

# **Entire System Server**

## **User's Guide**

Version 3.7.2

October 2022

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This document applies to Entire System Server Version 3.7.2 and all subsequent releases.

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

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## Document Conventions

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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

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### Product Documentation

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

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- Ask questions and find answers in our discussion forums.
- Get the latest Software AG news and announcements.
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- 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

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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

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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

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■ How a Natural User Benefits from the Entire System Server .....	11
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This chapter covers the following topics:

## Contents of this Documentation

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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

---

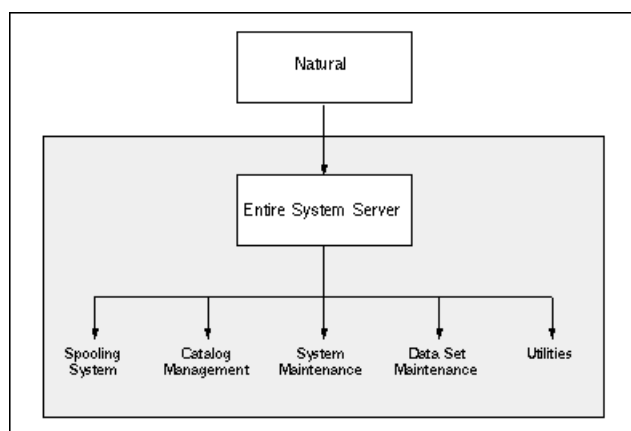
The Software AG product Entire System Server is a self-contained software package that provides operating system services in a Natural environment. When installed on computers that are linked up in an Entire Net-Work, the Entire System Server supports distributed computing environments that can encompass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

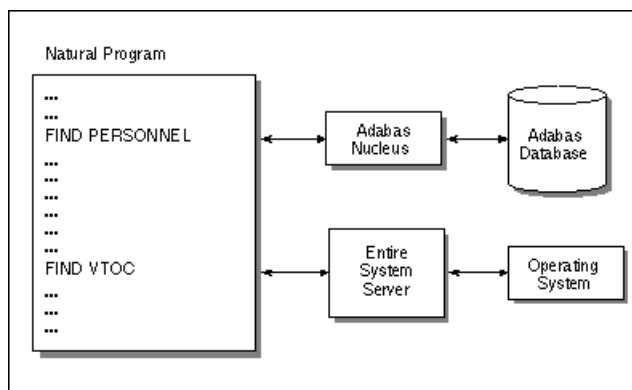
```
FIND VTOC WITH VOLSER='VOL001'  
          AND NODE=148  
  SORT BY DSNAME  
  DISPLAY DSNAME DSORG LRECL BLKSIZE PERCENT-USED  
LOOP  
END
```

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

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The Entire System Server is fully integrated into the Entire technology, Software AG'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 AG'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

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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 in heterogeneous environments running operating systems such as z/OS, z/VSE, BS2000. 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-SPPOOL**

---

## 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](#).



**Note:** Programs whose names start with **M** are taken from an z/OS environment, those beginning with **D** from a z/VSE environment, and those beginning with **B** from BS2000.

### 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 MRSP00L:

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 -----

```

## Spool Management: JOB-SWITCHES

Program BSW allows the user to specify certain items in job switch handling:

```
* BS2000 Job-switches maintenance
*
DEFINE DATA GLOBAL USING TUTO
      LOCAL USING BSW----L
      LOCAL
01  #DISPLAY      (32)
    02  MARK              (A1)
    02  SWITCH          (N2)
    02  REDEFINE SWITCH
        03 SWITCH-A      (A2)
    02  STATUS          (A3)
*
01  #OPERATION      (A6)
01  #LIST-OF-SWITCHES (A64)
01  #SWITCH-TYPE    (A7)
01  #FUNCTION        (A8)
01  #USERID         (A8)
*
01  #I              (P2)
END-DEFINE
ASSIGN #USERID = *INIT-USER
FOR #I = 1 TO 32
    COMPUTE SWITCH (#I) = #I - 1
END-FOR
*
REPEAT
    PERFORM SCREEN-IO
    FIND JOB-SWITCHES WITH NODE          = ##NODE
                                AND OPTION      = #OPERATION
                                AND SWITCH-NUMBERS = #LIST-OF-SWITCHES
                                AND SWITCH-TYPE    = #SWITCH-TYPE
                                AND FUNCTION      = #FUNCTION
                                AND USERID       = #USERID
        IF ERROR-CODE NE 0 OR SYSTEM-CODE NE 0
            INCLUDE BERR---C
        END-IF
    END-FIND
END-REPEAT
*
* ----- SCREEN-IO -----
*
DEFINE SUBROUTINE SCREEN-IO
IF ##MSG-NR = 0
    FOR #I = 1 TO 32
        DECIDE ON FIRST JOB-SWITCHES.SW-VALUES (#I)
            VALUE 'Y' ASSIGN #DISPLAY.STATUS (#I) = 'on'
            VALUE 'N' ASSIGN #DISPLAY.STATUS (#I) = 'off'
```

```

        VALUE ' ' RESET #DISPLAY.STATUS (#I)
        NONE      ASSIGN #DISPLAY.STATUS (#I) = '???'
    END-DECIDE
END-FOR
END-IF
INPUT WITH TEXT *##MSG-NR,
                ##MSG-TXT1,
                ##MSG-TXT2
    USING MAP 'BSW---&'
RESET ##MSG #LIST-OF-SWITCHES
FOR #I = 1 TO 32
    IF MARK (#I) = 'X'
        COMPRESS #LIST-OF-SWITCHES SWITCH-A (#I) INTO #LIST-OF-SWITCHES
            LEAVING NO SPACE
    END-IF
    RESET MARK (#I)
END-FOR
END-SUBROUTINE
END

```

### Output from the program BSW:

```

BS2000 Job switches
Function ..... READ____ (READ/WRITE/ATTRIB)
Operation ..... _____ (INVERT/ON/OFF)
Switch-Type ..... USER____ (USER/PROCESS)
BS2000-UserID ..... NPR____

```

Switch Status		Switch Status		Switch Status		Switch Status	
—	0 off	—	1 off	—	2 off	—	3 on
—	4 off	—	5 off	—	6 off	—	7 off
—	8 off	—	9 off	—	10 off	—	11 off
—	12 off	—	13 off	—	14 off	—	15 off
—	16 off	—	17 off	—	18 off	—	19 off
—	20 off	—	21 off	—	22 off	—	23 off
—	24 off	—	25 off	—	26 off	—	27 off
—	28 off	—	29 off	—	30 off	—	31 off

Please mark specific Switch(es) with 'X'

Enter-PF1--PF2--PF3--PF4--PF5--PF6--PF7--PF8--PF9--PF10--PF11--PF12--Exit

## Disk and Catalog Management: VTOC

Program DVTOC lists catalog entries for a specific volume:

```
* List VTOC of a specific volume
*
DEFINE DATA
  GLOBAL USING TUTO
  LOCAL  USING DVTOCL
END-DEFINE
*
ASSIGN VTOC.EXTENT-TYPE = '*'
*
INPUT (AD=MIT)
  ##TITLE (AD=OI IP=OFF)
  // 'List Vtoc of...:' VTOC.VOLSER
  / 'Extent type...:' VTOC.EXTENT-TYPE 3X '(* /USED /FREE)'
*
IF NOT VTOC.EXTENT-TYPE = 'USED' OR = 'FREE' OR = '*'
  REINPUT *1027 MARK *VTOC.EXTENT-TYPE
END-IF
*
WRITE TITLE ##TITLE (AD=I) /
           'Vtoc.....' (I) VTOC.VOLSER (AD=I) /
*
FIND VTOC WITH VOLSER      = VTOC.VOLSER
           AND  EXTENT-TYPE = VTOC.EXTENT-TYPE
           AND  NODE       = ##NODE
*
  IF ERROR-CODE > 0
    REINPUT ERROR-TEXT
  END-IF
*
END-ALL
SORT BY DSNAME USING TOTAL-TRACKS-ALLOCATED DSORG EXTENTS CREATION-DATE
*
  DISPLAY 'Name'      DSNAME (AL=30 IS=ON)
          'Tracks'    TOTAL-TRACKS-ALLOCATED
          'Dsorg'     DSORG
          'Extent'    EXTENTS (EM=H(12))
          'Created'   CREATION-DATE
END-SORT
*
END
```

Output from the program DVTOC for the volume SYSWK1:

MORE				
List VTOC of a specific volume				
Vtoc..... SYSWK1				
Name	Tracks	Dsorg	Extent	Created
-----				
** VTOC EXTENT **	15	UN	013D00000013D000E00010000	*****
CICS.SYSTEM.LOG.A.TFS	45	SD	01BF0000001C1000E00030000	29/06/90
CICS.SYSTEM.LOG.B.TFS	45	SD	01C20000001C4000E00030000	29/06/90
COM441.VSE.HISTORY	30	UN	0001000000002000E00020000	20/03/91
DOS.LABEL.FILE.FF0000203081.AR	45	UN	024A00000024C000E00030000	16/06/89
ICCF.LIBRARY	1785	DA	013E0000001B4000E00770000	04/12/87
INFO.ANALYSIS.DUMP.MGNT.FILE	10	SD	0248000000248000900000000A	05/06/90
INFO.ANALYSIS.EXT.RTNS.FILE	5	SD	02480000A0248000E000000005	04/12/87
RMADA.DB001.DATAR1	855	DA	000300000003B000E00390000	20/10/89
VSE.DUMP.LIBRARY	600	SD	00D4000000FB000E00280000	04/12/87
VSE.HARDCOPY.FILE	30	UN	023E00000023F000E00020000	04/12/87
VSE.HARDCOPY.FILE.JW	30	UN	024D00000024E000E00020000	15/08/89
VSE.HARDCOPY.FILE.SHR2	30	UN	01B50000001B6000E00020000	04/11/88
VSE.HARDCOPY.FILE.TFS	30	UN	01BA0000001BB000E00020000	09/11/88
VSE.POWER.ACCOUNT.FILE	60	DA	023900000023C000E00040000	11/11/88
VSE.POWER.DATA.FILE	1740	DA	01C5000000238000E00740000	18/11/88
VSE.RECORDER.FILE	45	UN	0240000000242000E00030000	04/12/87



# 5

## Online Tutorial

---

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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 ..... 40
- View Summary ..... 45

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

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

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
Opsys	z/OS, z/VSE, BS2000
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).  BS2000: corresponds to BS2000 command <code>/sta p</code> : retrieve tasks of Type 2 or 3.

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	

Item	Meaning
	search criteria available for the FIND statement (see <a href="#">Getting Started</a> ) where this is appropriate.
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 common to all operating systems for the view COPY-FILE:

Dictionary Field Name	F/L	Mu	DE	Remarks
Common Fields for all Operating Systems:				
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	Operating System
ERROR-CODE	(N3)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
ERROR-TEXT	(A58)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
NODE	(N3)	z/OS, z/VSE, BS2000

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	Operating System
NODE - NAME	(A16)	z/OS, z/VSE, BS2000

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	Operating System
SYSTEM-CODE	(B2)	BS2000

Original system error code.

Field Name	Type/Length	Operating System
SYSTEM-MESSAGE-CODE	(A10)	BS2000, z/OS, z/VSE

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 ADA $nnn$ , where  $nnn$  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	z/OS	z/VSE	BS2000
0	Request completed successfully	X	X	X
507	Too many parallel ESY requests.	X	X	X
508	Adabas response code xxx returned from ESY.	X	X	X
510	Logon required.	X	X	X
520	No core available (ASIZE).	X	X	X
521	NATPNI/NATPNIP unresolved.	X	X	X
530	Access denied by Security Facility.			X*
774	No core available.	X	X	X
776	Request was cancelled.	X	X	X
777	Request has abended.	X	X	X
999	Entire System Server node <i>nnn</i> not active.	X	X	X

\*



**Note:** In BS2000, if error code 799 (Entire System Server internal error) is returned, check the field `SYSTEM-MESSAGE-CODE` for additional information.

## 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	Supported Operating Systems	Description	File No.
ARCHIVE	BS2000	Run ARCHIVE utility.	211
CATALOG	z/OS, z/VSE, BS2000	List catalog information.	8
CATALOG-UPDATE	z/OS, BS2000	Perform catalog maintenance. Under BS2000: modify file attributes.	10
COPY-FILE	z/OS, z/VSE, BS2000	Copy files. Under z/OS and z/VSE, copying can be performed from node to node.	37
FILE-ALLOCATE	z/OS, z/VSE, BS2000	Allocate dataset to disk.	9
FILE-ATTRIBUTES	z/OS, z/VSE, BS2000	Display attributes of a dataset.	1
FILE-MAINTENANCE	z/OS, BS2000	Compress dataset or release unused space.	18
IDCAMS	z/OS	Run IDCAMS utility.	14
IEBCOPY	z/OS	Run IEBCOPY utility.	17
LIB-DIRECTORY	z/OS, z/VSE, BS2000	Read directory entries.	3
LIB-UPDATE	z/OS, z/VSE, BS2000	Perform operations on directory.	5

View Name	Supported Operating Systems	Description	File No.
LOAD-MODULE	z/OS	Read information on load module.	44
READ-FILE	z/OS, z/VSE, BS2000	Read records from a dataset.	2
READ-UNIX-FILE	z/OS	This view makes it possible to read data from files in the z/OS UNIX file system.	96
UNIT-ATTRIBUTES	z/OS, z/VSE	Read information on I/O units.	6
UNIX-DIRECTORY	z/OS	This view makes it possible to display directory information related to a z/OS UNIX file system.	97
VTOC	z/OS, z/VSE, BS2000	Read VTOC entries for a volume.	4
VTOC-UPDATE	z/OS, z/VSE, BS2000	Maintain VTOC entries.  Under BS2000: erase or rename file.	7
WRITE-FILE	z/OS, z/VSE, BS2000	Write records to a dataset.	204
WRITE-UNIX-FILE	z/OS	This view makes it possible to write data to files in the z/OS UNIX file system.	215

## Spool / Job Management

View Name	Supported Operating Systems	Description	File No.
ACTIVE-JOBS	z/OS, z/VSE, BS2000	Read information on active jobs.	29
ALLOCATIONS	z/OS	Read allocations for a job.	22
ENTER-PROCEDURE	BS2000	Enter procedure	217
JOB-SWITCHES	BS2000	Perform operations on user and process switches.	81
JOB-VARIABLES	BS2000	Perform operations on job variables.	82
READ-SPOOL	z/OS, z/VSE	Read spool records for a job.	12
SPOOL-FILES	z/OS, BS2000	Read and maintain spool files for a given job.	36
SPOOL-QUEUE	z/OS, z/VSE, BS2000	Read entire spool queue.  Under BS2000: Read all jobs in any system queue.	11
SPOOL-UPDATE	z/OS, z/VSE	Change status of job.	13
SUBMIT	z/OS, z/VSE, BS2000	Submit job.	200
TASK-INFO	BS2000	Read information for a task.	113
WRITE-SPOOL	z/OS, z/VSE, BS2000	Write records to spool.  Under BS2000: Print records or dataset.	203

## System Maintenance

View Name	Supported Operating Systems	Description	File No.
ACCOUNTING	z/OS	Read accounting information.	34
ADDRESS-SPACE	z/OS	Read address space information.	21
CONSOLE	z/OS, z/VSE, BS2000	Perform operations on operator console.	35
CONSOLE-LOG	z/OS, z/VSE	Read console log.	25
DEVICE-NAMES	z/OS	Read generic device names.	30
LIB-ZAP	z/OS	Run superzap utility (AMASPZAP).	16
LOADED-MODULES	z/OS	Read modules loaded by a job.	23
MAIN-STORAGE	z/OS, z/VSE, BS2000	z/OS:	Read main storage content for a job.
		z/VSE :	Read storage of the ADDRESS-SPACE in which the Entire System Server partition is defined.
		BS2000:	Read content of common memory pool.
NET-OPER	z/OS, z/VSE	Execute VTAM operator commands and display results.	15
SYSTEM-INFO	z/OS, z/VSE, BS2000	Read system information.	26
TCB	z/OS	Read task information for a job.	24
USER-ATTRIBUTES	BS2000	Read user information.	86

## Miscellaneous

View Name	Supported Operating Systems	Description	File No.
AUTHORIZED-LIBRARIES	z/OS	Display a list of APF authorized data sets in z/OS.	50
COMMON-DATA	z/OS, z/VSE, BS2000	Perform operations on shared main storage data.	33
CHECK-SECURITY	z/OS	Query external security system as to whether user is allowed to access resource.	45
EVENTING	z/OS, z/VSE, BS2000	Perform program-to-program communication.	40
HELP-INFO	BS2000	Display help text for an error message.	84
ITC	BS2000	Execute INTERTASK COMMUNICATION macros.	80
NATPROC-LOGON	z/OS, z/VSE, BS2000	Perform logon/logoff to Entire System Server.	190

View Name	Supported Operating Systems	Description	File No.
NATPROC-USERS	z/OS, z/VSE, BS2000	Read Entire System Server users currently active and optionally cancel users.	191
PRINT-DOCUMENT	BS2000	Print document.	213
RECEIVE-EMAIL	z/OS	This view provides the support for receiving e-mails using IMAP protocol	70
RESOURCE-CONTROL	z/OS	Manage resources using ENQ/DEQ.	32
SEND-EMAIL	z/OS, z/VSE, BS2000	This view provides the support for sending electronic mails.	212
SEND-MESSAGE	z/OS, z/VSE, BS2000	Send message to console and/or Com-plete, TSO or TIAM user.	19
SYSTEM-COMMAND	z/OS	Execute TSO commands.	46

# 7 ACCOUNTING

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<b>File</b>	34
<b>Op-Sys</b>	z/OS
<b>Statement</b>	FIND
<b>Task</b>	Read from SMF records.

## Common Fields for all Operating Systems

---

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

## Field Descriptions

Field Name	Type/Length	Operating System
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	Operating System
DATE	(N5)	

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

Field Name	Type/Length	Operating System
DATX	(D)	

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

Field Name	Type/Length	Operating System
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	Operating System
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	Operating System
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	Operating System
JOB - NAME	(A8)	

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

Field Name	Type/Length	Operating System
RBA	(N9)	

Relative byte address of the record.

Field Name	Type/Length	Operating System
RECORD	(A253)	

The SMF record / segment.

Field Name	Type/Length	Operating System
RECORD - LENGTH	(N5)	

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

Field Name	Type/Length	Operating System
RECORD - TYPE	(N3)	

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

Field Name	Type/Length	Operating System
SEGMENT - NUMBER	(N5)	

Segment number within the record.

Field Name	Type/Length	Operating System
SEGMENT - LENGTH	(B2)	

Length of the segment.

Field Name	Type/Length	Operating System
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	Operating System
SUB-TYPE	(N3)	

SMF subtype.

Field Name	Type/Length	Operating System
SYSTEM-ID	(A4)	

System ID, taken from the SMF record prefix.

Field Name	Type/Length	Operating System
TIME	(N6)	

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

Field Name	Type/Length	Operating System
TIMX	(T)	

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

Field Name	Type/Length	Operating System
TOTAL-BLOCKS	(N7)	

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

Field Name	Type/Length	Operating System
USED-BLOCKS	(N7)	

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

Field Name	Type/Length	Operating System
VOLSER	(A6)	

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

# 8

## ACTIVE-JOBS

---

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<b>File</b>	29
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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.  Under BS2000: corresponds to BS2000 command /sta p: retrieve tasks of Type 2 or 3.

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS and z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
REGION-ALLOCATED-BELOW	N7		D	
REGION-LIMIT-BELOW	N7		D	
REGION-ALLOCATED-ABOVE	N7		D	
REGION-LIMIT-ABOVE	N7		D	

## Additional Fields Supported for z/OS s

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			
SERVICE-CLASS	A8			
SERVICE-CLASS-PERIOD	N3			
SIO-CUNT	N11		D	
STEP-NAME	A8		D	
TCB	B4		D	
WORKLOAD	A8			

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
ADDRESS	B4			
CLASSES	A6		D	
PARTITION	A2		D	
PROC-NAME	A8		D	
REGION	N5		D	
REPLY-ID	A3		D	
SIO-COUNT	N11		D	
STEP-NAME	A8		D	
VSIZE	N5		D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ACCOUNT - NUMBER	A8			
CPU - MAX	N7.2			
HOLD	A3			
SYSTEM - CODE	B2			
TYPE - NUMBER	N1			
USER	A8			

## Relevant Error Codes

---

Code	Text	z/OS	z/Vse	BS2000
699	Not enough main storage available.			X
728	You are not allowed to see this job.			X
750	Invalid operand within operand list.			X
751	Not enough memory to execute the function.			X
799	Entire System Serer internal error.			X
830	z/OS: JES interface is not active. z/VSE: POWER interface not active.	X	X	
831	Error during queue initialization	X	X	
988	Invalid task type detected.			X

## Field Descriptions

---

Field Name	Format/Length	Operating System
ACCOUNT - NUMBER	(A8)	BS2000

Account number of the job.

Field Name	Format/Length	Operating System
ADDRESS	(B4)	z/OS, z/VSE

ASCB address.

Field Name	Format/Length	Operating System
ASID	(N4)	z/OS

Address space identifier.

Field Name	Format/Length	Operating System	
CLASSES	(A6)	z/OS	Relevant when TYPE=JOBS: batch initiator classes
		z/VSE	CLASSES assigned to the partition.

Field Name	Format/Length	Operating System
CPU-USED	(N7.2)	z/OS, z/VSE, BS2000

The amount of CPU time consumed by the job/address space. Format: *SSSSS.HH*.

Field Name	Format/Length	Operating System
CPU-MAX	(N7.2)	BS2000

The CPU time limit for the job.

Field Name	Format/Length	Operating System
DISPATCHABLE	(A3)	z/OS

Dispatchability of address space. Possible values:

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

Field Name	Format/Length	Operating System
DISPATCHING-PRIORITY	(B1)	z/OS, z/VSE, BS2000

Dispatching priority given by the operating system. For BS2000, the run priority of the task.

Field Name	Format/Length	Operating System
ECPU-USED	(N7.2)	z/OS

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

Field Name	Format/Length	Operating System
HOLD	(A3)	BS2000

Indicates if a job is in HOLD status. Possible values:

- NO
- YES

Field Name	Format/Length	Operating System
JES-INIT-ID	(A4)	z/OS

Relevant when TYPE=JOB: JES batch initiator identifier.

Field Name	Format/Length	Operating System
JOB-ID	(A8)	z/OS, z/VSE, BS2000

Job number in alphanumeric format. Must be used for BS2000 V10 with alphanumeric TSNs. In case of numeric job numbers, the job number will also be returned in field JOB-NUMBER.

Field Name	Format/Length	Operating System
JOB-NAME	(A8)	z/OS, z/VSE, BS2000

Name of the job. In z/OS, z/VSE, this is taken from the job card.

Field Name	Format/Length	Operating System
JOB-NUMBER	(N7)	OS390 z/VSE, BS2000

Column Heading	Meaning
z/OS	JES job identifier
z/VSE	POWER job identifier
BS2000	TSN (task sequence number), if numeric.  This field will contain zero in case of alphanumeric TSN.



Field Name	Format/Length	Operating System
PARTITION	(A2)	z/VSE

Partition identifier.

Field Name	Format/Length	Operating System
PROC - NAME	(A8)	z/OS, z/VSE

Name of the procedure currently being executed.

Field Name	Format/Length	Operating System
QUIESCE	(A3)	z/OS

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

Field Name	Format/Length	Operating System
REGION	(N7)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
REGION-ALLOCATED-BELOW	(N7)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
REGION-LIMIT-BELOW	(N7)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
REGION-ALLOCATED-ABOVE	(N7)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
REGION-LIMIT-ABOVE	(N7)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
REPLY-ID	(A3)	z/VSE

Field Name	Format/Length	Operating System
RESOURCE-GROUP	(A8)	z/OS

Resource Group Name .

Field Name	Format/Length	Operating System
SERVER	(A8)	z/OS

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

Field Name	Format/Length	Operating System
SERVICE-CLASS	(A8)	z/OS

Service class name .

Field Name	Format/Length	Operating System
SERVICE-CLASS-PERIOD	(N3)	z/OS

Service class period .

Field Name	Format/Length	Operating System
SIO-COUNT	(N11)	z/OS, z/VSE

Number of I/O operations performed so far.

Field Name	Format/Length	Operating System
STATUS	(A8)	z/OS, z/VSE, BS2000

Status of the address space. In BS2000, this is the same as field TYPE.

**Possible values for z/OS:**

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.

Possible values for z/VSE:

Value	Explanation
ACTIVE	Partition has active job.
UNBATCH	Partition has no job.
STOPPED	Partition will not accept new jobs.

Field Name	Format/Length	Operating System
STEP - NAME	(A8)	z/OS, z/VSE

Name of the step currently being executed.

Field Name	Format/Length	Operating System
TCB	(B4)	z/OS

TCB address of first ready task for this address space.

Field Name	Format/Length	Operating System
TYPE	(A6)	z/OS, z/VSE, BS2000

Type of job. Possible values:

Option	Job Type	Explanation
Z/OS	JOB INI STC TSU	Batch job JES initiator started task TSO user
BS2000	BATCH DIALOG TP	Batch job dialog task batch job with TP privilege
Z/VSE	JOB	Batch job

Field Name	Format/Length	Operating System
TYPE - NUMBER	(N1)	BS2000

Numeric job type identifier as used in BS2000, for example, 2 for batch jobs, 3 for dialog tasks.

Field Name	Format/Length	Operating System
USER	(A8)	BS2000

User ID of job.

Field Name	Format/Length	Operating System
VSIZE	(N5)	Z/VSE

Partition size.

Field Name	Format/Length	Operating System
WORKLOAD	(A8)	z/OS

Workload name .

## Examples

---

The following example applies to all operating systems:

```
...  
  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 for z/OS:

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
...				

