	T		D	
PRODUCT-NAME	A16			
PRODUCT-VERSION	A8			
SPOOL-RELEASE	A8		D	
SPOOL-TYPE	A8		D	
SYSTEM-NAME	A8		D	
SMF-RECORD	N3		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
APF	N3		D	

## Field Descriptions

Field Name	Type/Length
APF	(A3)

Possible values:

Value	Explanation
NO	Entire System Server is not running APF-authorized.
YES	Entire System Server is running APF-authorized.

Field Name	Type/Length
AUTO-LOGON	(A3)

Automatic logon option for the Entire System Server. If YES is specified in the corresponding startup parameter, the Entire System Server will perform an automatic logon to the active security system using \*INIT-USER as user ID.

Field Name	Type/Length
CPU-ID	(A12)

Bytes 1-8 contain the CPU identification number, bytes 9-12 the machine-type number of the CPU. Both provide a unique CPU identification that can be used in associating results with an individual machine.

Field Name	Type/Length
CPU-UTILIZATION	(N3)

Percentage of time the CPU is busy.

Field Name	Type/Length
ESY-VERSION	(A8)

The version number of this Entire System Server, for example, 3.3.1.

Field Name	Type/Length
GMT-DIFFERENCE	(N3)

Time difference in hours between local time and GMT.

Field Name	Type/Length
JOBNAME	(A8)

Job name of the Entire System Server node.

Field Name	Type/Length
LAST-IPL-DATX	(D)

Date in Natural format of last system IPL.

Field Name	Type/Length
LAST-IPL-TIMX	(T)

Time in Natural format of last system IPL.

Field Name	Type/Length
LOCAL-DATX	(D)

Current date in Natural format.

Field Name	Type/Length
LOCAL-TIMX	(T)

Current time of day in Natural format.

Field Name	Type/Length
NODE-ID	(A50)

Logical identifier of the node. This value is defined for the node using the startup parameter IDENTIFIER.

Field Name	Type/Length
NODE - NAME - LIST	(A16)

Lists entries of Entire System Server Nodes.

Field Name	Type/Length
PRODUCT - NAME	(A16)

The name of the product as defined in the operating system. Possible value: z/OS.

Field Name	Type/Length
PRODUCT - VERSION	(A8)

The version of the product as defined in the operating system. This will be in the format vv.rr.mm.

Field Name	Type/Length
SECURITY	(A4)

Security system defined in Entire System Server startup parameters.

Field Name	Type/Length
SMF - RECORD	(N3)

SMF record number written by the Entire System Server.

Field Name	Type/Length
SPOOL - RELEASE	(A8)

Spooling system release number.

Field Name	Type/Length
SPOOL - TYPE	(A8)

Spooling system type.

Field Name	Type/Length
STARTUP - PARM	(A80)

Entire System Server startup parameters. To obtain all startup parameters, use a processing loop in Natural.

Field Name	Type/Length
SYSTEM-NAME	(A8)

SMF system name.

Field Name	Type/Length
SYSTEM-RELEASE	(A8)

Operating system release number.

Field Name	Type/Length
SYSTEM-TYPE	(A8)

Operating system type. For compatibility reasons, MVS/ESA is returned. Use the field `PRODUCT-NAME` to determine the name of the product as defined in the operating system. Possible options:

Option	Explanation
MVS/ESA	Old notation for z/OS

#### Example 1:

The following example displays system information on the Entire System Server with Node Number 148:

PROCESS SYSTEM-INFO WITH NODE = 148 DISPLAY SYSTEM-TYPE SYSTEM-RELEASE PRODUCT-NAME (EM=X(8)) PRODUCT-VERSION SPOOL-TYPE				
Sample output from above program:				
SYSTEM-TYPE	SYSTEM-RELEASE	PRODUCT-NAME	PRODUCT-VERSION	SPOOL-TYPE
-----				
MVS/ESA	SP7.0.2	z/OS	01.02.00	JES2



**Example 2:**

The following example displays spool information and the startup parameter with the keyword `SP00L` of the Entire System Server with Node Number 85:

```
PROCESS SYSTEM-INFO WITH NODE = 85
      AND STARTUP-PARM = '*SP00L=*'
      DISPLAY SP00L-TYPE SP00L-RELEASE STARTUP-PARM (EM=X(18))
```

Sample output from above program:

```
SP00L-TYPE  SP00L-RELEASE  STARTUP-PARM
-----
JES3        OS2.10.0       SP00L=JES3
```



# 48

## TCB

---

■ Fields .....	300
■ Relevant Error Codes .....	300
■ Field Descriptions .....	301

<b>File</b>	24
<b>Statement</b>	FIND
<b>Task</b>	Retrieve Task Control Block for a given job and interpret its contents.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
JOB-NAME	A8		D	Required.
TCB-ADDRESS	B4		D	
RB-CHAIN	B4		D	
DEB-CHAIN	B4		D	
LLS-CHAIN	B4		D	
COMPLETION-CODE	B4		D	
MOTHER-TCB	B4		D	
SISTER-TCB	B4		D	
DAUGHTER-TCB	B4		D	

## Relevant Error Codes

---

Code	Text
801	Job not found
805	Invalid TCB address

## Field Descriptions

---

Field Name	Type/Length
COMPLETION-CODE	(B4)

Completion code for the task.