**Result for BS2000:**

JOB-NAME	JOB-ID	TYPE	CPU	STATUS
...				
DB01	1UFN	BATCH	179.51	BATCH
ASF	1URL	DIALOG	12.78	DIALOG
...				



# 9 ADDRESS-SPACE

---

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<b>File</b>	21
<b>Op-Sys</b>	z/OS
<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.

## Common Fields for all Operating Systems

---

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

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	Operating System
ADDRESS	(B4)	z/OS

Space control block address.

Field Name	Format/Length	Operating System
ASID	(N4)	z/OS

Address space identifier.

Field Name	Format/Length	Operating System
CPU	(N7.2)	z/OS

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

Field Name	Format/Length	Operating System
DISP	(A3)	z/OS

Dispatchability of address space. Possible values:

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

Field Name	Format/Length	Operating System
JOB - NAME	(A8)	z/OS

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

Field Name	Format/Length	Operating System
REGION	(N5)	z/OS

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

Field Name	Format/Length	Operating System
STATUS	(A8)	z/OS

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	Operating System
TCB	(B4)	z/OS

TCB address of first ready task for this address space.

Field Name	Format/Length	Operating System
TYPE	(A3)	z/OS

Type of job. Possible values:

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

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## ALLOCATIONS

---

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<b>File</b>	22
<b>Op-Sys</b>	z/OS
<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.

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
PATH - NAME	A253		D	

## Relevant Error Codes

Code	Text	z/OS
805	Invalid TCB address.	X

## Field Descriptions

Field Name	Format/Length	Operating System
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	Operating System
BLKSIZE	(N5)	

Field Name	Format/Length	Operating System
CLASS	(A8)	

Dataset classification. Possible options:

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

Field Name	Format/Length	Operating System
DDNAME	(A8)	

Data definition name.

Field Name	Format/Length	Operating System
DSNAME	(A54)	

Dataset name for DDNAME.

Field Name	Format/Length	Operating System
DSORG	(A4)	

If the dataset is open, organization of dataset.

Field Name	Format/Length	Operating System
IO-COUNT	(N11)	

Number of I/O operations performed so far.

Field Name	Format/Length	Operating System
JOB - NAME	(A8)	

Name of job.

Field Name	Format/Length	Operating System
LRECL	(N5)	

Field Name	Format/Length	Operating System
MEMBER	(A10)	

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

Field Name	Format/Length	Operating System
PATH - NAME	(A253)	

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

Field Name	Format/Length	Operating System
PROC - NAME	(A8)	

Current procedure name.

Field Name	Format/Length	Operating System
RECFM	(A5)	

Field Name	Format/Length	Operating System
STEP - NAME	(A8)	

Current step name.

Field Name	Format/Length	Operating System
TCB - ADDRESS	(B4)	

TCB address of the requested job.

## ALLOCATIONS

---

Field Name	Format/Length	Operating System
UNIT	(A3)	

Unit on which DDNAME is allocated.

Field Name	Format/Length	Operating System
VOLSER	(A6)	

Volume on which DDNAME is allocated.



# 11

## ARCHIVE

---

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<b>File</b>	211
<b>Op-Sys</b>	BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	Run ARCHIVE utility.



**Note:** Due to performance considerations, this view should be used in single-user mode only.

## Common Fields for all Operating Systems

---

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			
SYSTEM-CODE	B2			
FUNCTION	A8		D	
NOW	A5		D	
DIRECTORY	A54		D	
NEW-DIRECTORY	A3		D	
CAT-ONLY	A3		D	
ERASE	A7		D	
SHARE	A3		D	
LIST	A10		D	
PASSWORD-ARRAY	A8	M/10	D	
SAVE-PASSWORD	A8		D	
DRIVES	N2		D	
DEVICE	A8		D	
SAVE-DIRECTORY	A3		D	
DAYS-UNUSED	N5		D	
SAVE-ID	A15		D	
CONTINUE-VOLSER-ARRAY	A6	M/5	D	
VOLSER-ARRAY	A6	M/10	D	
TAPES	A8		D	
RETENTION-PERIOD	N5		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
CHANGED	A12		D	
BACKUP-TYPE	A1		D	
FILE-ARRAY	A61	M/20	D	
JOB-VARIABLE-ARRAY	A61	M/20	D	
EXCEPT-FILE-ARRAY	A61	M/20	D	
EXCEPT-JOB-VARIABLE-ARRAY	A61	M/20	D	
CONTINUE	A13		D	
REPLACE	A4		D	
SPACE	A5		D	
FROM-OPTION	A24		D	
SV-OPTION	A100		D	
INQUIRE-POOL-OPTION	A14		D	
POOL-OPERATION	A6		D	
FORCE-PURGE	A3		D	
STATUS-TYPE	A6		D	
STATUS-USER	A8		D	
TAPE-BLOCK-SIZE	N2		D	
COMPRESS	A3		D	
SAVE-ACL	A3		D	
CONVERSION	A4		D	

The following fields correspond to parameters of the ARCHIVE command PARAM. They can be set only with the first call, and will be ignored for all subsequent calls. Possible values for all fields are YES or NO.

Dictionary Field Name	F/L	Mu	DE	Remarks
PAR-CNS	A3		D	Default is YES.
PAR-RESTART	A3		D	Default is YES.
PAR-UNLOAD	A3		D	Default is NO.
PAR-OPERATOR	A3		D	Default is NO.
PAR-WRCHK	A3		D	Default is NO.
PAR-SNR	A3		D	Default is YES.
PAR-DESTROY	A3		D	Default is NO.
PAR-CATID	A3		D	Default is NO.
PAR-STREAM	A3		D	Default is NO.
PAR-OLS	A3		D	Default is NO.

## Relevant Error Codes

---

Code	Text	BS2000
530	Access denied by Security Facility.	X
531	Password missing or incorrect.	X
565	Syntax error in dataset name.	X
658	Dataset is not cataloged.	X
722	Requested dataset not found.	X
733	User ID does not exist.	X
734	ARCHIVE run with errors.	X
750	Invalid operand within operand list.	X
756	Job variable name missing or invalid.	X
798	Task was not started under TSOS.	X
799	Entire System Server internal error.	X
853	Retention cycle unexpired / NEWNAME exists.	X
881	Error occurred while opening file.	X
984	Server is not authorized to access.	X
992	Requested job variable not found.	X

## Field Descriptions

---

For detailed information, refer to documentation of SNI's product ARCHIVE. Some field descriptions simply refer to the corresponding ARCHIVE command to avoid duplicate explanations.

Field Name	Format/Length	Operating System
FUNCTION	(A8)	

The possible values for this field relate to the corresponding ARCHIVE command to be executed, unless stated otherwise:

Value	Explanation
FILES	
FILESC	Continuation of FILES for more file definitions than are possible in one call with FILES function.
JOBVAR	
JOBVARC	Continuation of JOBVAR for more job variables than are possible in one call with JOBVAR function.
DELETE	
EXPORT	
IMPORT	
INQUIRE	
LIST	
POOL	
PROCESS	
PURGE	
RESTORE	
SAVE	
STATUS	
CLOSE	This must be the last call and starts the ARCHIVE execution.

Field Name	Format/Length	Operating System
BACKUP-TYPE	(A1)	

Relevant for function SAVE. Minimum backup level.

Field Name	Format/Length	Operating System
CAT-ONLY	(A3)	

Relevant for functions SAVE, EXPORT.

Option	Explanation
NO	Default. Files are saved including catalog entry.
YES	Only catalog entries are saved.

Field Name	Format/Length	Operating System
CHANGED	(A12)	

Relevant for function `SAVE`. Possible values:

Value	Explanation
YES	Default. Only changed files are saved.
YES , LARGE	Only changed LARGE files are saved.
YES , <i>n</i>	Same as YES , LARGE, where <i>n</i> is the minimum file size in PAM pages.
NO	Save all objects.

Field Name	Format/Length	Operating System
COMPRESS	(A3)	

Relevant for functions `SAVE`, `EXPORT`. Specifies whether a compress is to be done with save. Possible values:

Value	Explanation
NO	Default. Compress is not performed.
YES	Compress is performed.

Field Name	Format/Length	Operating System
CONTINUE	(A13)	

Relevant for functions `SAVE`, `EXPORT`. Continuation of a previous `SAVE/EXPORT` run. Possible values:

Value	Explanation
SVID	SAVE - ID must be given.
SVID , VSN - LIST	SAVE - ID and CONTINUE - VOLSER - ARRAY must be given.
VSN - LIST	CONTINUE - VOLSER - ARRAY must be given.

Field Name	Format/Length	Operating System
CONTINUE-VOLSER-ARRAY	(A6)	

Relevant for functions SAVE, EXPORT. Maximum of 5 volumes if keyword VSN-LIST is specified in field CONTINUE.

Field Name	Format/Length	Operating System
CONVERSION	(A4)	

Relevant for functions RESTORE, IMPORT. PAM key conversion required to import or restore files to non-key disks. Possible values:

Value	Explanation
NO	Default.
CONV	
STD	

Field Name	Format/Length	Operating System
DAYS-UNUSED	(N5)	

Relevant for functions SAVE, EXPORT. Number of days the object to be saved must have been unused.

Field Name	Format/Length	Operating System
DEVICE	(A8)	

Relevant for functions SAVE, EXPORT, RESTORE, IMPORT, POOL, LIST. Device type (for example, T9G).

Field Name	Format/Length	Operating System
DIRECTORY	(A54)	

Relevant for functions SAVE, EXPORT, RESTORE, IMPORT, POOL, LIST, PURGE, INQUIRE. Name of directory file. Default is NONE.

Field Name	Format/Length	Operating System
DRIVES	(N2)	

Relevant for functions SAVE, EXPORT, RESTORE, IMPORT, LIST. Number of drives to be used in parallel.

Field Name	Format/Length	Operating System
ERASE	(A7)	

Relevant for functions `SAVE`, `EXPORT`. Specifies erasing of objects after `SAVE` or `EXPORT`. Possible values:

Value	Explanation
NO	Default. Objects are not erased.
ALL	Objects are erased regardless of access and retpd.
ALLP	For TSOS only: objects are erased regardless of access, retpd and passwords.
ALLCNS	Same as ALL, but also for CNS files.
ALLCNP	For TSOS only: same as ALLCNS, regardless of passwords.
YES	Objects are erased, if allowed by access, retpd and password definition.

Field Name	Format/Length	Operating System
EXCEPT-FILE-ARRAY	(A61)	

Relevant for functions `FILES`, `FILESC`. Maximum of 20 file expressions for `EXCEPT` option of `ARCHIVES FILES` command. Same syntax as for `FILE-ARRAY`.

Field Name	Format/Length	Operating System
EXCEPT-JOB-VARIABLE-ARRAY	(A61)	

Relevant for functions `JOBVAR`, `JOBVARC`. Maximum of 20 JV expressions for `EXCEPT` option of `ARCHIVES JOBVAR` command. Same syntax as for `JOB-VARIABLE-ARRAY`.

Field Name	Format/Length	Operating System
FILE-ARRAY	(A61)	

Relevant for functions `FILES`, `FILESC`, `INQUIRE`. Maximum of 20 file expressions, where a file expression can be a file name of a file name prefixed by `THRU=` or `RENAME=`.

Field Name	Format/Length	Operating System
FORCE-PURGE	(A3)	

Relevant for function `PURGE`. Specify to force purging of saved versions. Possible values:



Value	Explanation
NO	Default. Saved versions are not purged.
YES	Saved versions are purged.

Field Name	Format/Length	Operating System
FROM-OPTION	(A24)	

Relevant for functions RESTORE, IMPORT, LIST. Possible values:

- LATEST
- LATEST, STATE
- SVID
- SVID, STATE, *yymmdd.hhmmss*
- SVID, VSN-LIST
- VSN-LIST
- *yymmdd.hhmmss*
- *yymmdd.hhmmss*, STATE

If SVID is specified, the field SAVE-ID must be specified. If VSN-LIST is specified, the VOLSER-ARRAY field must be specified.

Field Name	Format/Length	Operating System
INQUIRE-POOL-OPTION	(A14)	

Relevant for function INQUIRE. Possible values:

- POOL
- POOL, AVAILABLE

Field Name	Format/Length	Operating System
JOB-VARIABLE-ARRAY	(A61)	

Relevant for functions JOBVAR, JOBVARC, INQUIRE. Maximum of 20 JV expressions, where a JV expression can be a JV name or a JV name prefixed by THRU= or RENAME=.

Field Name	Format/Length	Operating System
LIST	(A10)	

Relevant for functions SAVE, EXPORT, RESTORE, IMPORT, PURGE, LIST, INQUIRE. Destination for ARCHIVE report. Possible values:

- BOTH
- NONE
- SYSLST
- SYSOUT

Some functions allow the adding of ,ALL, see the ARCHIVE documentation.



**Note:** If ARCHIVE is called with the Entire System Server in multi-user mode, the destinations SYSLST and SYSOUT will be those of the Entire System Server task.

Field Name	Format/Length	Operating System
NEW-DIRECTORY	(A3)	

Relevant for functions SAVE, EXPORT, POOL.

Value	Explanation
NO	Default. DIRECTORY field specifies existing directory.
YES	DIRECTORY field specifies new directory.

Field Name	Format/Length	Operating System
NOW	(A3)	

Relevant for functions SAVE, EXPORT, RESTORE, IMPORT, POOL, PURGE, LIST. Possible values:

Value	Explanation
YES	Default. Start immediately after function CLOSE is specified.
NO	Put ARCHIVE command to file for later execution with function PROCESS (or cancel with DELETE).
<i>t</i>	Time in seconds: same as NO, where the time specified is an execution time limit for an ARCHIVE task started later.

Field Name	Format/Length	Operating System
PASSWORD-ARRAY	(A8)	

Relevant for functions `SAVE`, `EXPORT`, `RESTORE`, `IMPORT`, `POOL`, `PURGE`, `LIST`, `INQUIRE`. If files or job variables are password-protected, maximum of 10 passwords. Only the first password will be used with function `INQUIRE`.

Field Name	Format/Length	Operating System
POOL-OPERATION	(A6)	

Relevant for function `POOL`. Possible values:

- `ADD`
- `REMOVE`

Field Name	Format/Length	Operating System
REPLACE	(A4)	

Relevant for functions `RESTORE`, `IMPORT`. Possible values:

Value	Explanation
<code>NO</code>	Default. Objects are not replaced.
<code>ALL</code>	Objects are replaced regardless of access and <code>retpd</code> .
<code>ALLP</code>	For <code>TSOS</code> only: objects are replaced regardless of access, <code>retpd</code> and passwords.
<code>YES</code>	Objects are replaced, if allowed by access, <code>retpd</code> and password definition.

Field Name	Format/Length	Operating System
RETENTION-PERIOD	(N5)	

Relevant for functions `SAVE`, `EXPORT`. Retention period for save version in number of days.

Field Name	Format/Length	Operating System
SAVE-ACL	(A3)	

Relevant for function `SAVE`. Only for `SECOS/FACS`. Save ACL entries. Possible values:

Value	Explanation
NO	Default. ACL entries are not saved.
YES	ACL entries are saved.

Field Name	Format/Length	Operating System
SAVE - DIRECTORY	(A3)	

Relevant for functions SAVE, EXPORT. Possible values:

Value	Explanation
NO	Directory is not saved.
YES	Save directory also.

Field Name	Format/Length	Operating System
SAVE - ID	(A15)	

Relevant for functions SAVE, EXPORT, PROCESS, DELETE. ARCHIVE Save Identifier, in case the keyword SVID was specified in field FROM-OPTION or CONTINUE.

Field Name	Format/Length	Operating System
SAVE - PASSWORD	(A8)	

Relevant for functions SAVE, EXPORT, RESTORE, IMPORT. Password for the SAVE run.

Field Name	Format/Length	Operating System
SHARE	(A3)	

Relevant for functions SAVE, EXPORT. Possible values:

Value	Explanation
NO	Saved objects and volumes are not sharable.
YES	Saved objects and volumes are sharable.

Field Name	Format/Length	Operating System
SPACE	(A5)	

Relevant for functions RESTORE, IMPORT. Possible values:

Value	Explanation
REORG	Default.
KEEP	

Field Name	Format/Length	Operating System
STATUS-TYPE	(A6)	

Relevant for function STATUS. Type of ARCHIVE tasks for which status information is required.  
Possible values:

Value	Explanation
LATER	Default.
ACTIVE	

Field Name	Format/Length	Operating System
STATUS-USER	(A8)	

Relevant for function STATUS. Only for TSOS: user ID for which status information is required.

Field Name	Format/Length	Operating System
SV-OPTION	(A100)	

Relevant for functions INQUIRE and PURGE. For possible values, see the SV option of the corresponding ARCHIVE commands.

Field Name	Format/Length	Operating System
TAPE-BLOCK-SIZE	(N2)	

Relevant for functions SAVE, EXPORT. Block size in number of PAM pages. Maximum is 15.

Field Name	Format/Length	Operating System
TAPES	(A8)	

Relevant for functions SAVE, EXPORT. Possible values:

Value	Explanation
OPERATOR	Volumes are required from operator.
POOL	Volumes are taken from pool of directory.
VSN-LIST	Volumes are specified in field VOLSER-ARRAY.

Field Name	Format/Length	Operating System
VOLSER-ARRAY	(A6)	

Relevant for functions SAVE, EXPORT, POOL. A maximum of 10 volumes can be specified. Required also for functions RESTORE, IMPORT, UST when field FROM-OPTION=VSN-LIST.

## Example

The following ARCHIVE commands are created by the example program shown below:

PARAM UNLOAD=YES
FILES NAME=(MYFILE.1,MYFILE.2,MYFILE.SHARE.), NAME=(BADFILE,RENAME=NICEFILE)
EXPORT SHARE=YES,DEVICE=T-C1,LIST=BOTH, TAPES=(MYTAPE)

```

DEFINE DATA
    LOCAL USING ARCHIV-L
END-DEFINE
*
* --- build first part of FILES command and set PARAM options ---
*
PROCESS ARCHIVE
    USING NODE          = 148
        , FUNCTION      = 'FILES'
        , PAR-UNLOAD    = 'YES'
        , FILE-ARRAY    = 'MYFILE.1'      /* FIRST FILE
        , FILE-ARRAY    = 'MYFILE.2'      /* SECOND FILE
        , FILE-ARRAY    = 'MYFILE.SHARE.' /* ALL FILES STARTING *
            WITH THIS PREFIX
*
IF ERROR-CODE NE 0
    WRITE ERROR-TEXT
    ESCAPE ROUTINE
END-IF
*
* --- continue FILES command ---

```

```

*
PROCESS ARCHIVE
  USING NODE          = 148
    , FUNCTION        = 'FILESC'
    , FILE-ARRAY      = 'BADFILE'          /* rename this file
    , FILE-ARRAY      = 'RENAME=NICEFILE' /* .. with this name
*
IF ERROR-CODE NE 0
  WRITE ERROR-TEXT
  ESCAPE ROUTINE
END-IF
*
* --- build EXPORT command ----
*
PROCESS ARCHIVE
  USING NODE          = 148
    , FUNCTION        = 'EXPORT'
    , LIST            = 'BOTH'
    , SHARE           = 'YES'
    , DEVICE          = 'T-C1'
    , VOLSER-ARRAY    = 'MYTAPE'
*
IF ERROR-CODE NE 0
  WRITE ERROR-TEXT
  ESCAPE ROUTINE
END-IF
*
* --- ready to go ---
*
PROCESS ARCHIVE
  USING NODE          = 148
    , FUNCTION        = 'CLOSE'          /* execute ARCHIVE
*
IF ERROR-CODE NE 0
  WRITE ERROR-TEXT
  ESCAPE ROUTINE
END-IF
END

```





# 12

## AUTHORIZED-LIBRARIES

---

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<b>File</b>	50
<b>Op-Sys</b>	z/OS
<b>Statement</b>	FIND
<b>Task</b>	Display a list of APF authorized data sets in z/OS.

## Additional Fields Supported for z/OS

---

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*

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
DEVICE	B4			
FILE-SYSTEM	A3		D	
PREFIX	A3		D	
SERIES	A8		D	

## Relevant Error Codes

---

Code	Text	z/OS
782	CSVAPF LIST <retcode>< reason-code>	X

## Field Descriptions

Field Name	Format/Length	Operating System
DSNAME	(A44)	z/OS

Name of the data set or its prefix.

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

Field Name	Format/Length	Operating System
VOLSER	(A6)	z/OS

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*



# 13

## CATALOG

---

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<b>File</b>	8
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	FIND
<b>Task</b>	<p>This view displays the catalog information of a specified file.</p> <p>In BS2000, the information retrieved is the same as returned by the BS2000 system command /FSTAT or /SHOW-FILE-ATTRIBUTES.</p> <p>In z/VSE , if either VSAM-CATALOG or USER-CATALOG is specified, or OPTION='MASTER', information is returned from the appropriate VSAM catalog. Otherwise, information is returned only for files currently known to Entire System Server in its internal table - files in standard and partition standard/class labels, temporary labels defined before the // EXEC card, and files accessed during the current Entire System Server session.</p>

## Common Fields for all Operating Systems

---

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 in z/OS.
VOLSER	A6		D	
TYPE	A8		D	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
DEVICE	B4			
FILE-SYSTEM	A3		D	
PREFIX	A3		D	
SERIES	A8		D	

## Additional Fields Supported for z/OS, z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
CLASS	A4		D	
NUMBER-OF-VOLUMES	N3			Under z/VSE , valid only when information is being returned from VSAM catalogs.
OPTION	A8		D	
USER-CATALOG	A44		D	
VOLUME-SEQUENCE	N3			

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
CLASS	A4		D	
DEVICE-TYPE	A4		D	Valid only when information is being returned from VSAM catalogs.
FILE-NAME	A7		D	Valid only when information is being returned from Entire System Server's internal file table.
LABEL-AREA	A8			
LIBRARIAN	A3		D	
VSAM-CATALOG	A8		D	Valid as a descriptor only for retrieving information from VSAM catalogs, and valid as a returned item only when information is being returned from Entire System Server's internal file table.

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
FILE-SIZE	N10			
STATE	A6		D	Search criteria only.
SUPPORT-TYPE	A9		D	Search criteria only.
BACKUP-TYPE	A11		D	Search criteria only.
ACCESS-TYPE	A5		D	Search criteria only.
FCBTYPE	A11		D	Search criteria only.
PASSWORD-OPTION	A9		D	Search criteria only.
SHARE	A3		D	Search criteria only.

Dictionary Field Name	F/L	Mu	DE	Remarks
GEN	A3		D	Search criteria only.
BLOCK-CONTROL-OPTION	A21		D	Search criteria only.
CREATION-RANGE	A19		D	Further define range.
EXPIRATION-RANGE	A19		D	Further define range.
LAST-ACCESS-RANGE	A19		D	Further define range.
EXTENT-RANGE	A13		D	Further define range.
SIZE-RANGE	A19		D	Further define range.
FREE-SIZE-RANGE	A19		D	Further define range.

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.			X
562	Catalog entry not found.	X		
565	Syntax error in dataset name.			X
566	Syntax error in catalog name.	X		
567	Invalid OPTION, specify LONG or USERCAT	X		
604	No volumes specified.			X
699	Not enough main storage available.			X
701	DSNAME missing.			X
722	Requested dataset not found.			X
733	User ID does not exist.			X
750	Invalid operand within operand list.			X
786	Unable to obtain / release storage for CSI work area.	X		
787	CSI request failed, Module :1;, Reason :2;, RC :3:	X		
788	Unable to substitute :1;, RC :2:	X		
789	Unable to get UCB copy for :1;, RC :2:	X		
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
996	Volume not online.			X



## Field Descriptions

Field Name	Format/Length	Operating System
ACCESS-TYPE	(A5)	BS2000

List all files accessible by READ or WRITE. Possible options:

- R or READ
- W or WRITE

Field Name	Format/Length	Operating System
BACKUP-TYPE	(A11)	BS2000

Search criteria only, this field is returned unchanged. Files of the specified type(s) are listed. Possible types: A, B, C, D, E. Multiple types must be given as: A, B, C.

Field Name	Format/Length	Operating System
BLOCK-CONTROL-OPTION	(A21)	BS2000

Search criteria only, this field is returned unchanged. Retrieves files with specified control type. Possible values:

- DATA
- NO
- NONE
- PAMKEY

Multiple values must be separated by commas and enclosed in brackets, for example:  
(PAMKEY, DATA).