Field Name	Type/Length
DAUGHTER-TCB	(B4)

TCB address of task last attached by this task.

Field Name	Type/Length
DEB-CHAIN	(B4)

Address of DEB chain (open datasets).

Field Name	Type/Length
JOB-NAME	(A8)

Name of job to be scanned.

Field Name	Type/Length
LLS-CHAIN	(B4)

Address of LLS chain (loaded programs).

Field Name	Type/Length
MOTHER-TCB	(B4)

TCB address of task which attached this task.

Field Name	Type/Length
RB-CHAIN	(B4)

Address of request block chain (active programs).

Field Name	Type/Length
SISTER-TCB	(B4)

TCB address of task previously attached by the task which attached this task.

Field Name	Type/Length
TCB-ADDRESS	(B4)

TCB address.

### Example 1:

This example program displays the TCB for job NPRWKK:

FIND TCB with JOB-name = 'NPRWKK' and NODE = 29 DISPLAY TCB-ADDRESS RB-CHAIN DEB-CHAIN MOTHER-TCB SISTER-TCB END   ←				
Example output from above program:				
TCB-ADDRESS	RB-CHAIN	DEB-CHAIN	MOTHER-TCB	SISTER-TCB
-----	-----	-----	-----	-----
008DDD40	008DB428	00000000	008D5A68	008DD6B8
008DD6B8	008DB940	00000000	008D5A68	008D5508
008D5468	008FBE18	008DFE94	008FE1F8	00000000
008FE1F8	008FBF87	008E96C4	008FF338	008FE4A8
008D57B8	008DB170	00000000	008D5A68	008DD160
....				

### Example 2:

This example program displays the users of TCB addresses for job NPRWKK:

FIND TCB WITH JOB-NAME = 'NPRWKK' AND NODE = 29 FIND NATPROC-USERS WITH TCB-ADDRESS = TCB.TCB-ADDRESS AND NODE = 29 DISPLAY TCB-ADDRESS USER-ID END	
Example output from above program:	

TCB-ADDRESS	USER-ID
-----	-----
008DDD40	WKK
008DD6B8	DL
008D5A68	****MAIN
008D5508	
008FE1F8	
008D57B8	
008FE4A8	
008FF338	
008DD160	
008DD2F8	

---



# 49

## UNIT-ATTRIBUTES

---

■ Fields .....	306
■ Field Descriptions .....	307

<b>File</b>	6
<b>Statement</b>	FIND
<b>Task</b>	Retrieve information relating to devices, for example, unit address, device, device type, online/offline status, free cylinders.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
UNIT-HEX	B2		D	
UNIT	A4		D	
VOLSER	A6		D	
CLASS	A4		D	
DEVICE-STATUS	A7		D	
SERIES	A6		D	
VOLUME-STATUS	A8		D	
DCB-COUNT	N3		D	
ACTIVITY	A9		D	
DEVICE-TYPE	B4		D	
DENSITY	A9		D	
UCB-ADDRESS	B4		D	
CONTIG-CYLINDERS	N7		D	
CONTIG-CYLINDERS-TRACK-MANAGED	N7		D	
CONTIG-TRACKS	N4		D	
EAV	A3		D	
FREE-CYLINDERS	N7		D	
FREE-CYLINDERS-TRACK-MANAGED	N7		D	
FREE-EXTENTS	N4		D	
FREE-EXTENTS-TRACK-MANAGED	N4		D	
FREE-TRACKS	N4		D	
MOUNT-STATUS	A10		D	
SMS	A3		D	
TOTAL-CYLINDERS	N7		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
TOTAL-CYLINDERS-TRACK-MANAGED	N7		D	
TRACKS-PER-CYLINDER	N3		D	
VTOC-TYPE	A1		D	

## Field Descriptions

Field Name	Type/Length
ACTIVITY	(A9)

Activity of device. Possible values:

Value	Explanation
ALLOCATED	Device allocated.
BUSY	Device busy.

Field Name	Type/Length
CLASS	(A4)

The device class. Possible values:

Value	Explanation
COMM	Communications.
CTCA	Channel-to-channel adapter.
DASD	Direct access.
DISP	Display station.
TAPE	Tape.
UREC	Unit record.

Field Name	Type/Length
CONTIG-CYLINDERS	(N7)

Number of cylinders in largest free extent.

Field Name	Type/Length
CONTIG-CYLINDERS-TRACK-MANAGED	(N7)

Number of cylinders in largest free extent in track managed space on volume.

Field Name	Type/Length
CONTIG-TRACKS	(N4)

Number of tracks in largest free extent (in addition to CONTIG-CYLINDERS).

Field Name	Type/Length
EAV	(A3)

Specifies whether a device is an Extended Address Volume. Possible values:

- NO
- YES

Field Name	Type/Length
DCB-COUNT	(N3)

Number of DCBs currently open on the unit.

Field Name	Type/Length
DENSITY	(A9)

Tape density. Possible values:

Value	Explanation
800	Bits per inch (bpi)
800/1600	
1600	
1600/6250	
6250	

Field Name	Type/Length
DEVICE-STATUS	(A7)

Possible values:

Value	Explanation
CHANGE	Status changing.
OFFLINE	Device is offline.
ONLINE	Device is online.

Field Name	Type/Length
DEVICE-TYPE	(B4)

UCBTYP device type internal code.

Field Name	Type/Length
FREE-CYLINDERS	(N7)

Number of free cylinders on disk pack.

Field Name	Type/Length
FREE-CYLINDERS-TRACK-MANAGED	(N7)

Number of free cylinders in track managed space on volume.

Field Name	Type/Length
FREE-EXTENTS	(N4)

Number of free extents on disk pack.

Field Name	Type/Length
FREE-EXTENTS-TRACK-MANAGED	(N4)

Number of free extents in track managed space on volume.

Field Name	Type/Length
FREE-TRACKS	(N4)

Number of free tracks (in addition to FREE-CYLINDERS).

Field Name	Type/Length
MOUNT-STATUS	(A10)

Possible values:

- MOUNT PEND
- NOT READY
- REMOVABLE
- RESERVED
- RESIDENT

Field Name	Type/Length
SERIES	(A6)

Device series, for example, 3330-1.

Field Name	Type/Length
SMS	(A3)

Whether device is SMS-managed. Possible values:

- NO
- YES

Field Name	Type/Length
TOTAL-CYLINDERS	(N7)

Total number of cylinders on disk pack.

Field Name	Type/Length
TOTAL-CYLINDERS-TRACK-MANAGED	(N7)

Total number of cylinders in track managed space on volume.

Field Name	Type/Length
TRACKS-PER-CYLINDER	(N3)

Number of tracks per cylinder.

Field Name	Type/Length
UCB-ADDRESS	(B4)

Memory address of unit control block for unit.

Field Name	Type/Length
UNIT	(A4)

Unit address in EBCDIC.

Field Name	Type/Length
UNIT-HEX	(B2)

Binary device number, used for comparisons (X'12A' > X'120', but '12A' < '120').

Field Name	Type/Length
VOLSER	(A6)

Volume serial number currently mounted on the unit.

Field Name	Type/Length
VOLUME-STATUS	(A8)

Possible values:

PRIVATE PUBLIC STORAGE
------------------------

Field Name	Type/Length
VTOC-TYPE	(A1)

Type of VTOC. Possible values:

Value	Explanation
I	Indexed.
N	Normal.



# 50

## UNIX-DIRECTORY

---

■ Fields .....	314
■ Relevant Error Codes .....	314
■ Field Descriptions .....	315

<b>File</b>	97
<b>Statement</b>	FIND
<b>Task</b>	This view makes it possible to display directory information related to a z/OS UNIX file system.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
NODE	N5.0		D	D Node ID (DBID).
ERROR-CODE	N3.0			
ERROR-TEXT	A58			
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
PATH	A54		D	Fully qualified path name.
FILE	A54		D	File name.
TYPE	A1		D	File type D = directory 3 standard file, see also <a href="#">below</a> .
ACCESS-USER	A3		D	Access rights of the user.
ACCESS-GROUP	A3		D	Access rights of the group.
ACCESS-OTHER	A3		D	Access rights for someone neither being the user nor a member of the group.
OWNER	A8		D	File owner.
OWNER-GROUP	A8		D	Group of the file owner.
FILE-SIZE	N8.0		D	Size in bytes.

## Relevant Error Codes

---

Code	Text
530	Access denied by Security Facility.
568	File not found.
893	Getmain failed.
899	I/O error on file.
993	Cannot open file.

## Field Descriptions

---

Field Name	Type/Length
NODE	(N5.0)

D Node ID (DBID).

Field Name	Type/Length
ERROR-CODE	(N3.0)

Message code.

Field Name	Type/Length
ERROR-TEXT	(A58)

Text describing error.

Field Name	Type/Length
NODE-NAME	(A16)

LPAR where node is running.

Field Name	Type/Length
SYSTEM-MESSAGE - CODE	(A10)

Code of system message.

Field Name	Type/Length
PATH	(A54)

Path of directory to be read.

Field Name	Type/Length
FILE	(A253)

Name of file or directory.

Field Name	Type/Length
TYPE	(A1)

Directory or file.

Values	Explanation
D	Directory.
3	Standard file.

Field Name	Type/Length
ACCESS-USER	(A3)

Access rights of user.

Values	Explanation
R	Read
W	Write
X	Execute

Field Name	Type/Length
ACCESS-GROUP	(A3)

Access rights of group.

Values	Explanation
R	Read
W	Write
X	Execute

Field Name	Type/Length
ACCESS-OTHER	(A3)

Access rights of others.

Values	Explanation
R	Read
W	Write
X	Execute

Field Name	Type/Length
OWNER	(N8)

Owner of file/directory.

Field Name	Type/Length
OWNER-GROUP	(N8)

Group of owner.

Field Name	Type/Length
FILE-SIZE	(N8.0)

Size of file in bytes.