Field Name	Format/Length	Operating System
CLASS	(A4)	z/OS, z/VSE

Device class (for example, DASD).

Field Name	Format/Length	Operating System
CREATION-RANGE	(A19)	BS2000

Further defines ranges for catalog entries. Lists all files with a creation date as follows:

Creation Date	Explanation
( , YY-MM-DD)	Files created before the specified date.
( YY-MM-DD , )	Files created since the specified date.
( YY-MM-DD , YY-MM-DD)	Files created between the specified dates.
YY-MM-DD	Files created on the specified date.

Field Name	Format/Length	Operating System
DEVICE	(B4)	z/OS

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

Field Name	Format/Length	Operating System
DEVICE-TYPE	(A4)	z/VSE

The type of the device where the NONVSAM file resides.

Field Name	Format/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

Dataset name or dataset name prefix.

z/OS	<p>If the value specified is a prefix, information on all datasets with that prefix (including DSNAME itself) is retrieved (see the field PREFIX).</p> <p>As an extension to the search criteria described in <a href="#">Search Criteria with the FIND Statement</a> in Section <a href="#">Getting Started</a>, 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.</p> <p><b>Note:</b> Dataset names are returned in the order of their corresponding catalog records, i.e. not necessarily in ascending order.</p>
BS2000	<p>This field specifies the file name.</p> <p>An asterisk * can be used as wildcard as in the /FSTAT command.</p>

Field Name	Format/Length	Operating System
EXPIRATION-RANGE	(A19)	BS2000

Further defines ranges for catalog entries. List files with an expiration date as follows:

Expiration Date	Explanation
( , YY-MM-DD)	Files expired before specified date.
( YY-MM-DD , )	Files expired since specified date.
( YY-MM-DD , YY-MM-DD )	Files expired between the specified dates.
YY-MM-DD	Files expired on the specified date.

Field Name	Format/Length	Operating System
EXTENT-RANGE	(A13)	BS2000

Further defines ranges for catalog entries. List files with number of extents within a given range.

( , <i>n</i> )	Files with fewer extents than specified number.
( <i>n</i> , )	Files with more extents than specified number.
( <i>n</i> , <i>m</i> )	Files with extents between specified numbers.
<i>n</i>	Files with <i>n</i> extents.

Field Name	Format/Length	Operating System
FCBTYPE	(A11)	BS2000

Search criteria only, this field is returned unchanged. List all files with specified type(s). Possible options:

- B or BTAM
- I or ISAM
- N or NONE
- P or PAM
- S or SAM

Specification of multiple types is possible, for example, ( P , I ).

Field Name	Format/Length	Operating System
FILE-NAME	(A7)	z/VSE

File name as specified in the DLBL statement for the dataset.

Field Name	Format/Length	Operating System
FILE-SIZE	(N10)	BS2000

Number of PAM pages allocated by a file.

Field Name	Format/Length	Operating System
FREE-SIZE-RANGE	(A19)	BS2000

Further defines ranges for catalog entries. List files with a number of free PAM pages expressed as follows:

( , <i>n</i> )	Files with fewer free pages than specified number.
( <i>n</i> , )	Files with more free pages than specified number.
( <i>n</i> , <i>m</i> )	Files with free pages between specified numbers.
<i>n</i>	Files with <i>n</i> free pages.

Field Name	Format/Length	Operating System
FILE-SYSTEM	(A3)	z/OS

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	Operating System
GEN	(A3)	BS2000

Specify YES to list the files of a generation group.

Field Name	Format/Length	Operating System
LABEL - AREA	(A8)	z/VSE

Indicates the LABEL AREA where the LABEL is situated. Possible values:

Value	Explanation
PARSTD	Partition standard.
STD	Standard.
TEMP	Temporary.

Field Name	Format/Length	Operating System
LAST - ACCESS - RANGE	(A19)	BS2000

Further defines ranges for catalog entries. List files with last access date within a time range given as follows:

( , YY-MM-DD)	Files accessed before specified date.
( YY-MM-DD , )	Files accessed since specified date.
( YY-MM-DD , YY-MM-DD)	Files accessed between the specified dates.
YY-MM-DD	Files accessed on the specified date.

Field Name	Format/Length	Operating System
LIBRARIAN	(A3)	z/VSE

Possible options:

Option	Explanation
NO	If dataset is not a z/VSE LIBRARIAN file.
YES	If dataset is a z/VSE LIBRARIAN file.

Field Name	Format/Length	Operating System
NUMBER-OF-VOLUMES	(N3)	z/OS, z/VSE

Number of volumes of dataset.

Field Name	Format/Length	Operating System
OPTION	(A8)	z/OS, z/VSE

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 (z/OS only).
MASTER	Indicates that data is to be retrieved from the VSAM master catalog (z/VSE only).
USERCAT	Return names of all user catalogs in the USER-CATALOG field (z/OS only).

Field Name	Format/Length	Operating System
PASSWORD-OPTION	(A9)	BS2000

List the files with password options expressed as follows:

- E or EXPASS
- N or NONE
- R or RDPASS
- W or WRPASS

Multiple options can be specified, for example: (R,N).

Field Name	Format/Length	Operating System
PREFIX	(A3)	z/OS

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	Operating System
SERIES	(A8)	z/OS

Device series (for example, 3330-1).

Field Name	Format/Length	Operating System
SHARE	(A3)	BS2000

Possible options:

Option	Explanation
NO	List non-shareable files.
YES	List shareable files.

Field Name	Format/Length	Operating System
SIZE - RANGE	(A19)	BS2000

Further defines ranges for catalog entries. List files with size within a given range. Size means number of PAM pages:

( , <i>n</i> )	Files smaller than specified number.
( <i>n</i> , )	Files larger than specified number.
( <i>n</i> , <i>m</i> )	Files with size between specified numbers.
<i>n</i>	Files of size <i>n</i> .

Field Name	Format/Length	Operating System
STATE	(A6)	BS2000

Search criteria only, this field is returned unchanged. Specifies state of file. Possible options:

Option	Explanation
<i>blank</i>	List all files.
NOCL0S	List all open files.

Field Name	Format/Length	Operating System
SUPPORT - TYPE	(A9)	BS2000

Active search criteria. List all files that are on public or private disks or on tapes. Possible options:

Option	Explanation
PRV	Private.
PUB	Public.
TAP	Tapes.

These values can also be combined, for example: (PUB,PRV) for public and private.

The following values are returned: PUBLIC, PRDISC, MIGRAT or TAPE. MIGRAT indicates migrated files.

Field Name	Format/Length	Operating System
TYPE	(A8)	z/OS, z/VSE , BS2000

Dataset type. Possible values:

z/OS	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.
BS2000	FGG	File generation group.
z/VSE	DA	Direct-access dataset.
	ISAM	ISAM dataset.
	SAM	SAM dataset.
	VSAM	VSAM dataset.

Field Name	Format/Length	Operating System
USER-CATALOG	(A44)	z/OS, z/VSE

z/OS only: name of the user catalog in which the dataset is cataloged (see also OPTION field).

z/VSE only: name of the VSAM catalog from which data is to be retrieved. VSAM-CATALOG takes precedence over USER-CATALOG.



Field Name	Format/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE, BS2000

Volume serial number of dataset. In BS2000, this field supports search criteria. In z/VSE , when returning information from the internal file table, the field will be blank for VSAM files.

Field Name	Format/Length	Operating System
VOLUME-SEQUENCE	(N3)	z/OS, z/VSE

Volume sequence (tape datasets only).

Field Name	Format/Length	Operating System
VSAM-CATALOG	(A8)	z/VSE

For internal file table requests, the DLBL for the VSAM catalog for a VSAM file. It will be blank for a non-VSAM file.

For VSAM catalog retrieval requests, the DLBL for the VSAM catalog from which data is to be retrieved. VSAM-CATALOG takes precedence over USER-CATALOG.

## 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.

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## CATALOG-UPDATE

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<b>File</b>	10
<b>Op-Sys</b>	z/OS, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	Perform catalog maintenance functions.

## Common Fields for all Operating Systems

---

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.

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLUMES	A240		D	
DEVICE	A8		D	
FILE-SEQUENCE	N3		D	
FUNCTION	A8		D	Required.

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
SHARE	A3		D	
BACKUP-TYPE	A1		D	
ACCESS-TYPE	A5		D	
READ-PASSWORD	A8		D	
WRITE-PASSWORD	A8		D	
EXECUTION-PASSWORD	A8		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
AUDIT-TYPE	A4		D	
RETPD	N4		D	
ARCHIVE-OPTION	A1		D	
DESTROY	A3		D	
FGG-BASE	B2		D	
FGG-GENERATIONS	B2		D	
FGG-DISPOSITION	A8		D	
PASSWORD	A8		D	
NUM-OF-BACKUP-VERS	N3		D	

## Relevant Error Codes

Code	Text	z/OS	BS2000
530	Access denied by Security Facility.		X
531	Password missing or incorrect.		X
565	Syntax error in dataset name.		X
571	DSNAME operand missing.	X	
600	Unknown operation.	X	
602	Device is invalid.	X	
603	Index/Alias missing.	X	
604	No volumes specified.	X	
658	Dataset is not catalogued.	X	
701	DSNAME missing.		X
722	Requested dataset not found.		X
733	User ID does not exist.		X
750	Invalid operand within operand list.		X
798	Task was not started under TSOS.		X
799	Entire System Server internal error.		X

## Field Descriptions

---

Field Name	Format/Length	Operating System
ACCESS-TYPE	(A5)	BS2000

Specifies authorized access type. Possible options:

Option	Explanation
READ	Read-only access is authorized.
WRITE	Read and write access is authorized.

Field Name	Format/Length	Operating System
ARCHIVE-OPTION	(A1)	BS2000

Specifies the ARCHIVE options:

Option	Explanation
L	Long. This is the default. The whole file is saved.
S	Short. Only changed PAM blocks are saved.

Field Name	Format/Length	Operating System
AUDIT-TYPE	(A4)	BS2000

Fixes the level of control of file access. Possible values:

Value	Explanation
NONE	Default. No accesses are monitored.
ALL	All accesses are monitored.
FAIL	Unsuccessful accesses are monitored.
SUCC	Successful accesses are monitored.

Field Name	Format/Length	Operating System
BACKUP-TYPE	(A1)	BS2000

Specifies when a file is saved by ARCHIVE. Possible options:

Option	Explanation
A	Default. File is saved with every ARCHIVE run.
B	Saved with run for Level B, C and D.
C	Saved with runs for Level C and D.
D	Saved with runs for Level D.
E	Not automatically saved.

Field Name	Format/Length	Operating System
DESTROY	(A3)	BS2000

Possible options:

Option	Explanation
NO	Default. The file is not automatically destroyed when erased.
YES	Space used for file is written with X '00 ' when the file is erased.

Field Name	Format/Length	Operating System
DEVICE	(A8)	z/OS

Device code, for example, 3400-3. For BS2000, this only applies to file generation groups (see the STATE field).

Field Name	Format/Length	Operating System
DSNAME	(A54)	z/OS, BS2000

Fully qualified dataset name. BS2000: fully qualified file name.

Field Name	Format/Length	Operating System
EXECUTION-PASSWORD	(A8)	BS2000

EXECUTION password to be defined for the file. Use \*NONE to reset existing password. See also the PASSWORD field.

Field Name	Format/Length	Operating System
FGG-BASE	(B2)	BS2000

File generation groups only: base for relative access to files of FGG.

Field Name	Format/Length	Operating System
FGG-DISPOSITION	(A8)	BS2000

File generation groups only: describes what to do, if maximum number of generations is reached.  
Possible values:

Value	Explanation
CYCLE	(Default)
DELETE	
KEEP	
REUSE	

Field Name	Format/Length	Operating System
FGG-GENERATIONS	(B2)	BS2000

File generation groups only: number of generations.

Field Name	Format/Length	Operating System
FILE-SEQUENCE	(N3)	z/OS

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

Field Name	Format/Length	Operating System
FUNCTION	(A8)	z/OS

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	Operating System
PASSWORD	(A8)	BS2000

If the file is already password-protected, the actual password needed for write access must be specified here.



Field Name	Format/Length	Operating System
READ-PASSWORD	(A8)	BS2000

READ password (4 bytes) to be defined for the file. Use \*NONE to reset existing password. See also the PASSWORD field.

Field Name	Format/Length	Operating System
RETPD	(N4)	BS2000

Number of days the file must remain unchanged. Default is 0.

Field Name	Format/Length	Operating System
SHARE	(A3)	BS2000

Specifies whether other users can access files. Possible options:

Option	Explanation
NO	Other users are not authorized.
YES	Other users are authorized.

Field Name	Format/Length	Operating System
VOLUMES	(A240)	z/OS

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

Field Name	Format/Length	Operating System
WRITE-PASSWORD	(A8)	BS2000

WRITE password to be defined for the file. Use \*NONE to reset existing password. See also the PASSWORD field.

Field Name	Format/Length	Operating System
NUM-OF-BACKUP-VERS	(N3)	BS2000

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



# 15

## CHECK-SECURITY

---

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<b>File</b>	45
<b>Op-Sys</b>	z/OS
<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.

## Common Fields for all Operating Systems

---

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			

## Additional Fields Supported for z/OS

---

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	Operating System
ALLOWED	(A8)	z/OS

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	Operating System
ATTRIBUTE	(A8)	z/OS

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	Operating System
CLASS	(A8)	z/OS

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

Field Name	Format/Length	Operating System
ENTITY	(A200)	z/OS

Entity to be security checked.

Field Name	Format/Length	Operating System
INSTALLATION-PARMS	(A250)	z/OS

Installation parameters to be passed to security system.



# 16

## COMMON-DATA

---

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<b>File</b>	33
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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 CDATELEN must have a value of greater than 0 (zero).

## Common Fields for all Operating Systems

---

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.

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			



## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
600	Unknown function.	X	X	X
621	Identifier missing / duplicate / not found.	X	X	X
622	NUMBER-OF-ENTRIES missing or invalid.	X	X	X
623	ENTRY-LENGTH missing or invalid.	X	X	X
624	ENTRY-NUMBER missing or invalid.	X	X	X
625	Cannot allocate area.	X	X	X
626	DATA missing.	X	X	X
627	Field position + length > 250.	X	X	X
629	Area is protected.	X	X	X
746	Serialization running in error.	X	X	X

## Field Descriptions

Field Name	Format/Length	Operating System
CURRENT-ENTRIES	(N5)	z/OS, z/VSE, BS2000

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

Field Name	Format/Length	Operating System
DATA	(A250)	z/OS, z/VSE, BS2000

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	Operating System
DATA-ID	(A12)	z/OS, z/VSE, BS2000

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	Operating System
DELETE-ENTRY	(A3)	z/OS, z/VSE, BS2000

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	Operating System
ENTRY-LENGTH	(N3)	z/OS, z/VSE, BS2000

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	Operating System
ENTRY-NUMBER	(N5)	z/OS, z/VSE, BS2000

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	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

Function to be performed. Possible options:

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

Field Name	Format/Length	Operating System
NUMBER-OF-ENTRIES	(N5)	z/OS, z/VSE, BS2000

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	Operating System
PROTECT	(A8)	z/OS, z/VSE, BS2000

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.

# 17

## CONSOLE

---

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<b>File</b>	35
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	FIND, PROCESS
<b>Task</b>	Read operator console or issue console commands.

Note for BS2000: CONSOLE cannot be used in single-user mode.

## Common Fields for all Operating Systems

---

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.  In BS2000, also for DISPLAY, DIS-WTOR (not for z/VSE).
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.

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
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.

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
RESPONSE-FLAG	A1			
SEQUENCE-NUMBER	A8			
TEXT-FLAG	A1			

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
REPLY	A80			Relevant with FUNCTION=WTOR.
TIME-STAMP	A8		D	Relevant with FUNCTION=DIS-WTOR.

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.	X		X
537	Time limit reached.			X
600	Unknown function.	X	X	X
630	Console not defined or inactive.	X		X
688	Return code <i>xx</i> HCF function <i>xxxxxxxx</i> .		X	
699	GETVIS failed.	X	X	
750	Invalid operand within operand list.			X
778	Not APF authorized.	X		
799	Entire System Server internal error.			X
809	Subsystem not active.			X
986	No or not enough space for COMMAND IN MP.			X

## Field Descriptions

---

Field Name	Format/Length	Operating System
CONSOLE-ID	(B1)	z/OS

Only relevant for the `DISPLAY` function. The identifier of the console to be displayed. If the identifier is omitted, the master console is displayed. The field is ignored in BS2000.

Field Name	Format/Length	Operating System
DESCR-CODE-STRING	(A16)	z/OS, z/VSE

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	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

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 (not for z/VSE).

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
```

In BS2000, the functions `DISPLAY`, `DIS-WTOR` and `OP-CMD` require that the `UCON` interface task of the Entire System Server is active.

Field Name	Format/Length	Operating System
HOLD-FLAG	(A1)	z/OS, z/VSE

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	Operating System
JOB-ID	(A8)	z/OS, z/VSE, BS2000

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

Field Name	Format/Length	Operating System
JOB-NAME	(A8)	z/OS, z/VSE, BS2000

z/OS/z/VSE	BS2000
Only relevant for function DIS-WTOR. The job that issued the WTOR.	Only relevant for the function DIS-WTOR or DISPLAY. The job for which the console message was created if the job is still active.

Field Name	Format/Length	Operating System
JOB-TYPE	(A6)	z/OS, z/VSE, BS2000

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	Operating System
NETTO-TEXT	(A253)	z/OS, z/VSE, BS2000

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	Operating System
READ-DIRECTION	(A1)	z/OS, z/VSE, BS2000

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	Operating System
RECORD-NUMBER	(N9)	z/OS, z/VSE, BS2000

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	Operating System
REPLY	(A80)	z/OS, BS2000

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

Field Name	Format/Length	Operating System
REPLY-FLAG	(A1)	z/OS, z/VSE, BS2000

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	Operating System
REPLY-ID	(A8)	z/OS, z/VSE, BS2000

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	Operating System
RESPONSE-FLAG	(A1)	z/OS, z/VSE

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

Value	Explanation
N	No
Y	Yes

Field Name	Format/Length	Operating System
ROUTE-CODE-STRING	(A28)	z/OS, z/VSE

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	Operating System
SEQUENCE-NUMBER	(A8)	z/OS, z/VSE

Sequence number of the message since the last IPL.

Field Name	Format/Length	Operating System
TEXT	(A253)	z/OS, z/VSE, BS2000

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

Field Name	Format/Length	Operating System
TEXT-FLAG	(A1)	z/OS, z/VSE

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	Operating System
TEXT-LENGTH	(N3)	z/OS, z/VSE, BS2000

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	Operating System
TIME-STAMP	(A8)	z/OS, BS2000

Only relevant for function DIS-WTOR (z/OS). Time stamp of the console message in format *HH:MM:SS*.

Field Name	Format/Length	Operating System
TIMX	(T)	z/OS, z/VSE, BS2000

Time stamp in Natural internal format.

Field Name	Format/Length	Operating System
WAIT-TIME	(B4)	z/OS, z/VSE, BS2000

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.

Field Name	Format/Length	Operating System
TEXT-PART2	(A3)	BS2000

Bytes 254 - 256 of the text line.

Field Name	Format/Length	Operating System
NETTO-TEXT-PART2	(A3)	BS2000

Bytes 254 - 256 of the NETTO-TEXT.

## Default Order of Data Returned

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



# 18

## CONSOLE-LOG

---

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<b>File</b>	25
<b>Op-Sys</b>	z/OS, z/VSE
<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.

## Common Fields for all Operating Systems

---

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.

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
DATA-SET-KEY	N11		D	
LOG-JOB-NUMBER	N7		D	
LOG-JOB-NAME	A8		D	
LOG-REPLY-ID	A8		D	
LOG-SOURCE	A8		D	

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
DATE	A6			
PARTITION	A2		D	
MESSAGE-TYPE	A8			
CONSOLE-TYPE	A8			
TIME	A8			
INTERNAL-RECORD-NUMBER	N7			The record number from the hardcopy file.

## Relevant Error Codes

Code	Text	z/OS	z/VSE
533	Requested number or records scanned.	X	X
537	Time limit reached.	X	X
688	Return code xx HCF function xxxxxxxx.		X
699	GETVIS failed.	X	X
711	Logical Error occurred in Common JES Interface.	X	
712	Request to Common JES Interface failed.	X	
717	GENCB for ACB or RPL failed with RC:1:and RSN:2:	X	
719	Unable to :1: SYSOUT dataset.	X	
724	Requested job not found.	X	
731	Error occurred during spool GET, RPLFDBK :1:	X	
781	Unable to obtain storage for work area extension.	X	

Code	Text	z/OS	z/VSE
830	JES interface not active.	X	

## Field Descriptions

---

Field Name	Format/Length	Operating System
CONSOLE-TYPE	(A8)	z/VSE

Possible type of console:

Console	Explanation
HCF-ONLY	Hard copy facility only.
LOCAL	Local console.
REMOTE	Remote console.
REPLY	Reply console.

Field Name	Format/Length	Operating System
DATE	(A6)	z/VSE

Date the message was issued.

Field Name	Format/Length	Operating System
DATA-SET	(N5)	z/OS, z/VSE

Requested dataset number of job SYSLOG.

Field Name	Format/Length	Operating System
DATA-SET-KEY	(N1)	z/OS

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	Operating System
LOG-DATX	(D)	z/OS

Date in Natural internal format.



Field Name	Format/Length	Operating System
LOG-JOB-NAME	(A8)	z/OS

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	Operating System
LOG-JOB-NUMBER	(N7)	z/OS

Job number, if contained in record.

Field Name	Format/Length	Operating System
LOG-RECORD-TYPE	(A1)	z/OS

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	Operating System
LOG-SOURCE	(A8)	z/OS

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

Field Name	Format/Length	Operating System
LOG-REPLY-ID	(A8)	z/OS

Reply ID of WTOR.

Field Name	Format/Length	Operating System
LOG-REQUEST-TYPE	(A1)	z/OS, z/VSE

Possible values for z/OS:

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

Under z/VSE , this field contains the message level.

Field Name	Format/Length	Operating System
LOG-ROUTE-CODE	(A8)	z/OS

Route codes.

Field Name	Format/Length	Operating System
LOG-TEXT	(A128)	z/OS

The pure log record.

Field Name	Format/Length	Operating System
LOG-TIME	(A8)	z/OS

Time stamp in log record.

Field Name	Format/Length	Operating System
LOG-TIMX	(T)	z/OS, z/VSE

Time in Natural internal format.

Field Name	Format/Length	Operating System
MESSAGE-TYPE	(A8)	z/VSE

Possible message types:

- ACTION
- CONT
- E-ACTION
- DECISION

■ INFO

■ IPL

Field Name	Format/Length	Operating System
NUMBER-OF-TOKENS	(N3)	z/OS, z/VSE

Number of tokens in record.

Field Name	Format/Length	Operating System
PARTITION	(A2)	z/VSE

Partition which issued the message.

Field Name	Format/Length	Operating System
POSITION	(B1)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
RECORD	(A253)	z/OS, z/VSE

Log record.

Field Name	Format/Length	Operating System
RECORD-LENGTH	(N3)	z/OS, z/VSE

Length of log record.

Field Name	Format/Length	Operating System
RECORD-NUMBER	(N9)	z/OS, z/VSE

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.

In z/VSE, RECORD-NUMBER may take one of two positive sets of values:

- If the value is greater than or equal to the INTERNAL-RECORD-NUMBER of the first record in the hardcopy file, the records returned are based on INTERNAL-RECORD-NUMBER.
- If the value is less, then the value is considered a logical record number and records are returned based from the beginning of the hardcopy file.

Field Name	Format/Length	Operating System
SCAN	(A3)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
SCAN-COLUMN-FROM	(N3)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
SCAN-COLUMN-TO	(N3)	z/OS, z/VSE

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	Operating System
SCAN-LENGTH	(N3)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
SCAN-LIMIT	(N7)	z/OS, z/VSE

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	Operating System
SCAN-TYPE	(A1)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
TIME	(A8)	z/VSE

Time the message was issued.

Field Name	Format/Length	Operating System
TOKEN-VECTOR	(A225)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
TOKEN-DELIMITERS	(A10)	z/OS, z/VSE

## Default Order of Data Returned

---

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



# 19

## COPY-FILE

---

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<b>File</b>	37
<b>Op-Sys</b>	z/OS, z/VSE , BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	<p>Copy files or library members. The copy operation can be done without restrictions, that is, across operating systems, with the exception of executable items (e.g., copying a z/OS load module to a z/VSE phase is prohibited). Both source and target files must exist before this function is executed.</p> <p>z/OS: 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.</p> <p>BS2000: Copying to a BS2000 target can only be performed, if the target is locally available.</p>

## Common Fields for all Operating Systems

---

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	Not for z/VSE
TO-DSNAME	A54		D	Required
TO-PRODUCT	A1		D	
TO-PASSWORD	A8		D	Not for z/VSE
REPLACE	A3		D	



## Additional Fields Supported for z/OS

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

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
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-MEMBER	A8		D	
FROM-NODE	N3		D	
TO-VOLSER	A6		D	
TO-TAPE-DDNAME	A8		D	
TO-TAPE-FILE-SEQUENCE	B2		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
TO-USERID	A8		D	
TO-MEMBER	A8		D	
TO-NODE	N3		D	
FROM-LIBRARY	A8		D	
FROM-SUB-LIBRARY	A8		D	
FROM-MEMBER-TYPE	A8		D	
FROM-VSAM-CATALOG	A7		D	
FROM-LRECL	B2		D	
FROM-BLKSIZE	B2		D	
FROM-RECFM	A2		D	
TO-LIBRARY	A8		D	
TO-SUB-LIBRARY	A8		D	
TO-MEMBER-TYPE	A8		D	
TO-VSAM-CATALOG	A7		D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
SAME	A3		D	
DSORG	A4		D	
FROM-ELEMENT	A64		D	
FROM-ELEMENT-VERSION	A24		D	
FROM-ELEMENT-TYPE	A8		D	
FROM-ELEMENT-PASSWORD	A8		D	
TO-ELEMENT	A64		D	
TO-ELEMENT-VERSION	A24		D	
TO-ELEMENT-TYPE	A8		D	
TO-ELEMENT-PASSWORD	A8		D	
TO-ELEMENT-USER-DATE	A14		D	
TO-ELEMENT-USER-TIME	A8		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility	X		X
549	Not a PDSE data set	X		
659	Dataset is already cataloged	X		X
670	View not supported on one of the operating systems	X	X	
673	Access error due to FILETABLE=STATIC		X	
674	VTOC error reading format-3 labels		X	
675	:1: not supported		X	
676	Not first volume of multi-volume file		X	
678	MEMBER already exists.			X
679	Input and output files are incompatible	X	X	
683	FAMS error, R15 = :1:, R0 = :2:	X		
685	FAMS subtask abended	X		
699	GETVIS failed	X	X	
701	DSNAME missing	X	X	X
772	Requested dataset not found	X	X	X
798	Task was not started under TSOS.			X
799	Entire System Server internal error			X
858	Not authorized		X	
983	REMOTE-COPY not supported by COPY-FILE			X
991	Unknown product			X
998	Member not found	X	X	



**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	Operating System
DSORG	(A4)	BS2000

For copy of LMS element to file: DSORG of target file. Possible values:

Value	Explanation
CAT	DSORG as defined within catalog entry of file.
SAM	DSORG = SAM
ISAM	DSORG = ISAM

The default is the default of the LMS.

Field Name	Format/Length	Operating System
ERROR-NODE	(N5)	z/OS, z/VSE , BS2000

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

Field Name	Format/Length	Operating System
ERROR-VIEW	(N3)	z/OS, z/VSE , BS2000

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	Operating System
FROM-BLKSIZE	(B2)	z/VSE

Block size of file to be copied.

Field Name	Format/Length	Operating System
FROM-DSNAME	(A54)	z/OS, z/VSE , BS2000

Fully qualified input dataset name.

Field Name	Format/Length	Operating System
FROM-ELEMENT	(A64)	BS2000

Name of LMS element to be copied.

Field Name	Format/Length	Operating System
FROM-ELEMENT-PASSWORD	(A8)	BS2000

Password for protected input element.

Field Name	Format/Length	Operating System
FROM-ELEMENT-TYPE	(A8)	BS2000

Type of LMS element to be copied.

Field Name	Format/Length	Operating System
FROM-ELEMENT-VERSION	(A24)	BS2000

Version of LMS element to be copied.

Field Name	Format/Length	Operating System
FROM-LIBRARY	(A8)	z/VSE

Library name from which to copy.

Field Name	Format/Length	Operating System
FROM-LRECL	(B2)	z/VSE

Record length of file to be copied.

Field Name	Format/Length	Operating System
FROM-MEMBER	(A8)	z/OS, z/VSE

Name of the member to be copied.

Field Name	Format/Length	Operating System
FROM-MEMBER-TYPE	(A8)	z/VSE

Type of the member which is to be copied.

Field Name	Format/Length	Operating System
FROM-NODE	(N5)	z/OS, z/VSE

Entire System Server node ID from which to copy.

Field Name	Format/Length	Operating System
FROM-PASSWORD	(A8)	z/OS, BS2000

Password for input dataset.

Field Name	Format/Length	Operating System
FROM-PRODUCT	(A1)	z/OS, z/VSE , BS2000

Specify access method with FROM-LIBRARY:

Value	Explanation
L	CA-Librarian
M	LMS (BS2000)
P	CA-Panvalet

Field Name	Format/Length	Operating System
FROM-RECFM	(A2)	z/VSE

Record format of file to be copied.

Field Name	Format/Length	Operating System
FROM-SUB-LIBRARY	(A8)	z/VSE

Sublibrary from which to copy.

Field Name	Format/Length	Operating System
FROM-TAPE-DDNAME	(A8)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
FROM-TAPE-FILE-SEQUENCE	(B2)	z/OS, z/VSE

The file number of the dataset to be read.

Field Name	Format/Length	Operating System
FROM-USERID	(A8)	z/OS, z/VSE

User ID in FROM-NODE.

Field Name	Format/Length	Operating System
FROM-USER-PASSWORD	(A32)	z/OS

User password in FROM-NODE.

Field Name	Format/Length	Operating System
FROM-VOLSER	(A6)	z/OS, z/VSE

Volume serial number of the input dataset.

Field Name	Format/Length	Operating System
FROM-VSAM-CATALOG	(A7)	z/VSE

Name of the VSAM catalog where the FROM-LIBRARY is kept.

Field Name	Format/Length	Operating System
REPLACE	(A3)	z/OS, z/VSE , BS2000

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	Operating System
SAME	(A3)	BS2000

Specify YES for the output file to have the same security and save options as the input file.

Field Name	Format/Length	Operating System
TO-DSNAME	(A54)	z/OS, z/VSE , BS2000

Fully qualified output dataset name.

Field Name	Format/Length	Operating System
TO-ELEMENT	(A64)	BS2000

Name of target LMS element.

Field Name	Format/Length	Operating System
TO-ELEMENT-PASSWORD	(A8)	BS2000

Password for protected output element.

Field Name	Format/Length	Operating System
TO-ELEMENT-TYPE	(A8)	BS2000

Type of target LMS element.

Field Name	Format/Length	Operating System
TO-ELEMENT-USER-DATE	(A14)	BS2000

User date for output element. Format: *YYYY-MM-DDaaaa*, where *aaaa* can be any 4-character string.

Field Name	Format/Length	Operating System
TO-ELEMENT-USER-TIME	(A8)	BS2000

User time for output element. Format: *HH:MM:SS*.

Field Name	Format/Length	Operating System
TO-ELEMENT-VERSION	(A24)	BS2000

Version of LMS element to which is to be copied.

Field Name	Format/Length	Operating System
TO-LIBRARY	(A8)	z/VSE

Library name to which to copy.



Field Name	Format/Length	Operating System
T0-MEMBER	(A8)	z/OS, z/VSE

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	Operating System
T0-MEMBER-TYPE	(A8)	z/VSE

Type of the copied member in T0-LIBRARY.

Field Name	Format/Length	Operating System
T0-MSHP	(A3)	z/VSE

Indicate MSHP bypass required when copying members. Possible values:

Value	Explanation
NO	No MSHP bypass required.
YES	MSHP bypass to be performed.

Field Name	Format/Length	Operating System
T0-NODE	(N5)	z/OS, z/VSE

Entire System Server node ID to which to copy.

Field Name	Format/Length	Operating System
T0-PASSWORD	(A8)	z/OS, BS2000

Password for output dataset.

Field Name	Format/Length	Operating System
T0-PRODUCT	(A1)	z/OS, z/VSE , BS2000

Specify access method for T0-LIBRARY:

Value	Explanation
L	CA-Librarian
M	LMS (BS2000)
P	CA-Panvalet

Field Name	Format/Length	Operating System
T0-SUB-LIBRARY	(A8)	z/VSE

Sublibrary from which to copy.

Field Name	Format/Length	Operating System
T0-TAPE-DDNAME	(A8)	z/OS, z/VSE

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

Field Name	Format/Length	Operating System
T0-TAPE-FILE-SEQUENCE	(B2)	z/OS, z/VSE

The file number of the dataset to be written.

Field Name	Format/Length	Operating System
T0-USERID	(A8)	z/OS, z/VSE

User ID in T0-NODE.

Field Name	Format/Length	Operating System
T0-USER-PASSWORD	(A32)	z/OS

User password in T0-NODE.

Field Name	Format/Length	Operating System
T0-VOLSER	(A6)	z/OS, z/VSE

Volume serial number of the output dataset.

Field Name	Format/Length	Operating System
T0-VSAM-CATALOG	(A7)	z/VSE

Name of the VSAM catalog where the T0-LIBRARY is kept.



# 20

## DEVICE-NAMES

---

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<b>File</b>	30
<b>Op-Sys</b>	z/OS
<b>Statement</b>	FIND
<b>Task</b>	Display information for defined devices.

## Common Fields for all Operating Systems

---

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	Operating System
ADDRESS	(B2)	

Unit address.

Field Name	Format/Length	Operating System
NAME	(A8)	

Generic name defined during system generation.

Field Name	Format/Length	Operating System
TYPE	(B4)	

Internal device type code.

# 21

## ENTER-PROCEDURE

---

■ Common Fields for all Operating Systems .....	172
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<b>File</b>	217
<b>Op-Sys</b>	BS2000
<b>Task</b>	Enter procedure

## Common Fields for all Operating Systems

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			
SYSTEM-CODE	B2			
IDENTIFIER	A8		D	Required if multiple update views are executing in parallel.
FUNCTION	A8		D	Required on last request.
CARD	A80		D	Required if no DSNNAME/ELEMENT is given.
DSNAME	A54		D	Required if no CARD is given.
ELEMENT	A64		D	
PASSWORD	A8		D	
JOB-NAME	A8		D	
USERID	A8		D	
ACCOUNT-NUMBER	A8		D	
TIME	A5		D	
MONITOR-JOB-VARIABLE	A54		D	
JOB-VARIABLE-PASSWORD	A4		D	
USER-PASSWORD	A32		D	
JOB-CLASS	A8		D	
JOB-PRIORITY	A3		D	
RUN-PRIORITY	A3		D	
START-OPTION	A17		D	
START-DATE	A8		D	
START-TIME	A5		D	
REPEAT-OPTION	A17		D	
REPEAT-TIME	A5		D	
ELEMENT-PASSWORD	A8		D	
PARAMETER-SET-1	A253		D	



Dictionary Field Name	F/L	Mu	DE	Remarks
PARAMETER-SET-2	A253		D	
COMMAND-RESPONSE	A253			
START-DATX	D			
START-TIMX	T			
JOB-ID	A5			

## Relevant Error Codes

Code	Text	BS2000
506	Data set is migrated.	X
530	Access denied by Security facility.	X
556	File is in use.	X
701	DSNAME missing.	X
733	User ID does not exist.	X
749	PVS (CATID) not available.	X
798	Task was not started under TSOS.	X
799	Entire System Server internal error.	X
856	Operator unable to mount volume.	X
883	Dataset is full.	X
889	Permanent I/O error while writing dataset.	X
903	Dynamic allocation failed for temporary dataset.	X
909	Syntax error in JCL command.	X
991	Unknown product.	X
998	Member not found.	X

## 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	Operating System
ACCOUNT - NUMBER	(A8)	BS2000

Account number for the job.

Field Name	Format/Length	Operating System
CARD	(A80)	BS2000

Procedure record to be sent from Natural to the temporary file.

Field Name	Format/Length	Operating System
COMMAND - RESPONSE	(A253)	BS2000

ENTER-PROCEDURE command response.

Field Name	Format/Length	Operating System
DSNAME	(A54)	BS2000

Name of the list to be entered.



**Note:** FUNCTION=CLOSE is required to enter the procedure.

Field Name	Format/Length	Operating System
ELEMENT	(A64)	BS2000

Name of the LMS element to be entered.

Field Name	Format/Length	Operating System
ELEMENT - PASSWORD	(A8)	BS2000

Password for protected LMS element.

Field Name	Format/Length	Operating System
FUNCTION	(A8)	BS2000

Function to be performed. Possible options:

Blank Pass a JCL card or the name of the dataset or element to be submitted to the Entire System Server.

CLOSE All cards have been submitted. Specify this on the last request.

Field Name	Format/Length	Operating System
JOB-CLASS	(A8)	BS2000

Name of the job class where the job is to run.

Field Name	Format/Length	Operating System
JOB-ID	(A5)	BS2000

This field is returned after a call with `FUNCTIONS=CLOSE`.

Field Name	Format/Length	Operating System
JOB-NAME	(A8)	BS2000

Name of the job to be entered.

Field Name	Format/Length	Operating System
JOB-PRIORITY	(A3)	

Scheduling priority for job. Possible values are between 9 and the maximum of the job class, or STD. STD is the default.

Field Name	Format/Length	Operating System
JOB-VARIABLE-PASSWORD	(A4)	BS2000

Password for protected monitoring job variable.

Field Name	Format/Length	Operating System
MONITOR-JOB-VARIABLE	(A54)	BS2000

Specifies the name of a monitoring job variable that always contains the job status. For an explanation, see the description of the `MONITOR-JOB-VARIABLE` parameter of the view [SUBMIT](#).

Field Name	Format/Length	Operating System
PARAMETER-SET-1	(A253)	BS2000

Extra operands for command ENTER-PROCEDURE.

Field Name	Format/Length	Operating System
PARAMETER-SET-2	(A253)	BS2000

Extra operands for command ENTER-PROCEDURE.

Field Name	Format/Length	Operating System
PASSWORD	(A8)	BS2000

Password of protected file.

Field Name	Format/Length	Operating System
REPEAT-OPTION	(A17)	BS2000

Specifies repeated job runs. For an explanation, see the description of the REPEAT-OPTION parameter of the view [SUBMIT](#).

Field Name	Format/Length	Operating System
REPEAT-TIME	(A5)	BS2000

Specifies time for repeat runs. For an explanation, see the description of the REPEAT-TIME parameter of the view [SUBMIT](#).

Field Name	Format/Length	Operating System
RUN-PRIORITY	(A3)	BS2000

Priority during job execution. The value can be between job class maximum and 255, or STD. STD is the default.

Field Name	Format/Length	Operating System
START-DATE	(A8)	BS2000

Start date value in format *YY-MM-DD*.

Field Name	Format/Length	Operating System
START-DATX	(D)	BS2000

Start date of the entered procedure in Natural format.

Field Name	Format/Length	Operating System
START-OPTION	(A17)	BS2000

Specifies start of job. For an explanation, see the description of the `START-OPTION` parameter of the view [SUBMIT](#).

Field Name	Format/Length	Operating System
START-TIME	(A5)	BS2000

Start time value in format *HH:MM*.

Field Name	Format/Length	Operating System
START-TIMX	(T)	BS2000

Start time of entered procedure in Natural format.

Field Name	Format/Length	Operating System
TIME	(A5)	BS2000

Maximum CPU time the job may consume. For an explanation, see the description of the `TIME` parameter of the view [SUBMIT](#).

Field Name	Format/Length	Operating System
USERID	(A8)	BS2000

User ID under which the job is to be submitted.

Field Name	Format/Length	Operating System
USER-PASSWORD	(A32)	BS2000

Password belonging to the user ID under which the job is to be started.

## ENTER-PROCEDURE Programming Notes

ENTER-PROCEDURE is an UPDATE view, that is, data is transmitted from the Natural program (client side) to ESY (server side).

The Entire System Server view ENTER-PROCEDURE 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 the following example:

```
1 ENTER-PROCEDURE VIEW OF ENTER-PROCEDURE
2 ERROR-CODE
2 ERROR-TEXT
2 SYSTEM-MESSAGE-CODE
2 SYSTEM-CODE
2 COMMAND-RESPONSE
2 JOB-ID
2 START-DATX
2 START-TIMX
```

These fields in DEFINE DATA statement are the fields returned from the ENTER-PROCEDURE 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.

# 22

## EVENTING

---

■ Common Fields for all Operating Systems .....	180
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<b>File</b>	40
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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.  In BS2000, this view is only available in multi-user mode.

## Common Fields for all Operating Systems

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.

## Additional fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	A2			



## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
600	Unknown function.	X	X	X
745	Error occurred when executing Eventing			X
809	Subsystem not active.			X
886	Event is in use.	X	X	X
887	Event is already defined.	X	X	X
888	Event name must be specified.	X	X	X
890	Event does not exist.	X	X	X
891	Timeout waiting for event.	X	X	X
894	Enable eventing failed.			X
893	Getmain failed.	X	X	
983	Single user mode not supported by Eventing			X
986	No or not enough space for EVENTING MEMORY POOL			X

## 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	Operating System
EVENT-NAME	(A8)	z/OS, z/VSE, BS2000

Name of the event.

Field Name	Format/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

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	Operating System
MAX-TIME	(B4)	z/OS, z/VSE, BS2000

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	Operating System
MESSAGE-ARRAY	(A250) M7	z/OS, z/VSE, BS2000

Array of maximum 7 messages for `SEND/RECEIVE` functions.

Field Name	Format/Length	Operating System
NUMBER-OF-MESSAGES	(N5)	z/OS, z/VSE, BS2000

Number of messages waiting to be received.

Field Name	Format/Length	Operating System
NUMBER-OF-WAITERS	(N5)	z/OS, z/VSE, BS2000

Number of tasks waiting to be posted.



# 23

## FILE-ALLOCATE

---

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<b>File</b>	9
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	Enables the allocation of files from a Natural session.

## Common Fields for all Operating Systems

---

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	Required in z/VSE . VOLSER or UNIT is required in z/OS.
DSORG	A4		D	
UNIT	A8		D	VOLSER or UNIT is required in z/OS. Not for z/VSE.

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	

Dictionary Field Name	F/L	Mu	DE	Remarks
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	
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			

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
EXPIRATION-DATE	A8		D	
EXPIRATION-DATX	D		D	
EXTENT-START	N10		D	Required.
EXTENT-SIZE	N10		D	Required.

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
RECFM	A4		D	
LRECL	N5		D	
BLKSIZE	N5		D	
ALLOCATION-TYPE	A4		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
PRIMARY-ALLOCATION	N10		D	
SECONDARY-ALLOCATION	N10		D	
LABEL	A4		D	
SHARE	A3		D	
ISAM-KEY-POSITION	N5		D	
ISAM-KEY-LENGTH	N5		D	
REPLACE	A3		D	
BLOCK-CONTROL	A6		D	
PASSWORD	A8		D	
PRODUCT	A1		D	
VOLSER-ARRAY	A6	M / 5	D	

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.	X		X
531	Password missing or incorrect.			X
556	File is in use.			X
565	Syntax error in dataset name.			X
658	Dataset is not cataloged.			X
659	Dataset is already cataloged.			X
694	Strange error opening VTOC.		X	
695	VTOC is in use.		X	
696	Cannot assign logical unit.		X	
699	GETVIS storage request failed.		X	
700	Invalid value specified (DSORG/RECFM/TYPE).			X
701	DSNAME missing.	X	X	X
710	Allocation failed. Reason=TAPES NOT ALLOWED.	X	X	X
733	User ID does not exist.			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
853	Retention cycle unexpired / NEWNAME exists.			X
878	Volume defined as CA-Dynam/D pool name.		X	
899	I/O error reading VTOC.		X	
981	Invalid value specified (BLKCTRL/BLKSIZE/LRECL).			X



Code	Text	z/OS	z/VSE	BS2000
991	Unknown product.			X
993	Cannot open file.			X
994	File not on volume.		X	
996	Volume not online.		X	

## Field Descriptions

Field Name	Type/Length	Operating System
ALLOCATION-TYPE	(A4)	z/OS, BS2000

Space allocation type. Possible values:

z/OS		BS2000	
BLK	Block.	NSTD	Non-standard blocks (tape files).
CYL	Cylinder.	PAM	PAM pages (default).
TRK	Tracks (default).		

Field Name	Type/Length	Operating System
BLKSIZE	(N5)	z/OS, BS2000

z/OS	BS2000
Block size.	Number of PAM pages for a block if the field ALLOCATION-TYPE is PAM.
The default is 0.	The default is 1.

For non-STD blocks, block size in bytes (only valid for tape files).

Field Name	Type/Length	Operating System
BLOCK-CONTROL	(A6)	BS2000

Block control type for this file (depending on disk type K or NK). Possible options:

Option	Explanation
DATA	PAM key information in data (NK disks only)
NO	No PAM key information (NK disks only)
PAMKEY	Default. PAM key separate from data.

Field Name	Type/Length	Operating System
CATALOG	(A3)	z/OS

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	Operating System
CONTIG	(A3)	z/OS

Specifies contiguous allocated space. Possible options:

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

Field Name	Type/Length	Operating System
CREATE-JOBNAME	(A8)	z/OS

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

Field Name	Type/Length	Operating System
CREATE-STEPNAME	(A8)	z/OS

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

Field Name	Type/Length	Operating System
DDNAME	(A8)	z/OS

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	Operating System
DSNTYPE	(A8)	z/OS

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	Operating System
DSNTYPE-VERSION	(N1)	z/OS

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

Field Name	Type/Length	Operating System
DENSITY	(A1)	z/OS

Tape density. Possible options:

Option	Explanation
3	1600 BPI
4	6250 BPI

Field Name	Type/Length	Operating System
DIRECTORY-BLOCKS	(N7)	z/OS

Number of directory blocks for PDS.

Field Name	Type/Length	Operating System
DISP	(A3)	z/OS

Disposition of the dataset. Possible values:

Value	Explanation
NEW	Allocate new dataset.

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE , BS2000

Fully qualified dataset name. For BS2000, fully qualified file name.

Field Name	Type/Length	Operating System
DSORG	(A4)	z/OS, z/VSE, BS2000

Dataset organization. Possible options:

z/OS		z/VSE		BS2000	
P0	Partitioned dataset (PDS).	SD	Default. Sequential dataset.	I SAM	Default. Indexed Sequential Access Method.
				PAM	Block oriented file organization handled by User Primary Access Method (UPAM).
PS	Default. Sequential dataset.			PLAM	Program Library Access Method for LMS Libraries.
				SAM	Sequential Access Method.

Field Name	Type/Length	Operating System
EATTR	(A3)	z/OS

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	Operating System
EXPIRATION-DATE	(A8)	z/OS, z/VSE

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.

For z/OS, z/VSE, there is no default (i.e., no expiration date).

For BS2000, the default is the current date.

Field Name	Type/Length	Operating System
EXPIRATION-DATX	(D)	z/OS, z/VSE

Expiration date in internal format.

Field Name	Type/Length	Operating System
EXTENDED-TEXT	(A250)	z/OS

Text lines (up to 3) containing error description.

Field Name	Type/Length	Operating System
EXTENT-SIZE	(N10)	z/VSE

Size of the extent.

Field Name	Type/Length	Operating System
EXTENT-START	(N10)	z/VSE

Defines start of extent. For FBA, it is the block number. For CHD, it is the track number.

For allocating free space on any location, specify `EXTENT-START = -1`.

Field Name	Type/Length	Operating System
FREE	(A3)	z/OS

Specify `YES` to free the allocation for DDNAME.

Field Name	Type/Length	Operating System
ISAM-KEY-LENGTH	(N5)	BS2000

Gives the key length. Default is 8, maximum value is 253.

Field Name	Type/Length	Operating System
ISAM-KEY-POSITION	(N5)	BS2000

Gives the position of the first byte of the key within the record.

Default: 5 for RECFM=V, 1 for RECFM=F.

Field Name	Type/Length	Operating System
LABEL	(A4)	z/OS, BS2000

Type of label processing.

Field Name	Type/Length	Operating System
LRECL	(N5)	z/OS, BS2000

Logical record length. The default is 0.

Field Name	Type/Length	Operating System
MAXGENS	(N9)	z/OS

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 IGDSMSxx.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	BS2000

Password for write access, if existing file must be replaced.

Field Name	Type/Length	Operating System
PRIMARY-ALLOCATION	(N10)	z/OS, BS2000

- z/OS: Primary space allocation (default is 0).
- BS2000: Number of PAM pages for primary allocation (default is system default).

Field Name	Type/Length	Operating System
PRODUCT	(A1)	BS2000

Access method used. Possible options:

- M = LMS (BS2000)
- ' ' = default

Provide the following fields to create an LMS PLAM library:

**Example:**