# 51

## VTOC

---

■ Fields .....	320
■ Relevant Error Codes .....	321
■ Field Descriptions .....	321

<b>File</b>	4
<b>Statement</b>	FIND
<b>Task</b>	List the VTOC of a specified disk with related information such as volume serial number, dataset name, file size, etc.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
VOLSER	A6		D	Required.
DSNAME	A54		D	
FILE-SIZE	N10		D	
DSORG	A4		D	
CREATION-DATE	A8		D	
EXPIRATION-DATE	A8		D	
LAST-TTR	B3		D	
LAST-TTTR	B4		D	
EXTENTS	A192		D	
NUMBER-OF-EXTENTS	N3		D	
CYLINDERS-ALLOCATED	N7		D	
UNIT	A4		D	
SERIES	A8		D	
CREATION-DATX	D		D	
EXPIRATION-DATX	D		D	
EXTENT-TYPE	A4		D	
EXTENTS-ARRAY	A192	M/16	D	
LRECL	N5		D	
BLKSIZE	N5		D	
RECFM	A5		D	
ALLOCATION-TYPE	A4		D	
PRIMARY-QTY	N10		D	
SECONDARY-QTY	N10		D	



Dictionary Field Name	F/L	Mu	DE	Remarks
PERCENT-USED	N3		D	
TRACKS-ALLOCATED	N3		D	
SECURITY	A5			
LAST-REFERENCE	A8		D	
LAST-REFERENCE-DATX	D		D	
UPDATED-SINCE-BACKUP	A3		D	
SMS	A3		D	
DSNTYPE	A8		D	

## Relevant Error Codes

Code	Text
500	VSAM error.
699	Not enough main storage available.
781	Unable to obtain storage for work area extension.
782	Error from :1: for :2:, RC :3:, REASON :3:
783	Unable to allocate :1:, RC :2:, REASON :3:
784	Unable to open VTOC on :1:, RC :2:
785	CVAF:1: failed with RC :2: and CVSTAT :3:
899	I-O error during read.
996	Volume not online.

## Field Descriptions

Field Name	Type/Length
ALLOCATION-TYPE	(A4)

Allocation type specified. Possible values:

Value	Explanation
ABS	Absolute
BLK	Block
CYL	Cylinder
TRK	Track

Field Name	Type/Length
BLKSIZE	(N5)

Block size.

Field Name	Type/Length
CREATION-DATE	(A8)

Dataset creation date in format *DD/MM/YY*. If no creation date is specified, the field is filled with asterisks *\*\*\*\**.

Field Name	Type/Length
CREATION-DATX	(D)

Creation date of file in Natural format.

Field Name	Type/Length
CYLINDERS-ALLOCATED	(N7)

Number of integral cylinders allocated.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name when returned as output field. When used as input fields, this field can be used to select further datasets and supports the asterisk notation (\*) as wildcard selection.

Field Name	Type/Length
DSNTYPE	(A8)

Data Set Type Specification.

Field Name	Type/Length
DSORG	(A4)

Dataset organization, for example PS for sequential dataset, PO for partitioned dataset, POE for PDSE.

Field Name	Type/Length
EXPIRATION-DATE	(A8)

Dataset expiration date in format *DD/MM/YY*. If no creation date is specified, the field is filled with asterisks *\*\*\*\**.

Field Name	Type/Length
EXPIRATION-DATX	(D)

Expiration date of file in Natural format.

Field Name	Type/Length
EXTENTS	(A192)

Extent information. The field contains 16 entries, each 12 bytes long. Each entry contains the following:

- Low cylinder and head (track) address of extent (binary *CCHH*)
- High cylinder and head (track) address of extent (binary *CCHH*)
- Number of cylinders in extent
- Number of additional tracks in extent

Field Name	Type/Length
EXTENTS-ARRAY	(A192) M16

Extent information array of 16 x 16 entries, each 12 bytes long. Each entry contains the following:

- Low cylinder and head (track) address of extent (binary *CCHH*)
- High cylinder and head (track) address of extent (binary *CCHH*)
- Number of cylinders in extent
- Number of additional tracks in extent

Field Name	Type/Length
EXTENT-TYPE	(A4)

Possible values:

Value	Explanation
FREE	This entry describes a free extent.
USED	This entry describes a regular data set (default value).
VTOC	Indicates the VTOC extent.

Field Name	Type/Length
FILE-SIZE	(N10)

Number of tracks currently allocated. (CYLINDERS-ALLOCATED in tracks + TRACKS-ALLOCATED).

Field Name	Type/Length
LAST-REFERENCE	(A8)

Last reference date in format *DD/MM/YY*. If the last reference date is null, this field is filled with asterisks \*\*\*\*.

Field Name	Type/Length
LAST-REFERENCE-DATX	(D)

Last reference date in Natural format.

Field Name	Type/Length
LAST-TTR	(B3)

Last track.

Field Name	Type/Length
LAST-TTTR	(B4)

Last used track and block on track (TTTR).

Field Name	Type/Length
LRECL	(N5)

Logical record length.

Field Name	Type/Length
NUMBER-OF-EXTENTS	(A192)

Number of extents used. Valid values are 1 - 255.

Field Name	Type/Length
PERCENT-USED	(N3)

Amount of space used in the dataset as a percentage of total space.

Field Name	Type/Length
PRIMARY-QTY	(N10)

Primary allocation.

Field Name	Type/Length
RECFM	(A5)

Record format, for example, FB.

Field Name	Type/Length
SECONDARY-QTY	(N10)

Secondary allocation.

Field Name	Type/Length
SECURITY	(A5)

Security status. Possible values:

Value	Explanation
NONE	Not password-protected.
READ	Password-protected for read and write operations.
VSAM	VSAM file.
WRITE	Password-protected for write operations.

Field Name	Type/Length
SERIES	(A8)

Device series for the unit, for example, 3380.

Field Name	Type/Length
SMS	(A3)

Specifies whether the file is on an SMS-managed unit or device, YES or NO.