```
FIND FILE-ALLOCATE WITH NODE = node
  AND DSNAME = 'dsname'
  AND DSORG = 'PLAM'
  AND PRODUCT = 'M'
  AND REPLACE = 'NO'
  ...
```

Field Name	Type/Length	Operating System
RECFM	(A4)	z/OS, BS2000

Record format.

For z/OS, the default is FB.

For BS2000, the default is V , N.

Field Name	Type/Length	Operating System
REPLACE	(A3)	BS2000

Specifies whether file with the same name is to be overwritten. Possible options:

Option	Explanation
NO	Default. Allocate only if file does not exist.
YES	Overwrite existing file.

The value YES is not possible for PLAM libraries.

Field Name	Type/Length	Operating System
RLSE	(A3)	z/OS

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	Operating System
ROUND	(A3)	z/OS

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	Operating System
SECONDARY - ALLOCATION	(N10)	z/OS, BS2000

z/OS: Secondary space allocation (default is 0).

BS2000: Number of PAM pages for secondary allocation (default is system default).

Field Name	Type/Length	Operating System
SHARE	(A3)	BS2000

Defines whether a file can be shared. Possible options:

Option	Explanation
NO	Default. File cannot be shared.
YES	File can be shared.

Field Name	Type/Length	Operating System
SMS - DATA - CLASS	(A8)	z/OS

Data class of SMS managed file.



Field Name	Type/Length	Operating System
SMS-MANAGEMENT-CLASS	(A8)	z/OS

Management class of SMS managed file.

Field Name	Type/Length	Operating System
SMS-STORAGE-CLASS	(A8)	z/OS

Storage class of SMS managed file.

Field Name	Type/Length	Operating System
UNIT	(A8)	z/OS, BS2000

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

For BS2000, this field is relevant only for tape files.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE, BS2000

Volume serial number where the file is to be located.

In BS2000, for multi-volume tape files, use the field VOLSER-ARRAY.

Field Name	Type/Length	Operating System
VOLSER-ARRAY	(A6) M5	BS2000

For multi-volume tape file: list of maximum 5 volumes.

Field Name	Type/Length	Operating System
VOLUME-COUNT	(N2)	z/OS

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

Field Name	Type/Length	Operating System
VOLUME-SEQUENCE	(N2)	z/OS

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.



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## FILE-ATTRIBUTES

---

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<b>File</b>	1
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	FIND
<b>Task</b>	Display attributes for a given file, for example, record format, block size, record length.

## Common Fields for all Operating Systems

---

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 in z/VSE. In BS2000, no descriptor.
DSNAME	A54		D	Required.
DSORG	A4			
CREATION-DATE	A8			
EXPIRATION-DATE	A8			
LAST-TTR	B3			Not for z/VSE.
LAST-TTTR	B4			Not for z/VSE.
FILE-SIZE	N10			
SECURITY	A5			Not for z/VSE.
SERIES	A8			
CREATION-DATX	D			
EXPIRATION-DATX	D			
PRODUCT	A1			
LRECL	N5			
BLKSIZE	N5			
RECFM	A5			

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
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			
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			

## Additional Fields Supported for z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
EXTENTS	A192			
CYLINDERS-ALLOCATED	N7			
TRACKS-ALLOCATED	N3			
UNIT	A3		D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
NUMBER-OF-EXTENTS	N3			
ALLOCATION-TYPE	A4			
SECONDARY-QTY	N7			Secondary allocation quantity in Unit of Allocation type.
PERCENT-USED	N3			
LAST-REFERENCE	A8			
LAST-REFERENCE-DATX	D			
SHARE	A4			
READ-PASSWORD	A8			
WRITE-PASSWORD	A8			
EXEC-PASSWORD	A8			
KEY-LENGTH	N4			
KEY-POSITION	N5			
ACCESS-NUMBER	N4			
VERSION-NUMBER	N4			
BACKUP-TYPE	A1			
ACCESS-TYPE	A5			
AUDIT-TYPE	A4			
MODIFICATION-DATX	D			Only for BS2000 V11 (OSD V1) or above.
MODIFICATION-TIMX	T			Only for BS2000 V11 (OSD V1) or above.
SERIES-ARRAY	A8	30		List of max. 30 device types in case of extents (disk files only).
VOLSER-ARRAY	A6	30		For tape files: list of max. 30 VOLUMES (MULTI-VOL.-FILE). First volser also in field VOLSER.

Dictionary Field Name	F/L	Mu	DE	Remarks
BLOCK-CONTROL	A6			
FILE-SEQUENCE-NUMBER	N3			
LABEL	A7			
BACKUP-INFO	A19		D	
BACKUP-VERSION-NUMBER	N5		D	
MIGRATE	A9		D	
STORAGE-LEVEL	A2		D	
CODE	A6			
NUM-OF-BACKUP-VERS	N3		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
500	VSAM error	X		
506	Data set is migrated.	X		
530	Access denied by Security Facility			X
565	Syntax error in dataset name			X
696	Cannot assign logical unit		X	
699	GETVIS failed	X	X	
701	DSNAME missing	X	X	X
733	User ID does not exist			X
772	Requested dataset not found			X
786	Unable to obtain storage for CSI work area.	X		
787	CSI request failed, Module :1:, Reason :2:, RC :3:.	X		
798	Task was not started under TSOS.			X
799	Entire System Server internal error			X
878	Volume defined as CA-Dynam/D pool name.		X	
899	I/O error during read	X	X	
993	Open error	X		
994	File not on volume		X	
996	Volume not online		X	

## Field Descriptions

---

Field Name	Type/Length	Operating System
ACCESS-NUMBER	(N4)	BS2000

Shows how many times the file was accessed.

Field Name	Type/Length	Operating System
ACCESS-TYPE	(A5)	BS2000

Shows whether the access mode is READ or WRITE.

Field Name	Type/Length	Operating System
ALLOCATION-TYPE	(A4)	z/OS, BS2000

Allocation type specified. Possible values:

z/OS		BS2000	
ABS	Absolute	FGG	File generation group
BLK	Block	NONE	Undefined
CYL	Cylinders	NSTD	Non-standard blocks (tape files)
TRK	Track	PAM	PAM blocks (standard)

Field Name	Type/Length	Operating System
AUDIT-TYPE	(A4)	BS2000

Shows which type of access to the file must be controlled.

Field Name	Type/Length	Operating System
BACKUP-INFO	(A19)	BS2000

Additional information about backup status:



LARG	LARGE = YES
MIGR	MIGRATED = YES
OPEN	OPEN BACKUP
PART	PARTIAL RESTORE

Field Name	Type/Length	Operating System
BACKUP-TYPE	(A1)	BS2000

Shows how often the file should be saved by ARCHIVE.

Field Name	Type/Length	Operating System
BACKUP-VERSION-NUMBER	(N5.0)	BS2000

Internal attribute for change save with the ARCHIVE or HSMS utility routine.

Field Name	Type/Length	Operating System
BLKSIZE	(N5)	z/OS, z/VSE, BS2000

Block size.

Field Name	Type/Length	Operating System
BLOCK-CONTROL	(A6)	BS2000

Possible values:

Value	Explanation
DATA	PAM key information within data (NK disks only)
NO	No PAM key information (NK disks only)
NONE	Block control undefined
PAMKEY	PAM key separate from data

Field Name	Type/Length	Operating System
CODE	(A6)	BS2000

Code of tape file.

Field Name	Type/Length	Operating System
CREATE-JOBNAME	(A8)	z/OS

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

Field Name	Type/Length	Operating System
CREATE-STEPNAME	(A8)	z/OS

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

Field Name	Type/Length	Operating System
CREATION-DATE	(A8)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
CREATION-DATX	(D)	z/OS, z/VSE, BS2000

Creation date in Natural format.

Field Name	Type/Length	Operating System
CYLINDERS-ALLOCATED	(N7)	z/OS, z/VSE

Number of integral cylinders allocated.

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

Fully qualified dataset name.

Field Name	Type/Length	Operating System
DSNTYPE	(A8)	z/OS

Data Set Type Specification.

Field Name	Type/Length	Operating System
DSNTYPE-VERSION	(N1)	z/OS

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

Field Name	Type/Length	Operating System
DSORG	(A4)	z/OS, z/VSE, BS2000

Dataset organization.

In z/OS, for example: PS, PO, VS.

In z/VSE : VS, DA, SD, SD/L, UN (undefined) VS/L (where *xx/L* indicates that the file is a z/VSE Librarian file).

In BS2000, this is the FCBTYPE.

Field Name	Type/Length	Operating System
EATTR	(A3)	z/OS

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	Operating System
EXEC-PASSWORD	(A8)	BS2000

If caller is TSOS and Entire System Server is running under TSOS, the EXEC password of the file is returned, if one exists (see field SECURITY).

Field Name	Type/Length	Operating System
EXPIRATION-DATE	(A8)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
EXPIRATION-DATX	(D)	z/OS, z/VSE, BS2000

Expiration date in Natural format.

Field Name	Type/Length	Operating System
EXTENTS	(A192)	z/OS, z/VSE

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	Operating System
EXTENTS-ARRAY	(A192) 59	z/OS

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

Field Name	Type/Length	Operating System
FILE-SEQUENCE-NUMBER	(N3)	BS2000

Only for tape files: file sequence number on tape.

Field Name	Type/Length	Operating System
FILE-SIZE	(N10)	z/OS, z/VSE, BS2000

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

In BS2000, this field contains the number of allocated PAM pages.

Field Name	Type/Length	Operating System
KEY-LENGTH	(N4)	BS2000

Key length for ISAM files.

Field Name	Type/Length	Operating System
KEY-POSITION	(N5)	BS2000

Position of the first byte of the key within a record.

Field Name	Type/Length	Operating System
LABEL	(A7)	BS2000

Type of label (tape files only).

Field Name	Type/Length	Operating System
LAST-REFERENCE	(A8)	z/OS, BS2000

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	Operating System
LAST-REFERENCE-DATX	(D)	z/OS, BS2000

Last reference date in Natural format.

Field Name	Type/Length	Operating System
LAST-TTR	(B3)	z/OS, BS2000

z/OS: Last track.

BS2000: Last used page of the file.

Field Name	Type/Length	Operating System
LAST-TTTR	(B4)	z/OS, BS2000

- z/OS: Last used track and block on track (TTTR).
- BS2000: Last used page of the file.

Field Name	Type/Length	Operating System
LRECL	(N5)	z/OS, z/VSE, BS2000

Logical record length.

Field Name	Type/Length	Operating System
MAXGENS	(N9)	z/OS

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	Operating System
MIGRATE	(A9)	BS2000

Indicates whether the file may be migrated: ALLOWED | INHIBITED.

Field Name	Type/Length	Operating System
MODIFICATION-DATX	(D)	BS2000

Date of last modification.

Only available for BS2000 V11 (OSD V1) or above.

Field Name	Type/Length	Operating System
MODIFICATION-TIMX	(D)	BS2000

Time of last modification.

Only available for BS2000 V11 (OSD V1) or above.

Field Name	Type/Length	Operating System
NUMBER-OF-EXTENTS	(N3)	z/OS, BS2000

Number of extents.

z/OS: Values are 1 - 16

BS2000: Values are 1 - 255.

Field Name	Type/Length	Operating System
NUMBER-OF-MEMBERS	(N7)	z/OS

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

Field Name	Type/Length	Operating System
OPTIONS	(A80)	z/OS

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

Field Name	Type/Length	Operating System
PAGES-USED	(N10)	z/OS

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

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/OS

Specify password for protected datasets.

Not required in BS2000.

Field Name	Type/Length	Operating System
PERCENT-USED	(N3)	z/OS, BS2000

Tracks used / tracks allocated.

BS2000: PAM pages used / total PAM pages allocated.

Field Name	Type/Length	Operating System
PRIMARY-QTY	(A10)	z/OS

Primary allocation quantity in unit of allocation type.

Field Name	Type/Length	Operating System
PRODUCT	(A1)	z/OS, z/VSE, BS2000

Access method used. Possible values:

Value	Explanation
L	CA-Librarian
M	BS2000 LMS (only for PLAM lib)
P	CA-Panvalet
S	z/VSE SAM (SD) file

Field Name	Type/Length	Operating System
READ - PASSWORD	(A8)	BS2000

If caller is TSOS and Entire System Server is running under TSOS, the READ password of the file is returned, if one exists (see field SECURITY).

Field Name	Type/Length	Operating System
RECFM	(A5)	z/OS, z/VSE, BS2000

Record format.

Field Name	Type/Length	Operating System
SECONDARY - QTY	(N10)	z/OS, BS2000

Secondary allocation quantity in Unit of Allocation type.

Field Name	Type/Length	Operating System
SECURITY	(A5)	z/OS, BS2000

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	Operating System
SHORT - INFO	(A4)	z/OS

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.



**Additional values for BS2000**

Value	Explanation
EXEC	Password-protected for execute operations.
R/E	Password-protected for read and execute operations.
R/W	Password-protected for read and write operations.
R/W/E	Password-protected for read, write and execute operations.
W/E	Password-protected for write and execute operations.

Field Name	Type/Length	Operating System
SERIES	(A8)	z/OS, z/VSE, BS2000

Device series for the unit, for example, 3380.

In BS2000, an example is D3480.

Field Name	Type/Length	Operating System
SERIES-ARRAY	(A8) 30	BS2000
SERIES-ARRAY	(A8) 59	z/OS

List of device series (multi-volume file). The first SERIES is also given in the field SERIES.

Field Name	Type/Length	Operating System
SHARE	(A4)	BS2000

Shows whether the file is accessible to other users.

Field Name	Type/Length	Operating System
SMS	(A3)	z/OS

Specifies whether the dataset is SMS-managed YES or NO.

Field Name	Type/Length	Operating System
SMS-DATA-CLASS	(A8)	z/OS

Data class of SMS-managed dataset.

Field Name	Type/Length	Operating System
SMS-MANAGEMENT-CLASS	(A8)	z/OS

Management class of SMS-managed dataset.

Field Name	Type/Length	Operating System
SMS-STORAGE-CLASS	(A8)	z/OS

Storage class of SMS-managed dataset.

Field Name	Type/Length	Operating System
STORAGE-LEVEL	(A2)	BS2000

Indicates the storage level for migrated files: S0 | S1 | S2 | ...

Field Name	Type/Length	Operating System
TOTAL-DIRECTORY-BLOCKS	(N5)	z/OS

Number of directory blocks. If the dataset is not a partitioned dataset, this field shows 0.

Field Name	Type/Length	Operating System
TRACKS-ALLOCATED	(N3)	z/OS, z/VSE

Number of remaining tracks allocated in addition to CYLINDERS-ALLOCATED.

Field Name	Type/Length	Operating System
UNIT	(A3)	z/OS, z/VSE

Unit on which the dataset is currently mounted.

Field Name	Type/Length	Operating System
UNUSED-DIRECTORY-BLOCKS	(N5)	z/OS

Number of unused directory blocks. If the dataset is not a partitioned dataset, this field shows 0.

Field Name	Type/Length	Operating System
UPDATED-SINCE-BACKUP	(A3)	z/OS

Specifies whether the dataset has been updated since the last backup: YES or NO.

Field Name	Type/Length	Operating System
VERSION-NUMBER	(N4)	BS2000

Version number of the file.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE, BS2000

Volume serial number. If not specified, the catalog entry for the dataset is used.

In BS2000, only relevant for tape files. Returns first VOLSER. For multi-volume file, see VOLSER-ARRAY.

Field Name	Type/Length	Operating System
VOLSER-ARRAY	(A6) 30	BS2000
VOLSER-ARRAY	(A6) 59	z/OS

List of volumes (multi-volume file). The first VOLSER is also given in the field VOLSER.

Field Name	Type/Length	Operating System
WRITE-PASSWORD	(A8)	BS2000

If caller is TSOS and Entire System Server is running under TSOS, the WRITE password of the file is returned, if one exists (see the field SECURITY).

Field Name	Format/Length	Operating System
NUM-OF-BACKUP-VERS	(N3)	BS2000

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



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## FILE-MAINTENANCE

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<b>File</b>	18
<b>Op-Sys</b>	z/OS, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	z/OS: Compress a PDS library online. BS2000: Compress a file (release unused space).

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLSER	A6		D	Required in z/OS if dataset is not cataloged.
LINE	A121		D	
COMPLETION-CODE	B2			
DISP	A3			

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			

## Relevant Error Codes

Code	Text	z/OS	BS2000
530	Access denied by security facility.		X
565	Syntax error in dataset name.		X
600	Unknown function.		X
701	DSNAME missing.		X
733	User ID does not exist.		X
772	Requested dataset not found.		X
778	Not APF authorized.	X	
798	Task was not started under TSOS.		X
799	Entire System Server internal error.		X
985	Access to tape file not allowed.		X

## Field Descriptions

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

IEBCOPY completion code.

Field Name	Type/Length	Operating System
DISP	(A3)	z/OS

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

- OLD
- SHR

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, BS2000

Fully qualified dataset name.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, BS2000

Possible values:

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

Field Name	Type/Length	Operating System
LINE	(A121)	z/OS

IEBCOPY output line. For a description of the line layout, see IEBCOPY documentation.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/OS, BS2000

Password for dataset

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS

Volume serial number of the dataset.



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## HELP-INFO

---

■ Common Fields for all Operating Systems .....	222
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<b>File</b>	84
<b>Op-Sys</b>	BS2000
<b>Statement</b>	FIND
<b>Task</b>	Display help text on error message.

## Common Fields for all Operating Systems

---

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			
SYSTEM-CODE	B2			
OPTION	A6		D	
MESSAGE-ID	A7		D	
LINE	A79		D	
LANGUAGE-ID	N1		D	

## Relevant Error Codes

---

Code	Text	BS2000
736	MESSAGE-ID missing.	X
799	Entire System Server internal error.	X

## Field Descriptions

---

Field Name	Type/Length	Operating System
OPTION	(A6)	

Help message option. Possible values:

Value	Explanation
FULL	Default. Full information.
MIN	Only message text.

Field Name	Type/Length	Operating System
MESSAGE - ID	(A7)	

BS2000 message ID as returned by some views in SYSTEM-MESSAGE-CODE field. For example, DMS0533.

Field Name	Type/Length	Operating System
LINE	(A79)	

Text line of help text.

Field Name	Type/Length	Operating System
LANGUAGE - ID	(N1)	

Language of help text. Possible values:

Value	Explanation
1	English help texts.
2	German help texts.

Any other value causes English help texts to be displayed. Default is the BS2000 default.



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## IDCAMS

---

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<b>File</b>	14
<b>Op-Sys</b>	z/OS, z/VSE
<b>Statement</b>	FIND
<b>Task</b>	Retrieve information on datasets using the IDCAMS utility.

## Common Fields for all Operating Systems

---

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	z/OS
779	IDCAMS has abended	X

## Field Descriptions

---

Field Name	Type/Length	Operating System
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	Operating System
LINE	(A133)	

IDCAMS output line.

Field Name	Type/Length	Operating System
LINE - LENGTH	(N3)	

Length of output line.

## Default Order of Data Returned

---

Each line of the output listing is presented in order.





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## IEBCOPY

---

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<b>File</b>	17
<b>Op-Sys</b>	z/OS
<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.

## Common Fields for all Operating Systems

---

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	

Dictionary Field Name	F/L	Mu	DE	Remarks
OUT - PASSWORD	A8		D	

## Relevant Error Codes

Code	Text	z/OS
778	Not APF authorized	X
551	MEMBER missing	X

## Field Descriptions

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

IEBCOPY completion code.

Field Name	Type/Length	Operating System
FROM-DSNAME	(A54)	

Fully qualified input dataset name.

Field Name	Type/Length	Operating System
FROM-MEMBER	(A10)	

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

Field Name	Type/Length	Operating System
FROM-PASSWORD	(A8)	

Password for input dataset if the dataset is password protected.

Field Name	Type/Length	Operating System
FROM-VOLSER	(A6)	

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

Field Name	Type/Length	Operating System
LINE	(A121)	

IEBCOPY output line.

Field Name	Type/Length	Operating System
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	Operating System
TO-DSNAME	(A54)	

Fully qualified output dataset name.

Field Name	Type/Length	Operating System
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	Operating System
TO-PASSWORD	(A8)	

Password for output dataset if the dataset is password protected.

Field Name	Type/Length	Operating System
T0-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.



# 29

## ITC

---

■ Common Fields for all Operating Systems .....	236
■ Relevant Error Codes .....	236
■ Field Descriptions .....	237

<b>File</b>	80
<b>Op-Sys</b>	BS2000
<b>Statement</b>	FIND / PROCESS
<b>Task</b>	Allows the execution of INTERTASK COMMUNICATION macros OPCOM, REVNT, SEVNT, RELBF, CLCOM via logical functions such as OPEN, RECEIVE.  This view is available only for single-user mode.

## Common Fields for all Operating Systems

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			
SYSTEM-CODE	B2			
FUNCTION	A8		D	
INTER-TASK-COMMUNICATION-NAME	A8		D	
ERASE	A3		D	
MESSAGE-LENGTH	N6		D	
MESSAGE-TEXT	A250		D	
WAIT-TIME	B4		D	
MESSAGE-ARRAY	A250	M / 5	D	

## Relevant Error Codes

Code	Text	BS2000
600	Unknown function.	X
699	Not enough main storage available.	X
735	Logical error using ITC.	X
750	Invalid operand within operand list.	X
752	Message/message length missing.	X
753	ITC name missing.	X
983	MULTI USER MODE not supported by ITC.	X



## Field Descriptions

Field Name	Type/Length	Operating System
ERASE	(A3)	

Specifies erasing of message from queue after receipt. Possible values:

Value	Explanation
YES	Default. Erase message.
NO	Retain message.

When the function is `CLOSE`, specifies whether all waiting messages should be erased `YES` or `NO`.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	

Possible values:

Value	Explanation
<code>CLOSE</code>	Delete an ITC.
<code>DELETE</code>	Delete the first message in the queue.
<code>OPEN</code>	Build an ITC.
<code>RECEIVE</code>	Receive message from ITC partner.
<code>SEND</code>	Send message to ITC partner.

Field Name	Type/Length	Operating System
INTER-TASK-COMMUNICATION-NAME	(A8)	

Function-dependent field. Meaning per function:

Function	Meaning
<code>CLOSE</code>	Own ITC name.
<code>OPEN</code>	Own (new) ITC name.
<code>RECEIVE</code>	ITC name of sending ITC partner.
<code>SEND</code>	ITC name of destination.

Field Name	Type/Length	Operating System
MESSAGE-ARRAY	(A250) M5	

Array of max. 5 messages for SEND and RECEIVE functions.

Field Name	Type/Length	Operating System
MESSAGE-LENGTH	(N6)	

Message length for functions SEND and RECEIVE.

Field Name	Type/Length	Operating System
MESSAGE-TEXT	(A250)	

Message text. For messages longer than 250 bytes, use the MESSAGE-ARRAY field.

Field Name	Type/Length	Operating System
WAIT-TIME	(B4)	

Maximum time (in seconds) to wait for a message. Possible values: 0 - 21599. Default is 600.

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## JOB-SWITCHES

---

■ Common Fields for all Operating Systems .....	240
■ Relevant Error Codes .....	240
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<b>File</b>	81
<b>Op-Sys</b>	BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	Query the user switches for a specified user ID.  When running in single-user mode, switches belonging to your own user ID can be reset, and the job switches of the same task can also be queried, set and reset.

## Common Fields for all Operating Systems

---

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			
SYSTEM-CODE	B2			
OPTION	A6		D	Relevant when FUNCTION=WRITE.
SWITCH-NUMBERS	A64		D	Relevant when FUNCTION=WRITE.
SWITCH-TYPE	A7		D	
SWITCH-VALUES	A32		D	
USERID	A8		D	Relevant when FUNCTION=READ.
FUNCTION	A8		D	Required.

## Relevant Error Codes

---

Code	Text	BS2000
530	Access denied by Security Facility	X
600	Unknown function	X
733	User ID does not exist	X
750	Invalid operand within operand list	X
755	Invalid or no SWITCH-TYPE specified	X
799	Entire System Server internal error	X
983	Function not supported by multi-user mode	X

## Field Descriptions

Field Name	Type/Length	Operating System
FUNCTION	(A8)	

Specifies the function to be performed on the switches. Possible options:

Option	Explanation
READ	Read switch status.
WRITE	Set switches given in field SWITCH-NUMBERS according to OPTION field.

For restrictions, see the field SWITCH-TYPE.

Field Name	Type/Length	Operating System
OPTION	(A6)	

Operation when FUNCTION=WRITE:

Operation	Explanation
INVERT	Invert value of the switches given in the list.
OFF	Set switches in the list to OFF.
ON	Set switches in the list to ON.

Field Name	Type/Length	Operating System
SWITCH-NUMBERS	(A64)	

Relevant when FUNCTION=WRITE. Gives the list of switches to be handled. Each switch must be specified as a 2-digit number between 00 and 31. There is no delimiter between switch numbers.

### Example:

The value 031229 means switches 3, 12 and 29.

Field Name	Type/Length	Operating System
SWITCH-TYPE	(A7)	

Defines whether the switches are USER switches or PROCESS switches. Query and modification of PROCESS switches is only possible when the Entire System Server runs in single-user mode. The same goes for WRITE of USER switches. In multi-user mode, the function is executed by the Entire System Server server task and the switches would be set there for the user ID of the server task.

Field Name	Type/Length	Operating System
SWITCH-VALUES	(A32)	

Returns the status of all switches. Possible values:

Value	Explanation
N	Switch is off.
Y	Switch is on.

Field Name	Type/Length	Operating System
USERID	(A8)	

Valid only when `FUNCTION=READ` and `SWITCH-TYPE=USER`: user ID for which switches are to be read.

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## JOB-VARIABLES

---

■ Common Fields for all Operating Systems .....	244
■ Relevant Error Codes .....	245
■ Field Descriptions .....	245

<b>File</b>	82
<b>Op-Sys</b>	BS2000
<b>Statement</b>	PROCESS, FIND
<b>Task</b>	Perform various job variable functions, for example, define and delete job variables, query and change job variable values.

## Common Fields for all Operating Systems

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			
SYSTEM-CODE	B2			
FUNCTION	A8		D	Required.
NAME	A54		D	Required.
SECOND-NAME	A54		D	Relevant with FUNCTION=WRITE or MODATTR only.
ACCESS	A5		D	Relevant with FUNCTION=MODATTR, ALLOC, ATTRIB.
SHARE	A3		D	Relevant with FUNCTION=MODATTR, ALLOC, ATTRIB.
READ-PASSWORD	A8		D	Relevant with FUNCTION=MODATTR, ALLOC, ATTRIB, WRITE.
WRITE-PASSWORD	A8		D	Relevant with FUNCTION=MODATTR, ALLOC, ATTRIB.
RETENTION-PERIOD	N5		D	Relevant with FUNCTION=MODATTR.
SUBSTRING-START	N3		D	Relevant with FUNCTION=WRITE or READ only.
SUBSTRING-LENGTH	N3		D	Relevant with FUNCTION=WRITE or READ only.
CREATION-DATE	A8		D	Relevant with FUNCTION=ATTRIB only.
EXPIRATION-DATE	A8		D	Relevant with FUNCTION=ATTRIB only.
JV-TYPE	A10			Relevant when FUNCTION=ATTRIB.
LENGTH	N3		D	Relevant when FUNCTION=ATTRIB, READ, WRITE.
DATA	A253		D	Relevant when FUNCTION=READ or WRITE.
DATA-APPENDIX	A3		D	Relevant when FUNCTION=READ or WRITE.
PASSWORD	A8		D	Relevant with all functions except ATTRIB.
CREATION-DATX	D			Relevant when FUNCTION=ATTRIB.
EXPIRATION-DATX	D			Relevant when FUNCTION=ATTRIB.
REPLACE	A3		D	Relevant when FUNCTION=ALLOC.
FROM-SUBSTRING-START	N3		D	Relevant when FUNCTION=WRITE.



Dictionary Field Name	F/L	Mu	DE	Remarks
FROM-SUBSTRING-LENGTH	N3		D	Relevant when FUNCTION=WRITE.

## Relevant Error Codes

Code	Text	BS2000
530	Access denied by Security Facility.	X
531	Password missing or incorrect.	X
600	Unknown function.	X
626	DATA missing.	X
699	Not enough main storage available.	X
733	User ID does not exist.	X
747	LENGTH or SUBSTRING-LENGTH invalid.	X
756	Job variable name missing or invalid.	X
798	Task was not started under TSOS.	X
799	Entire System Server internal error.	X
987	Job Variable already exists.	X
992	Requested job variable not found.	X

## Field Descriptions

Field Name	Type/Length	Operating System
ACCESS	(A5)	

Specifies whether access to the job variable is READ or WRITE. WRITE is the default. Valid with FUNCTION=MODATTR as input field. With ALLOC and ATTRIB, it is an output field.

Field Name	Type/Length	Operating System
CREATION-DATE	(A8)	

Only for FUNCTION=ATTRIB: The creation date of the job variable.

Field Name	Type/Length	Operating System
CREATION-DATX	(D)	

Creation date in Natural format.

Field Name	Type/Length	Operating System
DATA	(A253)	

Usage of this field depends on the function.

When FUNCTION=READ, contents of job variable or part of it (substring).

When FUNCTION=WRITE, value to be written (it is also possible to copy contents or substring from another job variable instead of data. Fields SECOND-NAME, FROM-SUBSTRING-START, FROM-SUBSTRING-LENGTH are relevant in this case).

Field Name	Type/Length	Operating System
DATA-APPENDIX	(A3)	

This field contains bytes 254-256 of job variable. Refer to DATA field for more details.

Field Name	Type/Length	Operating System
EXPIRATION-DATE	(A8)	

Only for FUNCTION=ATTRIB: The date after which the job variable can be erased.

Field Name	Type/Length	Operating System
EXPIRATION-DATX	(D)	

Expiration date in Natural format.

Field Name	Type/Length	Operating System
FROM-SUBSTRING-LENGTH	(N3)	

Only for function WRITE: Length of substring to be copied from job variable specified in SECOND-NAME. Required if FROM-SUBSTRING-START is specified.

Field Name	Type/Length	Operating System
FROM-SUBSTRING-START	(N3)	

Only for function WRITE: Start of substring to be copied from job variable specified in SECOND-NAME. If this is omitted, the entire job variable is copied.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	

Function to be performed. Possible options:

Option	Explanation
ALLOC	Define a job variable.
ATTRIB	Retrieve information about a job variable.
DELETE	Delete a job variable.
LIST	Retrieve list of job variables (only NAME is valid for this function).
MODATTR	Modify characteristics of a job variable.
READ	Read value of a job variable.
WRITE	Set value of of a job variable, or copy from one job variable to another.

Field Name	Type/Length	Operating System
JV-TYPE	(A10)	

The type of job variable is returned in this field when FUNCTION=ATTRIB. Possible values are NUMERIC, NON-NUMERIC.

Field Name	Type/Length	Operating System
LENGTH	(N3)	

Usage of this field depends on the function.

When FUNCTION=ATTRIB, the size of the job variable (length of JV value).

When FUNCTION=READ, real length of data read.

When FUNCTION=WRITE, length of data to be written. This can also be specified in the field SUBSTRING-LENGTH. If DATA is given, both can be omitted.



**Note:** SUBSTRING-START + LENGTH must not exceed 257.

Field Name	Type/Length	Operating System
NAME	(A54)	

Name of the job variable to be handled. With function `LIST`, the name can contain wildcards, but a name cannot start with an asterisk `*`. Wildcards in catalog ID or user ID of the JV name are only allowed for user TSOS.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	

Valid for all functions except `FUNCTION=ATTRIB`. If the job variable specified in `NAME` is password-protected, the appropriate password must be specified here.

Field Name	Type/Length	Operating System
READ - PASSWORD	(A8)	

Usage of this field depends on the function. Possible values:

When `FUNCTION=ATTRIB`:

Value	Explanation
NONE	No password is defined.
YES	Read password is defined for job variable. If caller is TSOS and Entire System Server is running under TSOS, the password itself is returned.

When `FUNCTION=ALLOC` or `MODATTR`:

Value	Explanation
<i>blank</i>	Default. No read password.
<i>password</i>	New read password to be defined for job variable
*NONE	Reset existing password.

When `FUNCTION=WRITE`:

When copying from another job variable which is password-protected, the appropriate password for that job variable.

Field Name	Type/Length	Operating System
REPLACE	(A3)	

Only for function ALLOC. Possible values:

Value	Explanation
IGN	Default. Allocate job variable if it does not already exist and ignore allocate for existing job variable (corresponds to BS2000 command DCLJV).
NO	Allocate job variable only if it does not already exist. If it already exists, Error 987 is returned.
YES	Allocate job variable and replace any existing job variable with the same name. The existing job variable is erased before allocation.

Field Name	Type/Length	Operating System
RETENTION-PERIOD	(N5)	

Only for FUNCTION=MODATTR. Specifies how many days the job variable must remain unchanged.

Field Name	Type/Length	Operating System
SECOND-NAME	(A54)	

When FUNCTION=MODATTR, new name when renaming job variable. No user ID can be specified.

When FUNCTION=WRITE, input name when copying job variable.

Field Name	Type/Length	Operating System
SHARE	(A3)	

Specifies whether the job variable is accessible to other users.

Valid with FUNCTION=MODATTR as input field.

The value is returned with FUNCTION=ATTRIB or ALLOC. Possible options:

Option	Explanation
NO	Default. The job variable is not accessible to other users.
YES	The job variable is accessible to other users.

Field Name	Type/Length	Operating System
SUBSTRING-LENGTH	(N3)	

Usage of this field depends on the function.

When FUNCTION=READ, the length of substring to be read.

When FUNCTION=WRITE, the length of the substring to be written. This can also be specified in the field LENGTH. If DATA is given, both can be omitted.



**Note:** SUBSTRING-START + SUBSTRING-LENGTH must not exceed 257.

Field Name	Type/Length	Operating System
SUBSTRING-START	(N3)	

Valid only with FUNCTION=READ or WRITE. Start position of substring, if only substring of the job variable is to be read or written. Maximum value is 256.

Field Name	Type/Length	Operating System
WRITE-PASSWORD	(A8)	

Usage of this field depends on the function. Possible values:

When FUNCTION=ATTRIB:

Value	Explanation
NONE	No password is defined.
YES	Write password is defined for job variable. If caller is TSOS and Entire System Server is running under TSOS, the password itself is returned.

When FUNCTION=ALLOC or MODATTR:

Value	Explanation
<i>blank</i>	Default. No write password.
<i>password</i>	New write password to be defined for job variable.
*NONE	Reset existing password.

# 32

## LIB-DIRECTORY

---

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<b>File</b>	3
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	FIND
<b>Task</b>	This view reads the directory of the specified library and returns the entries record by record.

## Common Fields for all Operating Systems

---

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 in z/OS and BS2000.
PASSWORD	A8		D	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	



Dictionary Field Name	F/L	Mu	DE	Remarks
USER-DATA-LENGTH	N3		D	
VERSION	A2		D	
VOLSER	A6		D	Required only if dataset is not cataloged.

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
BLOCK-COUNT	N5		D	Number of blocks used by the member or sub-library.
DATE-CHANGED	A6		D	
DATE-CREATED	A6		D	Creation date of member or sub-library in format <i>YYMMDD</i> .
DATX-CHANGED	D		D	
DATX-CREATED	D		D	Creation date of member or sub-library in internal format.
LIBRARY	A8		D	Required.
LIBRARY-BLOCKS-USED	N7		D	Relevant if LIST-SUBLIBS=YES.
LIST-SUBLIBS	A3		D	Not required if SUB-LIBRARY is specified.
MEMBER	A10		D	
MEMBER-COUNT	N5		D	Relevant if LIST-SUBLIBS=YES.
MEMBER-TYPE	A8		D	
MODULE-ATTRIBUTES	A80		D	
RECORD-COUNT	N7		D	
SUB-LIBRARY	A8		D	Not required if LIST-SUBLIBS is specified.
TIME-CHANGED	N7			
TIME-CREATED	N7			Creation time of member (a numeric value equivalent to <i>HHMMSS</i> ).
USER-DATA	A120		D	
USER-DATA-HEX	(B120)		D	
USER-DATA-LENGTH	N3		D	
VOLSER	A6		D	Required only if dataset is not known to Entire System Server.
VSAM-CATALOG	A8		D	Required only if VSAM-controlled CA-Librarian file.

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
CREATION-DATE	A14		D	
CREATION-TIME	A8		D	
ELEMENT	A64		D	
ELEMENT-TYPE	A8		D	
ELEMENT-VERSION	A24		D	
EXEC-PROTECTION	A5			
MODIF-DATE	A14		D	
MODIF-TIME	A8		D	
PRODUCT	A1		D	
READ-PROTECTION	A5			
STORE-FORM	A1		D	
SYSTEM-CODE	B2			
USER-DATE	A14		D	
USER-DATX	D		D	
USER-TIME	A8		D	
USER-TIMX	T		D	
WRITE-PROTECTION	A5			

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
500	VSAM error	X		
530	Access denied by Security Facility			X
531	Password missing or incorrect			X
550	File not a PDS	X		
565	Syntax error in dataset name			X
697	Library/Sublib not found		X	
698	Internal CA-Librarian error		X	
699	GETVIS failed	X	X	
701	DSNAME missing			X
733	User ID does not exist			X

Code	Text	z/OS	z/VSE	BS2000
772	Requested dataset not found			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error			X
878	Volume defined as CA-Dynam/D pool name.		X	
899	I/O error during read	X		
906	DESERV error, R15=xxxxxxxx, R0=xxxxxxxx	X		
991	Unknown product	X		X
993	OPEN error	X		

## Field Descriptions

Field Name	Type/Length	Operating System
ALIAS	(A8)	z/OS

Possible values:

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

Field Name	Type/Length	Operating System
ALIAS-ORIGINAL	(A8)	z/OS

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

Field Name	Type/Length	Operating System
BLOCK-COUNT	(N5)	z/VSE

Number of blocks used by the member.

Field Name	Type/Length	Operating System
CREATION-DATE	(A14)	BS2000

Creation date of element.

Field Name	Type/Length	Operating System
CREATION-TIME	(A8)	BS2000

Creation time of element.

Field Name	Type/Length	Operating System
DATE-CHANGED	(A6)	z/VSE

Date of last change made to the member in format *YYMMDD*.

Field Name	Type/Length	Operating System
DATE-CREATED	(A6)	z/VSE

Creation date of member in format *YYMMDD*.

Field Name	Type/Length	Operating System
DATX-CHANGED	(D)	z/VSE

Date of last change made to the member in Natural format.

Field Name	Type/Length	Operating System
DATX-CREATED	(D)	z/VSE

Creation date of member in Natural format.

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

Fully qualified dataset name.

Field Name	Type/Length	Operating System
ELEMENT	(A64)	BS2000

Name of LMS element.

Field Name	Type/Length	Operating System
ELEMENT-TYPE	(A8)	BS2000

Type of LMS element.

Field Name	Type/Length	Operating System
ELEMENT-VERSION	(A24)	BS2000

Version of LMS element.

Field Name	Type/Length	Operating System
EXEC-PROTECTION	(A5)	BS2000

Protection attributes of element for EXECUTION.

Possible values are Y (yes) or N (no).

Protection Attribute	Meaning
Byte 0:	Special protection.
Byte 1:	OWNER can access.
Byte 2:	GROUP can access.
Byte 3:	OTHERS can access.
Byte 4:	Password defined.

Field Name	Type/Length	Operating System
GENERATION	(N9)	z/OS

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

Field Name	Type/Length	Operating System
LIBRARY	(A8)	z/VSE

Name of library.

Field Name	Type/Length	Operating System
LIBRARY-BLOCKS-USED	(N7)	z/VSE

Relevant when LIST-SUBLIBS=YES. Number of blocks used by the library.

Field Name	Type/Length	Operating System
LONG-ALIAS	(A3)	z/OS

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	Operating System
MEMBER	(A10)	z/OS, z/VSE

Name of member.

Field Name	Type/Length	Operating System
MEMBER-COUNT	(N5)	z/VSE

Relevant when LIST-SUBLIBS=YES. Number of members in sublibrary.

Field Name	Type/Length	Operating System
MEMBER-LONG-NAME	(A253)	z/OS

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	Operating System
MEMBER-TTR	(B4)	z/OS

Field Name	Type/Length	Operating System
MEMBER-TYPE	(A8)	z/VSE

Member type.

Field Name	Type/Length	Operating System
MODIF-DATE	(A14)	BS2000

Date of last modification to the element.

Field Name	Type/Length	Operating System
MODIF-TIME	(A8)	BS2000

Time of last modification to the element.

Field Name	Type/Length	Operating System
MODULE-ATTRIBUTES	(A253)	z/OS, z/VSE

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.	RECTYPEF	Member has fixed record format.
AMODE64	Module/alias is AMODE 64 (z/OS only).	RECTYPEU	Member has undefined record format.
AMODEANY	Module/alias is AMODE ANY.	RECTYPEV	Member has variable record format.
AUTH	APF-authorized.	RMODEANY	Phase has RMODE ANY.
COMPRESSED	Module is in COMPRESSED format.	RMODE24	Phase has RMODE 24.
FETCHPACK	Module is FETCHOPT PACK.	RMODE31	Phase has RMODE 31.
FETCHPRIME	Module is FETCHOPT PRIME.	SYSIPT	Member contains SYSIPT data.
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).		
LOADONLY	Only loadable.		
MAMODE31	If alias, main EP is AMODE 31.		
MAMODE64	If alias, main EP is AMODE 64 (z/OS only).		
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	Operating System
MODULE - LENGTH	(N11)	z/OS

Length of module in bytes.

Field Name	Type/Length	Operating System
NUMBER-OF-OCCURRENCES	(N7)	z/OS

Number of records which contain the requested string.

Field Name	Type/Length	Operating System
OPTIONS	(A80)	z/OS

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

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/OS, z/VSE, BS2000

Password for protected datasets.

Field Name	Type/Length	Operating System
PRODUCT	(A1)	z/OS, BS2000

Access method used. Possible options:

Option	Explanation
L	CA-Librarian
M	BS2000 LMS
P	CA-Panvalet

Field Name	Type/Length	Operating System
RECORD	(A200)	z/OS

String for which SCAN is to be performed.



Field Name	Type/Length	Operating System
READ-PROTECTION	(A5)	BS2000

Protection attributes of element for READ. Possible values are Y (yes) or N (no).

Protection Attribute	Meaning
Byte 0:	Special protection.
Byte 1:	OWNER can access.
Byte 2:	GROUP can access.
Byte 3:	OTHERS can access.
Byte 4:	Password defined.

Field Name	Type/Length	Operating System
RECORD-COUNT	(N7)	z/VSE

Number of records in member.

Field Name	Type/Length	Operating System
STORE-FORM	(A1)	BS2000

Store form of element. Possible options:

Option	Explanation
D	Delta
V	Full

Field Name	Type/Length	Operating System
SUB-LIBRARY	(A8)	z/VSE

Name of sublibrary.

Field Name	Type/Length	Operating System
SUB-LIBS	(A3)	z/VSE

Specify YES to return sublibrary names.

Field Name	Type/Length	Operating System
TIME-CHANGED	(N7)	z/VSE

Time of last change made to the member.

Field Name	Type/Length	Operating System
TIME-CREATED	(N7)	z/VSE

Creation time of member.

Field Name	Type/Length	Operating System
USER-DATA	(A120)	z/OS, z/VSE

User data for the member.

z/OS: 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	Operating System
USER-DATA-HEX	(B120)	z/OS, z/VSE

User data for the member in hexadecimal format.

Field Name	Type/Length	Operating System
USER-DATA-LENGTH	(N3)	z/OS, z/VSE

Length of user data for the member.

Field Name	Type/Length	Operating System
USER-DATE	(A14)	BS2000

Date the user specified for the element.

Field Name	Type/Length	Operating System
USER-DATX	(D)	BS2000

Date the user specified for the element in Natural format.

Field Name	Type/Length	Operating System
USER-TIME	(A8)	BS2000

Time the user specified for the element.

Field Name	Type/Length	Operating System
USER-TIMX	(T)	BS2000

Time the user specified for the element in Natural format.

Field Name	Type/Length	Operating System
VERSION	(A2)	z/OS

Version of CA-Panvalet access method.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number.

Field Name	Type/Length	Operating System
VSAM-CATALOG	(A8)	z/VSE

Name of the VSAM catalog where the library is kept.

Field Name	Type/Length	Operating System
WRITE-PROTECTION	(A5)	BS2000

Protection attributes of element for WRITE.

Possible values are Y (yes) or N (no).

Protection Attribute	Meaning
Byte 0:	Special protection.
Byte 1:	OWNER can access.
Byte 2:	GROUP can access.
Byte 3:	OTHERS can access.
Byte 4:	Password defined.

## Default Order of Data Returned

---

In z/OS, members are presented in ascending order.

In z/VSE, members are presented in ascending order, grouped by member type.

# 33

## LIB-UPDATE

---

■ Common Fields for all Operating Systems .....	266
■ Additional Fields Supported for z/OS .....	266
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<b>File</b>	5
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	Perform library update functions, for example, rename, purge directory entries.

## Common Fields for all Operating Systems

---

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.

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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.

## Additional Fields supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLSER	A6		D	Required.
LIBRARY	A8		D	Required.
SUB-LIBRARY	A8		D	Required.
MEMBER-TYPE	A8		D	
NEWNAME-MEMBER-TYPE	A8		D	Relevant with FUNCTION=RENAME.
VSAM-CATALOG	A8		D	Required if VSAM-controlled Librarian file.

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
PRODUCT	A1		D	
PASSWORD	A8		D	
SYSTEM-CODE	B2		D	
ELEMENT	A64		D	
NEWNAME-ELEMENT	A64		D	Relevant with FUNCTION=RENAME.
ELEMENT-TYPE	A8		D	
NEWNAME-ELEMENT-TYPE	A8		D	Relevant with FUNCTION=RENAME.
ELEMENT-PASSWORD	A8		D	
ELEMENT-VERSION	A24		D	
NEWNAME-ELEMENT-VERSION	A24		D	Relevant with FUNCTION=RENAME.
OVERWRITE	A3		D	Relevant with FUNCTION=RENAME.
NEWNAME-ELEMENT-PASSWORD	A8		D	Relevant with FUNCTION=RENAME.
NEWNAME-ELEMENT-USER-DATE	A14		D	Relevant with FUNCTION=RENAME.
NEWNAME-ELEMENT-USER-TIME	A8		D	Relevant with FUNCTION=RENAME.

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.			X
531	Password missing or incorrect.			X
541	Member generation not found in directory.	X		
542	GENERATION not valid for this library.	X		
543	GENERATION not valid for FUNCTION =:1:.	X		
550	File not a PDS.	X		
551	MEMBER not specified.	X	X	X
552	NEWNAME / ALIAS missing.	X	X	
553	I/O error on directory.	X		
554	Member not found.	X	X	
555	NEWNAME / ALIAS already exists.	X	X	
556	File is in use.	X		
557	File held by linkage editor.			
565	Syntax error in dataset name.			X
572	Newname missing.			X
600	Unknown function.	X	X	X
608	ISITMGD failed with RC :1: and reason :2:.	X		
692	You are not permitted to access member.			X
697	Library/sublib not found.		X	
698	Internal Librarian error.		X	
699	Not enough main storage available.	X	X	
701	DSNAME missing.			X
772	Requested dataset not found.			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
878	Volume defined as CA-Dynam/D pool name.		X	
989	Invalid element specification.			X
991	Unknown product.	X		X
993	OPEN error.	X		
998	Member not found.			X



## Field Descriptions

Field Name	Type/Length	Operating System
ALIAS	(A8)	z/OS

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

Field Name	Type/Length	Operating System
ALIAS-EP	(B4)	z/OS

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

Field Name	Type/Length	Operating System
ALIAS-AMODE	(A3)	z/OS

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	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

Dataset name of the library to be updated.

Field Name	Type/Length	Operating System
ELEMENT	(A64)	BS2000

Element name.

Field Name	Type/Length	Operating System
ELEMENT-PASSWORD	(A8)	BS2000

Password for protected elements.

Field Name	Type/Length	Operating System
ELEMENT-TYPE	(A8)	BS2000

Type of element.

Field Name	Type/Length	Operating System
ELEMENT-VERSION	(A24)	BS2000

Version number of element to be updated.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

Function to be performed. Possible options:

Option	Explanation
ALIAS	Assign alias to existing member. (z/OS only)
RENAME	Rename member/element.
SCRATCH	Scratch member/element.

Field Name	Type/Length	Operating System
GENERATION	(N9)	z/OS

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

Field Name	Type/Length	Operating System
LIBRARY	(A8)	z/VSE

Name of library.

Field Name	Type/Length	Operating System
MEMBER	(A10)	z/OS, z/VSE

Name of member to be processed.

Field Name	Type/Length	Operating System
MEMBER-PASSWORD	(A8)	z/OS

Password for protected CA-Librarian member.

Field Name	Type/Length	Operating System
MEMBER-TYPE	(A8)	z/VSE

Type of member.

Field Name	Type/Length	Operating System
NEWNAME-ELEMENT	(A64)	BS2000

Relevant with FUNCTION=RENAME. New element name.

Field Name	Type/Length	Operating System
NEWNAME-ELEMENT-PASSWORD	(A8)	BS2000

Relevant with FUNCTION=RENAME. Password, if an existing, password-protected element has to be overwritten with RENAME.

Field Name	Type/Length	Operating System
NEWNAME-ELEMENT-TYPE	(A8)	BS2000

Relevant with FUNCTION=RENAME. New element type.

Field Name	Type/Length	Operating System
NEWNAME-ELEMENT-USER-DATE	(A14)	BS2000

Is written as element information into the LMS library.

Format: YYYY-MM-DDaaaa, where aaaa can be any 4-character string.

Field Name	Type/Length	Operating System
NEWNAME-ELEMENT-USER-TIME	(A8)	BS2000

Is written as element information into the LMS library. Format: HH:MM:SS.

Field Name	Type/Length	Operating System
NEWNAME-ELEMENT-VERSION	(A24)	BS2000

Relevant with FUNCTION=RENAME. Version of new element.

Field Name	Type/Length	Operating System
NEWNAME-MEMBER	(A10)	z/OS, z/VSE

Relevant for FUNCTION=RENAME. New name of member.

Field Name	Type/Length	Operating System
NEWNAME-MEMBER-TYPE	(A8)	z/VSE

Type of new member when FUNCTION=RENAME.

Field Name	Type/Length	Operating System
OPTIONS	(A80)	z/OS

Options for CA-Librarian access method.

Field Name	Type/Length	Operating System
OVERWRITE	(A3)	BS2000

Relevant with FUNCTION=RENAME. Possible options:

Option	Explanation
NO	Default. Do not overwrite target element with the same name.
EXTEND	Extend target element with this element.
ONLY	Target element must exist.
YES	Overwrite target element with the same name.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/OS, BS2000

Password for protected dataset or file.

Field Name	Type/Length	Operating System
PRODUCT	(A1)	z/OS, BS2000

Access method used. Possible options:

Option	Explanation
L	CA-Librarian
M	BS2000 LMS
P	CA-Panvalet

Field Name	Type/Length	Operating System
SUB - LIBRARY	(A8)	z/VSE

Name of sublibrary.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number.

Field Name	Type/Length	Operating System
VSAM-CATALOG	(A8)	z/VSE

Name of VSAM catalog where the library is kept.



# 34

## LIB-ZAP

---

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

## Common Fields for all Operating Systems

---

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.



# 35

## LOADED-MODULES

---

■ Common Fields for all Operating Systems .....	280
■ Additional Fields Supported for z/OS .....	280
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■ Field Descriptions .....	281

<b>File</b>	23
<b>Op-Sys</b>	z/OS
<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:

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
JOB-NAME	A8		D	Required.
ENTRY-POINT	B4		D	
USE-COUNT	N3		D	
PSW	B4		D	
STATE	A7		D	

## Relevant Error Codes

Code	Text	z/OS
805	Invalid TCB address.	X

## Field Descriptions

Field Name	Type/Length	Operating System
ENTRY-POINT	(B4)	

Entry point of the module.

Field Name	Type/Length	Operating System
JOB-NAME	(A8)	

Name of the job.

Field Name	Type/Length	Operating System
LENGTH	(B3)	

Length of the module.

Field Name	Type/Length	Operating System
LOAD-ADDRESS	(B4)	

Load address of the module.

Field Name	Type/Length	Operating System
MODULE	(A8)	

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

Field Name	Type/Length	Operating System
PSW	(B4)	

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

Field Name	Type/Length	Operating System
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	Operating System
TCB-ADDRESS	(B4)	

Address of Task Control Block.

Field Name	Type/Length	Operating System
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	Operating System
USE-COUNT	(N3)	

Use count of the module.

# 36

## LOAD-MODULE

---

■ Common Fields for all Operating Systems .....	284
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<b>File</b>	44
<b>Op-Sys</b>	z/OS
<b>Statement</b>	PROCESS
<b>Task</b>	Retrieves information on a load module residing on a specified dataset.

## Common Fields for all Operating Systems

---

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.



Dictionary Field Name	F/L	Mu	DE	Remarks
IDR-TYPE	A4		D	Relevant with FUNCTION=IDR.
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	z/OS	z/VSE	BS2000
534	File is not a load library.	X		
580	Binder API :1: call, rc :2:, rsn :3:	X		
600	Unknown function.	X		
998	Member not found.	X		

## Field Descriptions

Field Name	Type/Length	Operating System
BLOCK-OFFSET	(B4)	

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

Field Name	Type/Length	Operating System
CSECT-OFFSET	(B4)	

The offset of this segment in the current CSECT.

Field Name	Type/Length	Operating System
ESD-ADDRESS	(B4)	

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

Field Name	Type/Length	Operating System
ESD-AMODE	(A3)	

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

Field Name	Type/Length	Operating System
ESD-ID	(N5)	

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

Field Name	Type/Length	Operating System
ESD-LENGTH	(N11)	

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

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

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

Field Name	Type/Length	Operating System
ESD-NAME	(A8)	

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

Field Name	Type/Length	Operating System
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	Operating System
ESD-RMODE	(A3)	

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

Field Name	Type/Length	Operating System
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	Operating System
DSNAME	(A54)	

Fully qualified dataset name.

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

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

Field Name	Type/Length	Operating System
IDR-DATA	(A40)	

Relevant with FUNCTION=IDR. The IDR data.

Field Name	Type/Length	Operating System
IDR-DATE	(A8)	

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

Field Name	Type/Length	Operating System
IDR-DATX	(A8)	

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

Field Name	Type/Length	Operating System
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	Operating System
IN-CSECT	(A8)	

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

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

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

Field Name	Type/Length	Operating System
MEMBER	(A10)	

Member name.

Field Name	Type/Length	Operating System
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	Operating System
MODULE-LENGTH	(N11)	

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

Field Name	Type/Length	Operating System
MODULE-SSI	(B4)	

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

Field Name	Type/Length	Operating System
PASSWORD	(A8)	

Password for protected dataset.

Field Name	Type/Length	Operating System
SEGMENT	(A253)	

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

Field Name	Type/Length	Operating System
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	Operating System
VOLSER	(A6)	

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

# 37

## MAIN-STORAGE

---

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■ Additional Field Supported for z/OS .....	292
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<b>File</b>	20
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	FIND
<b>Task</b>	Read storage allocated to the requested address space or partition. No modifications are possible.  In BS2000, read pages of memory pools.  In z/VSE , only the partition in which Entire System Server is running can be read.

## Common Fields for all Operating Systems

---

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 in z/OS, z/VSE.
LENGTH	N3		D	Required in z/OS,z/VSE.
OFFSET	B4		D	
AREA	A250		D	

## Additional Field Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
JOB-NAME	A8		D	Required
ADDRESS-64BIT	B8		D	



## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
POOL-ID	A54		D	Required
SCOPE	A6		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
699	Not enough main storage available.	X	X	
799	Entire System Server internal error.			X
801	Job not found.	X		
803	Cannot access data.	X	X	X

## Field Descriptions

Field Name	Type/Length	Operating System
ADDRESS	(B4)	z/OS, z/VSE, BS2000

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

In BS2000, address relative to memory pool start.

Field Name	Type/Length	Operating System
ADDRESS-64BIT	(B8)	z/OS

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	Operating System
AREA	(A250)	z/OS, z/VSE, BS2000

Location to which the storage block is returned.

Field Name	Type/Length	Operating System
JOB - NAME	(A8)	z/OS

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

Field Name	Type/Length	Operating System
LENGTH	(N3)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
OFFSET	(B4)	z/OS, z/VSE, z/VSE , BS2000

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

Field Name	Type/Length	Operating System
POOL - ID	(A54)	BS2000

Name of the memory pool.

Field Name	Type/Length	Operating System
SCOPE	(A6)	BS2000

Scope of memory pool. Possible values:

Value	Explanation
GLOBAL	Name valid system-wide. Default.
GROUP	Name valid for user ID.
LOCAL	Name valid for task.

# 38 NATPROC-LOGON

---

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■ Field Descriptions .....	297

<b>File</b>	190
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	Logon to any Entire System Server accessible via Entire Net-Work

## Common Fields for all Operating Systems

---

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 in z/OS and z/VSE.
FUNCTION	A8		D	Required.

## Additional fields Supported for z/OS, z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
NEW-PASSWORD	A32		D	
RACF-GROUP	A8		D	z/OS only.
SECURITY-MESSAGE	A80			z/OS only.
PASSPHRASE	A100		D	z/OS only.
NEW-PASSPHRASE	A100		D	z/OS only.

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
509	Logon failed - check LOGON - ID / PASSWORD	X	X	X
511	Function must be LOGON/LOGOFF	X	X	X

## Field Descriptions

Field Name	Type/Length	Operating System
CPU	(N5.2)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

Possible options:

Field Name	Type/Length	Operating System
IO-COUNT	(N7)	z/OS, z/VSE, BS2000

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	Operating System
LOGON-ID	(A8)	z/OS, z/VSE, BS2000

System user ID.

Field Name	Type/Length	Operating System
NEW-PASSPHRASE	(A100)	z/OS

New password phrase for user ID.

Field Name	Type/Length	Operating System
NEW-PASSWORD	(A32)	z/OS, z/VSE

New password for system user ID.

Field Name	Type/Length	Operating System
PASSPHRASE	(A100)	z/OS

Password phrase for user ID.

Field Name	Type/Length	Operating System
PASSWORD	(A32)	z/OS, z/VSE, BS2000

Password for system user ID.

Field Name	Type/Length	Operating System
RACF-GROUP	(A8)	z/OS

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

Field Name	Type/Length	Operating System
SECURITY-MESSAGE	(A80)	z/OS

Message returned by security interface.

# 39

## NATPROC-USERS

---

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<b>File</b>	191
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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.

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
ORIGIN-JOBNAME	A8		D	
TCB-ADDRESS	B4		D	



## Additional Fields Supported for z/OS, z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
CORE - USED	N7		D	
CORE - FREE	N7		D	

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
JOB - ID	A8		D	
SYSTEM-CODE	B2		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
600	Unknown function.	X	X	X
649	Entire System Server User not found or cannot be cancelled.	X	X	X

## Field Descriptions

Field Name	Type/Length	Operating System
ADABAS-EXTENDED-ID	(B28)	z/OS, z/VSE, BS2000

Extended Adabas user ID (28 bytes).

Field Name	Type/Length	Operating System
ADABAS-ID	(B4)	z/OS, z/VSE, BS2000

The Adabas user ID.

Field Name	Type/Length	Operating System
CORE - FREE	(N7)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
CORE - USED	(N7)	z/OS, z/VSE

Amount of storage used by task (in Kbytes).

Field Name	Type/Length	Operating System
CPU	(N5.2)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

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	Operating System
FULL - SCAN	(A3)	z/OS, z/VSE, BS2000

`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	Operating System
INTERNAL - TASK	(A3)	z/OS, z/VSE, BS2000

Possible values:

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

Field Name	Type/Length	Operating System
IO-COUNT	(N7)	z/OS, z/VSE, BS2000

Number of I/O operations so far. Under BS2000, this field always contains zero, if a Natural subtask is returned (see `FULL-SCAN='YES'`).

Field Name	Type/Length	Operating System
JOB-ID	(A8)	BS2000

TSN of internal task in alpha format.

Field Name	Type/Length	Operating System
LAST-ACTIVITY	(N5)	z/OS, z/VSE, BS2000

Time elapsed since last activity (in seconds). Under BS2000, this field always contains zero, if a Natural subtask is returned (see `FULL-SCAN='YES'`).

Field Name	Type/Length	Operating System
NATPROC-ID	(A10)	z/OS, z/VSE, BS2000

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	Operating System
ORIGIN-JOBNAME	(A8)	z/OS

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

Field Name	Type/Length	Operating System
TASK-ID	(A16)	z/OS, z/VSE, BS2000

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.

For z/VSE internal tasks, the phase name is returned in positions 1-8, and the task number is returned in positions 9-12.

Field Name	Type/Length	Operating System
TCB-ADDRESS	(B4)	z/OS

TCB address of the subtask.

Field Name	Type/Length	Operating System
USER-ID	(A8)	z/OS, z/VSE, BS2000

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
TSOS	TASK	ESYCONS	3UG0	6	481.37	51	YES
TSOS	TASK	ESYEVTM	3809	0	65.46	38	YES
TSOS	TASK	ESYMAIN	3807	0	185.95	230	YES
TSOS	TASK	ESYSERV	3808	27	203.93	2783	YES
TSOS	TASK	ESYSERV	381I	0	274.54	621	YES
TSOS	NAT	NOMXTS0006300038	381E	0	67.31	0	YES
TSOS	NAT	NOM02S0006300038	381G	0	24.32	0	YES
TSOS	NAT	NOM03S0006300038	381H	0	162.89	0	YES
TSOS	0010			37	15.44	0	NO

---

TSOS	0011	11	241.62	208	NO
DC1	0017	0	0.02	0	NO
WOS	0007	27	137.48	0	NO



# 40

## NET-OPER

---

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<b>File</b>	15
<b>Op-Sys</b>	z/OS, z/VSE
<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.

## Common Fields for all Operating Systems

---

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	



Dictionary Field Name	F/L	Mu	DE	Remarks
TOKEN-14	A15		D	
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	z/OS	z/VSE
840	VTAM operator ACB is not open.	X	X
841	VTAM error in SENDCMD.	X	X
842	Invalid VTAM command.	X	X

## Field Descriptions

Field Name	Type/Length	Operating System
COMMAND	(A80)	z/OS, z/VSE

VTAM command.

Field Name	Type/Length	Operating System
LINE	(A126)	z/OS, z/VSE

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	Operating System
LINE-LENGTH	(N3)	z/OS, z/VSE

Length of output line.

Field Name	Type/Length	Operating System
LINE-STATUS	(A3)	z/OS, z/VSE

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	Operating System
NUMBER-OF-TOKENS	(N3)	z/OS, z/VSE

Number of tokens in line.

Field Name	Type/Length	Operating System
PURGE-PREVIOUS	(A3)	z/OS, z/VSE

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	Operating System
TERMINATE-TIME	(N5)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
TIME-STAMP	(A8)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
TOKEN- <i>n</i>	(A15)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
TOKENS	(A15)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
TOKEN-VECTOR	(A225)	z/OS, z/VSE

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.



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## PRINT-DOCUMENT

---

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File	213	
Op-Sys	BS2000	
Task	Print document	

## Common Fields for all Operating Systems

---

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			
SYSTEM-CODE	B2			
IDENTIFIER	A8		D	Required if multiple update views are executing in parallel.
FUNCTION	A8		D	Required on last request.
RECORD	A253		D	Required if no DSNAME/ELEMENT is given.
RECORD-LENGTH	N3		D	
DSNAME	A54		D	Required if no RECORD is given.
ELEMENT	A64		D	
PASSWORD	A8		D	
ELEMENT-PASSWORD	A8		D	
ELEMENT-TYPE	A8		D	
ELEMENT-VERSION	A24		D	
ADDITIONAL-COPIES	A3		D	
CHARACTER-SETS	A8		D	
DELETE-AFTER-PRINT	A3		D	
FACE-SIDE	A8		D	
FORM-NAME	A8		D	
HEADER-PAGE-TEXT	A32		D	
JOB-NAME	A8		D	
LEFT-MARGIN	A4		D	
LINE-SPACING	A64		D	
PAGE-DEFINITION	A8		D	
USER-RESOURCES-FILE	A54		D	
PARAMETER-SET-1	A253		D	
PARAMETER-SET-2	A253		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
COMMAND-RESPONSE	A253			
JOB-ID	A5			

## Relevant Error Codes

Code	Text	BS2000
506	Data set is migrated	X
530	Access denied by Security facility	X
556	File is in use	X
701	DSNAME missing	X
733	User ID does not exist	X
749	PVS (CATID) not available	X
750	Invalid operand within operand list	X
798	Task was not started under TSOS.	X
799	Entire System Server internal error	X
809	Subsystem not active	X
856	Operator unable to mount volume	X
883	Dataset is full	X
889	Permanent I/O error while writing dataset	X
903	Dynamic allocation failed for temporary dataset	X
991	Unknown product	X
998	Member not found	X

## Field Descriptions

Field Name	Type/Length	Operating System
ADDITIONAL-COPIES	A3	BS2000

Number of additional copies.

ADDITIONAL-COPIES=0|integer1..255

See the description of the `ADDITIONAL-COPIES` parameter of the BS2000 command `PRINT-DOCUMENT`.

Field Name	Type/Length	Operating System
CHARACTER-SETS	A8	BS2000

Name of fonts or font pools.

CHARACTER-SETS=\*BY-EXTENDED-NAME(<alphanum\_name\_1...8>)

See the description of the `CHARACTER-SETS` parameter of the BS2000 command `PRINT-DOCUMENT`.

Field Name	Type/Length	Operating System
COMMAND-RESPONSE	A253	BS2000

`PRINT-DOCUMENT` command response.

Field Name	Type/Length	Operating System
DELETE-AFTER-PRINT	A3	BS2000

Delete file after print: YES or NO.

Field Name	Type/Length	Operating System
DSNAME	A54	BS2000

Name of the file to be printed out.

Note that `FUNCTION=CLOSE` is required to start the printout.

Field Name	Type/Length	Operating System
ELEMENT	A64	BS2000

Name of the LMS element to be printed out.

Field Name	Type/Length	Operating System
ELEMENT-PASSWORD	A8	BS2000

Password for protected LMS element.



Field Name	Type/Length	Operating System
ELEMENT-TYPE	A8	BS2000

Type of LMS element to be printed out.

Field Name	Type/Length	Operating System
ELEMENT-TYPE	A24	BS2000

Version of LMS element to be printed out.

Field Name	Type/Length	Operating System
FACE-SIDE	A8	BS2000

Face side identifier.

See the description of the FACE-SIDE parameter of the BS2000 command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
FORM-NAME	A8	BS2000

Name of form.

See the description of the FORM-NAME parameter of the BS2000 command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
FUNCTION	A8	BS2000

Function to be performed.

Possible options:

blank Default. Print a record.

CLOSE All records have been written. Specify this on the last request.

Field Name	Type/Length	Operating System
HEADER-PAGE-TEXT	A32	BS2000

Used for system exits.

See the description of the HEADER-PAGE-TEXT parameter of the BS2000 command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
JOB-ID	A5	BS2000

Returned for FUNCTION=CLOSE.

Field Name	Type/Length	Operating System
JOB-NAME	A8	BS2000

Name of the job under which the output is to be printed.

Field Name	Type/Length	Operating System
LEFT-MARGIN	A4	BS2000

Left margin of text.