Field Name	Type/Length
TRACKS-ALLOCATED	(N3)

Number of remaining tracks allocated in addition to CYLINDERS-ALLOCATED.

Field Name	Type/Length
UNIT	(A4)

Device number of the unit on which the dataset resides.

Field Name	Type/Length
UPDATED-SINCE-BACKUP	(A3)

Specifies whether the file has been updated since the last backup, YES or NO.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number.

# 52

## VTOC-UPDATE

---

■ Fields .....	328
■ Relevant Error Codes .....	328
■ Field Descriptions .....	329

<b>File</b>	7
<b>Statement</b>	PROCESS
<b>Task</b>	Perform VTOC updates, for example, rename, scratch, purge datasets.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DSNAME	A54		D	Required.
NEWNAME	A54		D	Relevant for FUNCTION=RENAME.
FUNCTION	A8		D	Required.
VOLSER	A6		D	Required.
LEAVE	N5		D	Relevant for FUNCTION=RELEASE..
CATALOG-UPDATE	A3		D	Relevant for FUNCTION=RENAME or SCRATCH.
WAIT	A3		D	Relevant for VOLSER=MIGRAT.

## Relevant Error Codes

---

Code	Text
535	File has invalid format.
539	DFHSMREQ failed with RC=...
571	DSNAME missing.
600	Unknown function.
851	File not on volume.
852	No password supplied / VSAM data space.
853	Retention cycle unexpired / NEWNAME exists.



## Field Descriptions

Field Name	Type/Length
CATALOG-UPDATE	(A3)

Update catalog after a file is scratched or renamed. Possible options:

Option	Explanation
NO	Catalog is not updated.
YES	Catalog is updated.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name.

Field Name	Type/Length
FUNCTION	(A8)

Possible functions are:

Function	Explanation
PURGE	Delete dataset or file regardless of expiration date.
RELEASE	Release unused space.
RENAME	Rename dataset or file.
SCRATCH	Delete dataset or file.

Field Name	Type/Length
LEAVE	(N5)

Number of free tracks after the unused tracks are freed with FUNCTION=RELEASE.

Field Name	Type/Length
NEWNAME	(N54)

Relevant when FUNCTION=RENAME. New name to be assigned to the dataset or file.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number.

Field Name	Type/Length
WAIT	(A3)

Relevant when VOLSER=MIGRAT. Possible values are:

Value	Explanation
YES	Wait for the dataset to be recalled from a migration volume before deleting it.
NO	Delete the migrated dataset without recalling (default).

# 53

## WRITE-FILE

---

■ Fields .....	332
■ Relevant Error Codes .....	333
■ Field Descriptions .....	334
■ WRITE-FILE Programming Notes .....	339
■ WRITE-FILE and RELEASE Unused Space .....	339
■ Write ISPF Statistics .....	340

<b>File</b>	204
<b>Statement</b>	PROCESS
<b>Task</b>	<p>This view makes it possible to write data to an operating system file. Support of library systems such as CA-Panvalet, CA-Librarian, LMS is provided.</p> <p>See also <a href="#">WRITE-FILE Programming Notes</a> at the bottom of this view description.</p>

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
DISP	A3		D	
DSNAME	A54		D	Required.
FUNCTION	A8		D	
IDENTIFIER	A8		D	Required for multiple parallel WRITE-FILE calls.
RECORD	A253		D	
RECORD-LENGTH	N5		D	
SEGMENT-LENGTH	N3		D	
SEGMENT-NUMBER	N5		D	
UPDATE-INPLACE	A3		D	
BLKSIZE	B2		D	Required for tape datasets with no standard label.
BLOCK-TTR	B3		D	
BLOCK-TOKEN	B4		D	
GENERATION	N9		D	
KEY	A253		D	
LRECL	B2		D	Required for tape datasets with no standard label.
MEMBER	A10		D	
PRODUCT-OPTIONS	A80		D	When PRODUCT=L.
PASSWORD	A8		D	
PRODUCT	A1		D	
RECFM	A2		D	Required for tape datasets with no standard label.
REPLACE	A3		D	
STATS	A3		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
TAPE - UNLOAD	A3		D	
USER - DATA	A120		D	When FUNCTION=CLOSE.
USER - DATA - HEX	B120		D	When FUNCTION=CLOSE
USER - DATA - LENGTH	N3		D	When FUNCTION=CLOSE.
VOLSER	A6		D	Required only if dataset is not cataloged.

## Relevant Error Codes

Code	Text
530	Access denied by Security Facility.
541	Member generation not found in directory.
542	GENERATION not valid for this library.
553	I-O error in directory.
556	File is in use.
557	File held by linkage editor.
558	No space in directory.
559	Stow error.
560	Segment length greater than 253.
590	End-of-data reached during UPDATE - INPLACE.
591	Member not found for UPDATE - INPLACE.
592	Record length error for variable UPDATE - INPLACE.
608	ISITMGD failed with RC :1: and reason :2:.
678	Member already exists.
870	RECORD field not in search buffer.
871	MEMBER not specified.
872	Record format not supported.
873	Record length missing.
874	RECORD - LENGTH > LRECL.
875	Position of data field > RECORD - LENGTH.
883	Dataset is full.
889	Permanent I/O error while writing dataset.
899	Permanent I/O error while reading dataset.
901	Dynamic allocation failed.
991	Unknown product.
993	Open error.

Code	Text
997	File not PDS/Sequential.
998	Member not found.

## Field Descriptions

---

Field Name	Type/Length
BLKSIZE	(B2)

Block size for dataset.

Required only for tape datasets that have no standard label.

Field Name	Type/Length
BLOCK-TTR	(B3)

Track value at which to start writing.

Field Name	Type/Length
BLOCK-TOKEN	(B4)

Token value at which to start writing.

For a large format sequential data set, the token is in the format *TTTR* where *TTT* is the relative track address and *R* the number of the block on that track.

Field Name	Type/Length
DISP	(A3)

Disposition of dataset or file. Possible values:

Value	Explanation
MOD	Add records to the end of the sequential dataset.
OLD	Overwrite existing dataset.

Field Name	Type/Length
DSNAME	(A54)

Fully qualified dataset name. Specify `&TEMP.name` here to select a temporary dataset as specified in the Entire System Server startup parameter module. These temporary datasets or files are freed when you log off.

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
<i>blank</i>	Default. Write a record.
CLOSE	All records have been written. Specify this function for the last WRITE-FILE request.
OPEN	Open a new file.  This OPEN can be omitted for simple WRITE-FILE loops, but is recommended for complex, nested WRITE-FILE programs (for example, writing in parallel to several files).

Field Name	Type/Length
GENERATION	(N9)

Generation number of member (only valid for PDSE version 2 with MAXGENS > 0).

Field Name	Type/Length
IDENTIFIER	(A8)

Required if multiple WRITE-FILE calls are executing in parallel. All requests for the same file must have the same identifier.

Field Name	Type/Length
KEY	(A253)

ISAM/VSAM key.

Field Name	Type/Length
LRECL	(B2)

Logical record length. Default length is 80.

Required only for tape datasets that have no standard label.

Field Name	Type/Length
MEMBER	(A10)

Member name.

Field Name	Type/Length
PASSWORD	(A8)

Password for protected dataset or file.

Field Name	Type/Length
PRODUCT	(A1)

Access method used. Possible options:

Option	Explanation
L	CA-Librarian
P	CA-Panvalet

Field Name	Type/Length
PRODUCT-OPTIONS	(A80)

Options for CA-Librarian access method (when PRODUCT=L).

Field Name	Type/Length
RECFM	(A2)

Record format of the dataset.

Required only for tape datasets that have no standard label.



Field Name	Type/Length
RECORD	(A253)

Record to be written.

Field Name	Type/Length
RECORD - LENGTH	(N5)

Length of record (used only if record format is variable).

Field Name	Type/Length
REPLACE	(A3)

Possible options:

Option	Explanation
NO	Add module. If it already exists, issue error code.
REP	Replace module. If it does not already exist, issue error code.
YES	Default. Add module, replace module of the same name, if it exists.

Field Name	Type/Length
SEGMENT - LENGTH	(N3)

Length of segment.

Field Name	Type/Length
SEGMENT - NUMBER	(N5)

Number of segment. If SEGMENT - NUMBER=1, a new logical record is started. If SEGMENT - NUMBER > 1, the segment is a continuation.

Field Name	Type/Length
STATS	(A3)

Generate or update ISPF statistical data, see also [Write ISPF Statistics](#). If STATS=YES,

- ISPF statistical data is generated if
  - the member is new, that is WRITE-FILE is creating the member,
  - or
  - the member already existed, but no ISPF statistical data has yet been generated for example when the member was created by a previous version of WRITE-FILE.

- ISPF statistic data already generated for an old member is updated.

If STATS=DEL, ISPF statistical data of an existing PDS member is deleted. STATS=DEL is valid only for PDS members and these will be always be accessed as if UPDATE-IN-PLACE is set to YES.

The default is STATS=NO. In this case WRITE-FILE behaves like in a previous version where the function did not provide writing of ISPF statistics. No ISPF statistics is generated or updated.

Field Name	Type/Length
TAPE-UNLOAD	(A3)

Unload TAPE during CLOSE:

YES: Unload tape.

NO: Tape is rewound and positioned to beginning of tape (default).

Field Name	Type/Length
UPDATE-INPLACE	(A3)

Valid only for PDS members. It is ignored for PDSE members; these will be always be accessed as if UPDATE-IN-PLACE was set to NO. Possible options:

Option	Explanation
YES	Perform UPDATE-INPLACE function.

Field Name	Type/Length
USER-DATA	(A120)

User data for PDS member, for example, save date, size. Relevant when FUNCTION=CLOSE.

Field Name	Type/Length
USER-DATA-HEX	(B120)

User data for the member in hexadecimal format.

Field Name	Type/Length
USER-DATA-LENGTH	(N3)

Length of data for PDS member. Relevant when FUNCTION=CLOSE.

Field Name	Type/Length
VOLSER	(A6)

Volume serial number (required if dataset is not cataloged).

## WRITE-FILE Programming Notes

WRITE-FILE is an UPDATE view, i.e., data is transmitted from the Natural program (client side) to ESY (server side).

The Entire System Server view WRITE-FILE returns codes and messages that describe whether the requested operation has been executed successfully or not. The DEFINE DATA section of the Natural program should only contain the fields shown below:

```
1 WRITE-FILE VIEW OF WRITE-FILE
2 ERROR-CODE
2 ERROR-TEXT
2 SYSTEM-MESSAGE-CODE
2 SYSTEM-CODE
```

These fields in DEFINE DATA are the fields returned from the WRITE-FILE view in Entire System Server to the calling Natural program. It is not necessary to define any other fields in the DDM; accessing any fields other than those above may lead to unpredictable results.