```
LAYOUT-CONTROL=*PARAMETERS(LEFT-MARGIN=value_1)
```

See the description of the LEFT-MARGIN parameter of the BS2000 command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
LINE-SPACING	A64	BS2000

File contains ASA print control characters.

```
DOCUMENT-FORMAT=*TEXT(LINE-SPACING=value)
```

For an explanation, see the description of the LINE-SPACING parameter of the BS2000 command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
PAGE-DEFINITION	A8	BS2000

Page definition to be used for print.

```
PAGE-DEFINITION=*STD/<integer_1...50000>/<alphanum_name_1...8>
```

For an explanation, see the description of the PAGE-DEFINITION parameter of the BS2000 command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
PARAMETER-SET-1	A253	BS2000

Extra operands for command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
PARAMETER-SET-2	A253	BS2000

Extra operands for command PRINT-DOCUMENT.

Field Name	Type/Length	Operating System
PASSWORD	A8	BS2000

Password of protected file.

Field Name	Type/Length	Operating System
RECORD	A253	BS2000

Record to be printed out.

Field Name	Type/Length	Operating System
RECORD-LENGTH	N3	BS2000

Length of record.

Field Name	Type/Length	Operating System
USER-RESOURCES-FILE	A54	BS2000

Fully qualified name of a user file containing all resources.

```
USER-RESOURCES-FILE=*STD/<filename_1...44>
```

## PRINT-DOCUMENT Programming Notes

PRINT-DOCUMENT is an UPDATE view, that is, data is transmitted from the Natural program (client side) to ESY (server side).

The Entire System Server view PRINT-DOCUMENT 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 PRINT-DOCUMENT VIEW OF PRINT-DOCUMENT
2 ERROR-CODE
2 ERROR-TEXT
2 SYSTEM-MESSAGE-CODE
2 SYSTEM-CODE
2 COMMAND-RESPONSE
2 JOB-ID
```

These fields in a DEFINE DATA statement are the fields returned from the PRINT-DOCUMENT view in Entire System Server to the calling Natural program.

Defining other fields in DDM is not critical, but the access to these fields can lead to unpredictable results.

# 42

## READ-FILE

---

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<b>File</b>	2
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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, z/VSE/Librarian, LMS). Using the <code>SCAN</code> fields, only those records containing the specified string are returned.

## Common Fields for all Operating Systems

---

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 <code>SCAN-TYPE=A</code> .
SCAN-COLUMN-FROM	N5		D	Relevant with <code>SCAN-TYPE=A</code> .
SCAN-COLUMN-TO	N5		D	Relevant with <code>SCAN-TYPE=A</code> .
TIME-LIMIT	N5		D	
DIRECT	A3		D	

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLSER	A6		D	Required in z/VSE. In z/OS only if dataset is not cataloged.
MEMBER	A10		D	
PRODUCT	A1		D	
KEY	A253		D	
BLOCK-TTR	B3		D	
BLOCK-TOKEN	B4		D	
GENERATION	N9		D	
OPTIONS	A80		D	
BLOCK-NUMBER	N9		D	
SPANNED	A8		D	

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLSER	A6		D	Required in z/VSE. In z/OS only if dataset is not cataloged.
MEMBER	A10		D	
MEMBER-TYPE	A8		D	
LIBRARY	A8		D	Required if DSNAME not specified.
SUB-LIBRARY	A8		D	Required if Librarian file.
VSAM-CATALOG	A8		D	Required if VSAM-controlled Librarian file.
LRECL	B2		D	Relevant with RECFM=F.
BLKSIZE	B2		D	
RECFM	A2		D	
BLOCK-NUMBER	N9		D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
PRODUCT	A1		D	
KEY	A253		D	
DIRECTION	A1		D	
ELEMENT	A64		D	
ELEMENT-RECORD-TYPE	N3		D	
ELEMENT-TYPE	A8		D	
ELEMENT-VERSION	A24		D	
ELEMENT-PASSWORD	A8		D	
SYSTEM-CODE	B2			

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
500	VSAM error.	X	X	
530	Access denied by Security Facility.			X
531	Password missing or incorrect.			X
533	Requested number or records scanned.	X	X	
537	Time limit reached.	X	X	X
541	Member generation not found in directory.	X		
551	MEMBER not specified.	X	X	X
556	File is in use.	X		X
565	Syntax error in dataset name.			X
673	Access error due to FILETABLE=STATIC.		X	
674	VTOC error reading format-3 labels.		X	
675	:1: not supported.		X	
676	Not first volume of multi-volume file.		X	
687	Bad variable record.	X	X	
692	You are not permitted to access member.			X
697	LIBRARY/SUBLIB not found.		X	
698	Internal Librarian error.		X	
699	Not enough main storage available.	X	X	X



Code	Text	z/OS	z/VSE	BS2000
700	Invalid value specified (DSORG RECFM/TYPE).			X
701	DSNAME missing.	X	X	X
772	Requested dataset not found.			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
854	Permanent I/O error.			X
856	Operator unable to mount volume.			X
872	Record format not supported.			X
873	Record length missing.			X
874	Record length > LRECL.		X	X
877	VSAM (SHOWCAT) processing error		X	
881	Error occurred while opening file.			X
882	Error occurred while closing file.			X
899	Permanent I/O error while reading dataset.	X	X	X
981	Invalid value specified (BLKCTRL/BLKSIZE/LRECL).		X	X
982	Error during use of ISAM-key.			X
985	Access to tape file not allowed.			X
991	Unknown product.	X		X
993	OPEN error.	X	X	
997	File not PDS/Sequential.	X		
998	Member not found.	X	X	X

## Field Descriptions

Field Name	Type/Length	Operating System
BLKSIZE	(B2)	z/VSE

Block size of dataset.

Field Name	Type/Length	Operating System
BLOCK-LENGTH	(N5)	z/OS, z/VSE, BS2000

Length of block.

Field Name	Type/Length	Operating System
BLOCK-NUMBER	(N9)	z/OS, z/VSE

Number of block.

Field Name	Type/Length	Operating System
BLOCK-TTR	(B3)	z/OS

TTR of the block which was read.

Field Name	Type/Length	Operating System
BLOCK-TOKEN	(B4)	z/OS

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	Operating System
DIRECT	(A3)	z/OS, z/VSE, BS2000

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.  In BS2000: SAM files with RECFORM=F are read directly according to RECORD-NUMBER. PAM files and LMS elements are always read directly, if a RECORD-NUMBER is specified.

Field Name	Type/Length	Operating System
DIRECTION	(A1)	BS2000

Possible values:

Value	Explanation
B	Read backwards (ISAM files only)
F	Read forward

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

Fully qualified dataset name.

Field Name	Type/Length	Operating System
ELEMENT	(A64)	BS2000

Name of LMS element to be read.

Field Name	Type/Length	Operating System
ELEMENT-TYPE	(A8)	BS2000

Type of LMS element to be read.

Types C and L are currently not supported.

Field Name	Type/Length	Operating System
ELEMENT-PASSWORD	(A8)	BS2000

Password, for protected LMS element (LMS V2 or above).

Field Name	Type/Length	Operating System
ELEMENT-RECORD-TYPE	(N3)	BS2000

Record type (LMS only)

Field Name	Type/Length	Operating System
ELEMENT-VERSION	(A24)	BS2000

Version of LMS element to be read.

Field Name	Type/Length	Operating System
END-OF-FILE	(A3)	z/OS, z/VSE, BS2000

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	Operating System
GENERATION	(N9)	z/OS

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

Field Name	Type/Length	Operating System
KEY	(A253)	z/OS, BS2000

ISAM or VSAM key.

Field Name	Type/Length	Operating System
LIBRARY	(A8)	z/VSE

Name of library.

Field Name	Type/Length	Operating System
LRECL	(B2)	z/VSE

Required with RECFM=F. Logical record length. Default is 80.

Field Name	Type/Length	Operating System
MEMBER	(A10)	z/OS, z/VSE

If the dataset is a PDS, member name.

Field Name	Type/Length	Operating System
MEMBER-TYPE	(A8)	z/VSE

Member type.

Field Name	Type/Length	Operating System
OPTIONS	(A80)	z/OS

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

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/OS, z/VSE, BS2000

Password for protected dataset.