## WRITE-FILE and RELEASE Unused Space

```
PROCESS FILE-ALLOCATE using DSNAME = xxx, RLSE=YES
...
PROCESS WRITE-FILE using DSNAME = xxx, record = yyy
PROCESS WRITE-FILE using DSNMAE = xxx, function=close
```

After the last PROCESS statement, unused space will be released; only one FILE-ALLOCATION and WRITE-FILE relationship with RLSE is possible at any one time.

## Write ISPF Statistics

---

Writing PDS members in TSO / ISPF or NSPF produces statistics entries. Most common is an order of entries on who edited the member at which time:

MEMBER	VV.MM	CREATED	MODIFIED	TIME	SIZE	INIT	TID	ID
-----+-----+-----+-----+-----+-----+-----+-----+								
AFP1	01.05	19950131	19970403	16:19	23	17		<i>user1</i>
ASMAOPT	01.10	20190613	20190613	13:15	1	1		<i>user2</i>

whereas the columns are explained as follows:

VV	main version
MM	subversion
CREATED	date of creation
MODIFIED	date of modification
TIME	time of modification
SIZE	current record count
INIT	initial record count, when member was created
ID	ID of the user responsible for the latest change

These statistic entries can also be written using WRITE-FILE view outside NSPF or ISPF in an application.

ISPF statistics is described in <https://www.ibm.com/support/knowledgecenter> under *z/OS version> ISPFz/OS> ISPF Messages and Codes> Diagnostic Tools and Information> Diagnostic information*, for example in [https://www.ibm.com/support/knowledgecenter/SSLTBW\\_2.1.0/com.ibm.zos.v2r1.f54mc00/isp-mc28.htm](https://www.ibm.com/support/knowledgecenter/SSLTBW_2.1.0/com.ibm.zos.v2r1.f54mc00/isp-mc28.htm).

# 54

## WRITE-SPOOL

---

■ Fields .....	342
■ Relevant Error Codes .....	343
■ Field Descriptions .....	343
■ WRITE-SPOOL Programming Notes .....	348

<b>File</b>	203
<b>Statement</b>	PROCESS
<b>Task</b>	This view makes it possible to write data directly to spool queues (JES). See also <a href="#">WRITE-SPOOL Programming Notes</a> at the bottom of this view description.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ERROR-CODE	N3			
ERROR-TEXT	A58			
NODE	N5		D	
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
CONTROL	A1		D	
COPIES	B1		D	
DESTINATION	A127		D	
FORM	A8		D	
FUNCTION	A8		D	Required on last request.
RECORD	A253		D	Required.
RECORD-LENGTH	N3		D	Required.
CHARS	A64		D	
CLASS	A1		D	
DATA-SET-ID	A54			
DDNAME	A8			
FCB	A4		D	
FLASH	A4		D	
FSSDATA	A127		D	
HOLD	A8		D	
IDENTIFIER	A8		D	Required if multiple update views are executing in parallel.
JOB-ID	A8		D	
JOB-NUMBER	N7		D	
PORTNO	N5		D	
PROGRAM	A8		D	
PRTOPTNS	A16		D	
PRTQUEUE	A127		D	
REMOTE-USERID	A8		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
TRC	A3		D	

## Relevant Error Codes

Code	Text
556	File is in use.
699	GETVIS failed.
870	RECORD field not in search buffer.
872	RECFM not supported.
873	Record length missing.
874	RECORD-LENGTH > LRECL.
883	Dataset is full.
889	Permanent I/O error while writing dataset.
900	Dynamic sysout allocation failed.
901	Dynamic internal read alloc failed.
991	Unknown product.
993	Open error.
998	Member not found.

## Field Descriptions

Field Name	Type/Length
CHARS	(A64)

Four groups of four bytes each, taken from the JCL

```
'(CHARS=(AAAA,BBBB,CCCC,DDDD))'
```

Sixteen groups of four bytes can be specified for RSO printers (maximum 64 bytes).

Field Name	Type/Length
CLASS	(A1)

SYSOUT class. If omitted, the default class of the Entire System Server node is used.

Field Name	Type/Length
CONTROL	(A1)

Carriage control mode:

Value	Explanation
A	Position 1 is ASA code.
I	SPACE=I
M	Position 1 is machine code.

Field Name	Type/Length
COPIES	(B1)

Number of SYSOUT copies.

Field Name	Type/Length
DATA-SET-ID	(A54)

Internal dataset name of the SYSOUT file (returned after the CLOSE function).

Field Name	Type/Length
DDNAME	(A8)

The DDNAME of the spool file.

Field Name	Type/Length
DESTINATION	(A127)

- Remote destination of this dataset.

May also be specified in the form 'IP:ipaddr' which may be used by a functional subsystem that can perform Internet Protocol (IP) transmission (for example, IP PrintWay).



Field Name	Type/Length
FCB	(A4)

FCB name.

Field Name	Type/Length
FLASH	(A4)

Flash for 3800.

Field Name	Type/Length
FORM	(A8)

SYSOUT form.

Field Name	Type/Length
FSSDATA	(A127)

Specifies data to pass to a functional subsystem (FSS) that controls printing (for example, IP PrintWay). See the documentation for the particular subsystem for additional information.

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. Possible options:

Option	Explanation
<i>blank</i>	Write a record.
CLOSE	All records have been written. Specify this on the last request.

Field Name	Type/Length
HOLD	(A8)

Possible values:

Value	Explanation
NO	The SYSOUT dataset is not to be held.
YES	The SYSOUT dataset is to be held.

Field Name	Type/Length
IDENTIFIER	(A8)

Required if multiple update views are executing in parallel, all requests for the same process must have the same identifier.

Field Name	Type/Length
JOB-ID	(A8)

Returned for FUNCTION=CLOSE.

Job number in alphanumeric format.
------------------------------------

Field Name	Type/Length
JOB-NUMBER	(N7)

Returned for FUNCTION=CLOSE.

Job number.

Field Name	Type/Length
PORTNO	(N5)

Specifies the TCP/IP port number at which a functional subsystem (for example, IP Printway) connects to the printer. See the documentation for the particular subsystem for additional information.

Field Name	Type/Length
PROGRAM	(A8)

Name of writer program to process this dataset.

Field Name	Type/Length
PRTOPTNS	(A16)

Specifies additional print options a functional subsystem can use when printing a `DEST='IP:ipaddr'` routed dataset. See the documentation of the particular subsystem for additional information.

Field Name	Type/Length
PRTQUEUE	(A127)

Specifies the name of the target print queue on a remote host system. The `PRTQUEUE` field applies only to datasets processed by a functional subsystem that can perform Internet Protocol (IP) transmission (for example, IP Printway). See the documentation of the particular subsystem for additional information.

Field Name	Type/Length
RECORD	(A253)

Record to be written.

Field Name	Type/Length
RECORD-LENGTH	(N3)

Length of record.

Field Name	Type/Length
REMOTE-USERID	(A8)

User ID for printing at remote destinations.

Field Name	Type/Length
TRC	(A3)

Value	Explanation
YES	Byte 2 in record used for CHARS (3800) (DCB=OPTCB=J specified).

User information.

## WRITE-SPOOL Programming Notes

---

WRITE-SPOOL is an UPDATE view, that is, data is transmitted from the Natural program (client side) to ESY (server side).

The Entire System Server view WRITE-SPOOL returns codes and messages that describe whether the requested operation has been executed successfully or not.

Therefore, the DEFINE DATA section of the Natural program should only contain the fields shown in this example:

```
1 WRITE-SPOOL VIEW OF WRITE-SPOOL
2 ERROR-CODE
2 ERROR-TEXT
2 SYSTEM-MESSAGE-CODE
2 SYSTEM-CODE
```

These fields in DEFINE DATA statement are the fields returned from the WRITE-SPOOL view in Entire System Server to the calling Natural program.

Defining other fields in DDM is not critical, but the access to these fields may lead to unpredictable results.

# 55

## WRITE-UNIX-FILE

---

■ Fields .....	350
■ Relevant Error Codes .....	350
■ Field Descriptions .....	351

<b>File</b>	215
<b>Statement</b>	PROCESS
<b>Task</b>	This view makes it possible to write data to files in the z/OS UNIX file system.

## Fields

---

Dictionary Field Name	F/L	Mu	DE	Remarks
NODE	N5.0		D	D Node ID (DBID).
ERROR-CODE	N3.0			
ERROR-TEXT	A58			
NODE-NAME	A16		D	
SYSTEM-MESSAGE-CODE	A10			
FUNCTION	A8		D	Function to be performed. Can be left unspecified. See <a href="#">below</a> for possible values.
PATH	A128		D	Fully qualified path name of file to be written.
RECORD	A253		D	Contents of record.
IDENTIFIER	A8		D	Required for multiple parallel WRITE-UNIX-FILE calls.
RECORD-LENGTH	N3.0		D	Length of record to be written.

## Relevant Error Codes

---

Code	Text
530	Access denied by Security Facility.
553	I-O error in directory.
568	File or directory not found.
899	I/O ERROR DURING WRITE

## Field Descriptions

---

Field Name	Type/Length
NODE	(N5.0)

D Node ID (DBID).

Field Name	Type/Length
ERROR-CODE	(N3.0)

Message code.

Field Name	Type/Length
ERROR-TEXT	(A58)

Text describing error.

Field Name	Type/Length
NODE-NAME	(A16)

Name of Node.

Field Name	Type/Length
SYSTEM-MESSAGE - CODE	(A10)

Field Name	Type/Length
FUNCTION	(A8)

Function to be performed. If not left unspecified the following functions are available:

Option	Explanation
CLOSE	Closes all records that have been written.

Field Name	Type/Length
PATH	(A128)

Fully qualified path name of file to be written.

Field Name	Type/Length
RECORD	(A253)

Contents of record.

Field Name	Type/Length
IDENTIFIER	(A8)

Required if multiple WRITE-FILE calls are executing in parallel. All requests for the same file must have the same identifier.

Field Name	Type/Length
RECORD - LENGTH	(N3.0)

Length of record to be written. Default is 132.



# 56

## Related Literature

---

- **z/OS ISPF BookShelf**

See [http://publibz.boulder.ibm.com/cgi-bin/bookmgr\\_OS390/Shelves/ISPZPM90](http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/Shelves/ISPZPM90)