Field Name	Type/Length	Operating System
POSITION	(N5)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
PRODUCT	(A1)	z/OS, BS2000

Access mode used. Possible values:

Value	Explanation
L	CA-Librarian
M	BS2000 LMS
P	CA-Panvalet

Field Name	Type/Length	Operating System
RECFM	(A2)	z/VSE

Record format of dataset. Default is `F`.

Field Name	Type/Length	Operating System
RECORD	(A253)	z/OS, z/VSE, BS2000

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	Operating System
RECORD-LENGTH	(N5)	z/OS, z/VSE, BS2000

Length of entire record (not the segment length).

Field Name	Type/Length	Operating System
RECORD-NUMBER	(N9)	z/OS, z/VSE, BS2000

Record position within the dataset.

For BS2000, in case of a PAM file, the PAM block number must be specified here.

Field Name	Type/Length	Operating System
SCAN	(A3)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
SCAN-COLUMN-FROM	(N5)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
SCAN-COLUMN-TO	(N5)	z/OS, z/VSE, BS2000

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	Operating System
SCAN-LENGTH	(N3)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
SCAN-LIMIT	(N7)	z/OS, z/VSE, BS2000

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	Operating System
SCAN-TYPE	(A1)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
SEGMENT-LENGTH	(N3)	z/OS, z/VSE, BS2000

Length of segment.

Field Name	Type/Length	Operating System
SEGMENT-NUMBER	(N5)	z/OS, z/VSE, BS2000

Segment number within record.

Field Name	Type/Length	Operating System
SPANNED	(A8)	z/OS

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	Operating System
SUB-LIBRARY	(A8)	z/VSE

Name of sublibrary.

Field Name	Type/Length	Operating System
TIME-LIMIT	(N5)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number (not relevant for BS2000).

Field Name	Type/Length	Operating System
VSAM-CATALOG	(A8)	z/VSE

Name of VSAM catalog where the library is kept.

If you want to read a given dataset / member it may happen, that the dataset / member is empty. Then the following applies:

- If field END-OF-FILE is in DEFINE DATA clause, then exactly one record is returned also for empty datasets / members containing END-OF-FILE=YES.

- If field `END-OF-FILE` is NOT in define data clause, then no record are returned and the `NO RECORDS FOUND` clause apply.

## Default Order of Data Returned

---

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

## Programming notes BS2000

---

Sequential files currently in creation are exclusively locked for the creating task and cannot be read by any other task. However, locked files can be accessed if the Entire System Server startup parameter `READ-LOCKED-FILE` is set to `YES` or was not specified, and class 2 system parameter `SVC79` allows the usage of `SVC 79`. The Entire System Server will make a copy of the original data and use this file for `READ-FILE`. This technique is currently implemented for SAM files only.



# 43

## READ-SPOOL

---

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<b>File</b>	12
<b>Op-Sys</b>	z/OS, z/VSE
<b>Statement</b>	FIND
<b>Task</b>	Read SYSOUT from spool. This view retrieves records from JES (z/OS) or POWER (z/VSE ). Use the SPOOL-FILES view to retrieve a list of spool files relating to the specified job before executing READ-SPOOL.

## Common Fields for all Operating Systems

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	

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
DATA-SET	N5		D	
SEGMENT-NUMBER	N3		D	
SEGMENT-LENGTH	N3		D	

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
CONTROL-RECORDS	A3		D	
RECORD-TYPE	B1		D	This field is only relevant if CONTROL-RECORDS=YES.
INTERNAL-RECORD-NUMBER	N7		D	
SEGMENT-NUMBER	N3		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE
533	Requested number of records scanned.	X	X
537	Time limit reached.	X	X
680	Job/Output is protected.		X
681	Job/Output is active.		X
682	Job/Output not dispatchable.		X
699	GETVIS storage request has failed.		X
711	Logical Error occurred in Common JES Interface.	X	
712	Request to Common JES Interface failed.	X	
713	Jobname and Job ID missing. One of them required.	X	
715	Duplicate jobnames found. Please specify job ID.	X	
719	Unable to :1: SYSOUT dataset.	X	
720	Invalid type. Must be CC/RD/LS/PU/XM.		X
722	Requested dataset not found.	X	
723	Requested job in input queue.	X	
724	Requested job not found.	X	X

Code	Text	z/OS	z/VSE
728	You are not allowed to see this job.	X	
731	Error occurred during spool get.	X	
781	Unable to obtain storage for work area extension.	X	
830	JES interface is not active.	X	
830	POWER interface is not active.		X

## Field Descriptions

---

Field Name	Type/Length	Operating System
CONTROL-RECORDS	(A3)	z/VSE

Specifies whether control records are to be returned. Possible options:

Option	Explanation
NO	Control records are not returned.
YES	Default. Control records are returned.

Field Name	Type/Length	Operating System
DATA-SET	(N5)	z/OS

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

Field Name	Type/Length	Operating System
DATA-SET-KEY	(N11)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
INTERNAL-RECORD-NUMBER	(N7)	z/VSE

Internal record number as returned by POWER.

Field Name	Type/Length	Operating System
JOB - NAME	(A8)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
JOB - ID	(A8)	z/OS, z/VSE

Job number in alphanumeric format.

Field Name	Type/Length	Operating System
JOB - NUMBER	(N7)	z/OS, z/VSE

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	Operating System
POSITION	(B1)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
RECORD	(A253)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
RECORD - LENGTH	(N5)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
RECORD - NUMBER	(N7)	z/OS, z/VSE

Relative record number from start of dataset.

Field Name	Type/Length	Operating System
RECORD-TYPE	(B1)	z/VSE

Record type of spool record. This field is relevant if `CONTROL-RECORDS=YES`. This field contains the type of record returned. Possible values:

Option	Explanation
X'00'	Normal data record.
X'05'	Control command record.

Field Name	Type/Length	Operating System
SCAN	(A3)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
SCAN-COLUMN-FROM	(N3)	z/OS, z/VSE

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	Operating System
SCAN-COLUMN-TO	(N3)	z/OS, z/VSE

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	Operating System
SCAN-LENGTH	(N3)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
SCAN-LIMIT	(N7)	z/OS, z/VSE

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	Operating System
SCAN-TYPE	(A1)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
SEGMENT-LENGTH	(N3)	z/OS

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	Operating System
SEGMENT-NUMBER	(N3)	z/OS, z/VSE

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

z/OS: Segment number within record.

z/VSE: Segment number of spool record to be retrieved, if the output is segmented.

Field Name	Type/Length	Operating System
TIME-LIMIT	(N5)	z/OS, z/VSE

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	Operating System
TYPE	(A2)	z/OS, z/VSE

Spool dataset type. Possible values:

z/OS	
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.

z/VSE	
CC	Summary of job steps and completion codes.
LS	List queue.
PU	Punch queue.
RD	Reader queue.
XM	Transmit queue.

## Default Order of Data Returned

---

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



# 44

## READ-UNIX-FILE

---

■ Fields (z/OS only) .....	342
■ Relevant Error Codes .....	342
■ Field Descriptions .....	343

<b>File</b>	96
<b>Op-Sys</b>	z/OS
<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 (z/OS only)

---

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

## Field Descriptions

Field Name	Type/Length	Operating System
NODE	(N5.0)	z/OS

D Node ID (DBID).

Field Name	Type/Length	Operating System
ERROR-CODE	(N3.0)	z/OS

Message code.

Field Name	Type/Length	Operating System
ERROR-TEXT	(A58)	z/OS

Text describing error.

Field Name	Type/Length	Operating System
NODE-NAME	(A16)	z/OS

LPAR where node is running.

Field Name	Type/Length	Operating System
SYSTEM-MESSAGE-CODE	(A10)	z/OS

Code of system message.

Field Name	Type/Length	Operating System
PATH	(A128)	z/OS

Path of file to be read.

Field Name	Type/Length	Operating System
RECORD	(A253)	z/OS

Record to be read.

Field Name	Type/Length	Operating System
RECORD-LENGTH	(N3.0)	z/OS

Length of record. Required.

# 45

## RECEIVE-EMAIL

---

■ Fields .....	346
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<b>File</b>	70
<b>Op-Sys</b>	z/OS
<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	Operating System
DATE	(A64)	z/OS

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	Operating System
FUNCTION	(A8)	z/OS

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	Operating System
LIST-NUM-MAILS	(N3.0)	z/OS

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	Operating System
LIST-NUM-MAILS-START	(N6.0)	z/OS

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	Operating System
MAIL-SEQUENCE-NUMBER	(N6.0)	z/OS

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	Operating System
MESSAGE-ID	(A128)	z/OS

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	Operating System
MAILSERVER-RESPONSE	(A128 )	z/OS

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

Field Name	Type/Length	Operating System
NUMBER-MAILS	(N5.0)	z/OS

Number of mails contained in the mailbox



Field Name	Type/Length	Operating System
NUMBER-NEW-MAILS	(N5.0)	z/OS

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

Field Name	Type/Length	Operating System
PASSWORD	(A64)	z/OS

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

Field Name	Type/Length	Operating System
RECIPIENTS	(A250)	z/OS

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	Operating System
RECORD	(A253)	z/OS

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	Operating System
SENDER-MAIL	(A64)	z/OS

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

Field Name	Type/Length	Operating System
SENDER-Name	(A64)	z/OS

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

Field Name	Type/Length	Operating System
STATUS	(A4)	z/OS

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	Operating System
SUBJECT	(A128)	z/OS

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

Field Name	Type/Length	Operating System
TRACE	(A4)	z/OS

If Software AG 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	Operating System
UID	(N12.0)	z/OS

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	Operating System
USERID	(A64)	z/OS

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*.

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## RESOURCE-CONTROL

---

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<b>File</b>	32
<b>Op-Sys</b>	z/OS
<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.

## Common Fields for all Operating Systems

---

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	z/OS
600	Unknown operation	X
610	QNAME missing	X
611	QNAME cannot start with SYS	X
612	RNAME missing	X
613	RNAME length missing	X
614	Resource is in use	X

Code	Text	z/OS
615	Resource held by another task	X
616	Error in GQSCAN routine	X

## Field Descriptions

Field Name	Type/Length	Operating System
ASID	(N4)	

The address space ID that enqueued.

Field Name	Type/Length	Operating System
CONTROL	(A1)	

Type of control. Possible values:

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

Field Name	Type/Length	Operating System
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	Operating System
JOB - NAME	(A8)	

The job that enqueued.

Field Name	Type/Length	Operating System
QNAME	(A8)	

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

Field Name	Type/Length	Operating System
RESERVE - UNIT	(A3)	

The UCB address of the `RESERVE`.

Field Name	Type/Length	Operating System
RNAME	(A250)	

The minor name of the resource. See example below.

Field Name	Type/Length	Operating System
RNAME - LENGTH	(N3)	

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

Field Name	Type/Length	Operating System
SCOPE	(A8)	

Possible values:

Value	Explanation
RESERVE	
RESPEND	Reserve pending.
STEP	
SYSTEM	
SYSTEMS	

Field Name	Type/Length	Operating System
STATUS	(A4)	

Possible values:

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

Field Name	Type/Length	Operating System
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	DL0DTXGL
WKK.SYSF.SOURCE	ASMJ3
BROKER.IV100.SAGNA.JCL	\$README
BF.COMN.C.SOURCE	WRTR
BF.COMN.C.SOURCE	CCLA
USARMK.SAGNA.SOURCE	COPYPDS





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## SEND-EMAIL

---

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<b>File</b>	212
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	This view provides the support for sending electronic mails.

## Common Fields for all Operating Systems

---

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.

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.	X	X	X
675	HOST-CODE-PAGE not supported	X	X	X
699	Not enough main storage available.	X	X	
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
809	Subsystem not active.	X	X	X
895	<i>RECIPIENT</i> must be specified.	X	X	X
895	<i>SUBJECT</i> must be specified.	X	X	X
896	Error occurred when executing E-Mail.			X
897	Mailer response: :1:.	X	X	X
986	No or not enough space for <i>E-mail Control Block</i> .			X
986	No or not enough space for <i>E-mail Data Block</i> .			X

## Field Descriptions

Field Name	Type/Length	Operating System
ATTACHMENT-SUFFIX	(A4)	z/OS, z/VSE, BS2000

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	Operating System
BCC-RECIPIENT	(A128) M20	z/OS, z/VSE, BS2000

Field Name	Type/Length	Operating System
BCC-RECIPIENT	(A128) M20	z/OS, z/VSE, BS2000

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	Operating System
CC-RECIPIENT	(A128) M20	z/OS, z/VSE, BS2000

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	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
EXTENDED-TEXT	(A250) M60	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
HOST-CODE-PAGE	(A8)	z/OS, z/VSE, BS2000

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).

Possible options for BS2000:

Option	Explanation
EDF03DRV	Coded character set (CCS) EBCDIC.DF.03 ISO-7-bit German
EDF03IRV	Coded character set (CCS) EBCDIC.DF.03 ISO-7-bit International
EDF041	Coded character set (CCS) EBCDIC.DF.04 ISO-8-bit International
EDF04DRV	Coded character set (CCS) EBCDIC.DF.04 ISO-8-bit German

Possible options for z/OS, z/VSE:

Option	Explanation
1140	EBCDIC code page 1140 (Brazil, Canada, Netherlands, Portugal, U.S.)
1141	EBCDIC code page 1141 (Austria, Germany.)
1142	EBCDIC code page 1142 (Denmark, Norway)
1143	EBCDIC code page 1143 (Finland, Sweden)
1144	EBCDIC code page 1144 (Italy)
1145	EBCDIC code page 1145 (Latin America, Spain)
1146	EBCDIC code page 1146 (United Kingdom)
1147	EBCDIC code page 1147 (France)
1148	EBCDIC code page 1148 (International)
1149	EBCDIC code page 1149 (Iceland)
114A	EBCDIC code page 114A (Israel) z/OS

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

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	Operating System
FROM-NAME	(A128)	z/OS, z/VSE, BS2000

`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	Operating System
IDENTIFIER	(A8)	z/OS, z/VSE, BS2000

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

Field Name	Type/Length	Operating System
IGNORE-RCPT-REJECT	(A3)	z/OS, z/VSE, BS2000

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	Operating System
PASSWORD	(A8)	z/OS, z/VSE, BS2000

Password for protected dataset.

Field Name	Type/Length	Operating System
RECIPIENT	(A128) M20	z/OS, z/VSE, BS2000

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	Operating System
RECORD	(A253)	z/OS, z/VSE, BS2000

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	Operating System
REPLY-TO	(A128)	z/OS, z/VSE, BS2000

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	Operating System
SUBJECT	(A253)	z/OS, z/VSE, BS2000

Specifies the subject of the mail.

Field is required for the first SEND-EMAIL request.

### 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. The maximum size of one e-mail is limited to 1MB on BS2000.



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 sections *Installation for z/OS* (Step 15), *Installation for z/VSE* (Step 12), *Installation for BS2000* (Step 9) in the Entire System Server *Installation and Customization* documentation for additional information about e-mail installation requirements.

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLSER	A6		D	Only if dataset is not cataloged.
MEMBER	A10		D	

### Field Descriptions

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number (not relevant for BS2000).

Field Name	Type/Length	Operating System
MEMBER	(A10)	z/OS, z/VSE

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

## Additional Fields Supported for z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLSER	A6			Required in z/VSE.
MEMBER	A10			
MEMBER - TYPE	A8			
LIBRARY	A8			Required if DSNAME not specified.
SUB - LIBRARY	A8			Required if Librarian file.

### Field Descriptions

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number (not relevant for BS2000).

Field Name	Type/Length	Operating System
MEMBER	(A10)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
MEMBER - TYPE	(A8)	z/VSE

Member type.

Field Name	Type/Length	Operating System
LIBRARY	(A8)	z/VSE

Name of library.

Field Name	Type/Length	Operating System
SUB - LIBRARY	(A8)	z/VSE

Name of sublibrary.

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
ELEMENT	A64			
ELEMENT-TYPE	A8			
ELEMENT-VERSION	A24			
ELEMENT-PASSWORD	A8			

### Field Descriptions

Field Name	Type/Length	Operating System
ELEMENT	(A64)	BS2000

Name of LMS element to be attached to this mail.

Field Name	Type/Length	Operating System
ELEMENT-TYPE	(A8)	BS2000

Type of LMS element to be attached to this mail.

Types C and L are currently not supported.

Field Name	Type/Length	Operating System
ELEMENT-PASSWORD	(A8)	BS2000

Password, for protected element (LMS V2 or above).

Field Name	Type/Length	Operating System
ELEMENT-VERSION	(A24)	BS2000

Version of LMS element to be attached to this mail.



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## SEND-MESSAGE

---

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<b>File</b>	19
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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.

## Common Fields for all Operating Systems

---

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 in z/OS, z/VSE.  In BS2000, either DESTINATION is required or PROCESSOR-NAME and TERMINAL-NAME.
PREFIX	A3		D	
DESTINATION-TYPE	A8		D	
STATUS	A8		D	
NOLOG	A8		D	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
URGENT	A3		D	Only relevant if your site runs Net-Pass.

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
PROCESSOR-NAME	A8		D	Required if no DESTINATION is specified.
TERMINAL-NAME	A8		D	Required if no DESTINATION is specified.

## 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	z/OS	z/VSE	BS2000
630	Console not defined or not active.	X	X	X
750	Invalid operand within operand list.			X
766	User ID or terminal ID missing.			X
799	Entire System Server internal error.			X
809	Subsystem not active.			X
983	DESTINATION-TYPE :1: not supported by BS2000.			X
986	No or not enough space for COMMAND IN MP.			X

## Field Descriptions

Field Name	Type/Length	Operating System
DESTINATION	(A8)	z/OS, z/VSE, BS2000

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.

For BS2000, the destination can also be a TRANSDATA station. This must be specified in the TERMINAL-NAME and PROCESSOR-NAME fields.

Field Name	Type/Length	Operating System
DESTINATION-TYPE	(A8)	z/OS, z/VSE, BS2000

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.

BS2000:

Destination	Explanation
TIAM	To TIAM user only.

Default in z/OS is TSO and Com-plete user (if the user is not logged on to Com-plete, the message is sent to TSO).

Default in BS2000: TIAM.

Field Name	Type/Length	Operating System
MESSAGE	(A79)	z/OS, z/VSE, BS2000

Message text to be sent. This text will be prefixed by: Message from *userid* (see the PREFIX field).

Field Name	Type/Length	Operating System
NOLOG	(A8)	z/OS, z/VSE, BS2000

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	Operating System
PREFIX	(A3)	z/OS, z/VSE, BS2000

Message prefix indicator. Possible values:



Value	Explanation
NO	Messages have no prefix.
YES	Messages will be prefixed by the string <i>Message from userid</i> .

Field Name	Type/Length	Operating System
PROCESSOR-NAME	(A8)	BS2000

Processor name as defined in TRANSDATA. Together with the field `TERMINAL-NAME`, the processor name identifies the station within TRANSDATA, if the destination is a terminal. Field `DESTINATION` must be left blank in this case.

Field Name	Type/Length	Operating System
STATUS	(A8)	z/OS, z/VSE, BS2000

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	Operating System
TERMINAL-NAME	(A8)	BS2000

Name of the station in TRANSDATA to which the message is to be sent. The station must be connected to TIAM (see also the field `PROCESSOR-NAME`).

Field Name	Type/Length	Operating System
URGENT	(A3)	z/OS

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.



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## SPOOL-FILES

---

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<b>File</b>	36	
<b>Op-Sys</b>	z/OS, BS2000	
<b>Statement</b>	FIND / PROCESS	
<b>Task</b>	z/OS:	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.
	BS2000:	Displays information concerning a print job.

## Common Fields for all Operating Systems

---

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 for z/OS.
JOB-NUMBER	N7		D	Required for BS2000 if JOB-ID is not supplied.
COPIES	N3		D	
FORM	A8		D	
CHARS	A16		D	
DSNAME	A54		D	
CLASS	A4		D	

## Additional fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	

Dictionary Field Name	F/L	Mu	DE	Remarks
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	
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	

## Additional fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
CONTROL-OPTION	A16			
DESTINATION	A8			
DEVICE	A8			
FORM-OVERLAY-BUFFER	A8			
FORM-OVERLAY-BUFFER-SIZE	N3			
NUMBER-OF-PRINTED-LINES	N6			

Dictionary Field Name	F/L	Mu	DE	Remarks
NUMBER-OF-PRINTED-PAGES	N6			
ORIGINATOR-JOB-ID	A8			
ORIGINATOR-TSN	N5			
PRINT-ELEMENT	A64			
PRINT-ELEMENT-TYPE	A8			
PRINT-ELEMENT-VERSION	A24			
PRINT-ERROR-MESSAGE	A10			
PRIORITY	N3			
ROTATION	A8			
SIZE	A6			
STATUS	A9			
TYPE-NUMBER	N1			
USER	A8			
DIA	A2			
JOB-ID	A8		D	Required if JOB-NUMBER is not supplied.

## Relevant Error Codes

---

Code	Text	z/OS	BS2000
670	Error in subsystem request	X	
671	Invalid NEW-CLASS	X	
711	Logical Error occurred in Common JES Interface.	X	
712	Request to Common JES Interface failed.	X	
713	Jobname and Job ID missing. One of them required.	X	
715	Duplicate jobnames found. Please specify Job ID.	X	
719	Unable to :1: SYSOUT dataset.	X	
720	Invalid TYPE.	X	
722	Dataset not found	X	
724	Requested job not found	X	X
728	You are not allowed to see this job	X	X
778	Not APF authorized	X	
781	Unable to obtain storage for work area extension.	X	
799	Entire System Server internal error		X
820	Unknown command	X	
830	JES interface not active	X	

Code	Text	z/OS	BS2000
833	You are not allowed to alter this job	X	
876	No NEW-field for CHANGE request.	X	
988	Invalid task type detected		X

## Field Descriptions

Field Name	Type/Length	Operating System
ACTION	(A20)	z/OS

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	Operating System
BURST	A3	z/OS

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	Operating System
COMPACT	A8	z/OS

The symbolic name of a compaction table.

Field Name	Type/Length	Operating System
CHARS	(A16)	z/OS, BS2000

Four groups of four bytes each taken from JCL: (CHARS=AAAA,BBBB,CCCC,DDDD).

Field Name	Type/Length	Operating System
CLASS	(A4)	z/OS, BS2000

Output class. For valid classes, ask your system programmer.

Field Name	Type/Length	Operating System
CONTROL-OPTION	(A16)	BS2000

CONTROL parameter of spool-out job.

Field Name	Type/Length	Operating System
COPIES	(N3)	z/OS, BS2000

Number of copies.

Field Name	Type/Length	Operating System
DATA-SET	(N5)	z/OS

Dataset number.

Field Name	Type/Length	Operating System
DATA-SET-KEY	(N11)	z/OS

Dataset key.

Field Name	Type/Length	Operating System
DDNAME	(A8)	z/OS

DDname of this dataset given in the JCL.

Field Name	Type/Length	Operating System
DESTINATION	(A8)	BS2000

Name of device pool.

Field Name	Type/Length	Operating System
DESTINATION-NODE	(N5)	z/OS

Node number of the destination JES system.

Field Name	Type/Length	Operating System
DESTINATION-REMOTE	(N5)	z/OS

Destination ID on the destination node.



Field Name	Type/Length	Operating System
DEVICE	(A8)	BS2000

Output device.

Field Name	Type/Length	Operating System
DIA	(A2)	BS2000

Name of slide for laser printer.

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, BS2000

Name of spool output dataset. In BS2000: name of printed file.

Field Name	Type/Length	Operating System
FCB	(A4)	z/OS

Forms control buffer.

Field Name	Type/Length	Operating System
FLASH	(A4)	z/OS

Flash for 3800.

Field Name	Type/Length	Operating System
FORM	(A8)	z/OS, BS2000

Form of the dataset to be printed.

Field Name	Type/Length	Operating System
FORMDEF	A6	z/OS

Name of library member containing statements to specify forms properties for Print Services Facility (PSF).

Field Name	Type/Length	Operating System
FORM-OVERLAY-BUFFER	(A8)	BS2000

Name of form overlay buffer.

Field Name	Type/Length	Operating System
FORM-OVERLAY-BUFFER-SIZE	(N3)	BS2000

Size of form overlay buffer.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS

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	Operating System
GROUP-ID	(A20)	z/OS

Output group id for SYSOUT data set (returned for JES2 only).

Field Name	Type/Length	Operating System
HOLD	(A3)	z/OS

Possible values:

Value	Explanation
NO	Dataset is not held.
YES	Dataset is held.

Field Name	Type/Length	Operating System
IDENTIFIER	(A44)	z/OS

Unique identifier for the specified dataset.

Field Name	Type/Length	Operating System
JOB-ID	(A8)	BS2000

TSN of job.

Field Name	Type/Length	Operating System
JOB-NAME	(A8)	z/OS, BS2000

Name of job from job card.

Field Name	Type/Length	Operating System
JOB-NUMBER	(N7)	z/OS, BS2000

Job number assigned by the spooling system.

Field Name	Type/Length	Operating System
LINECT	N3	z/OS

The maximum number of lines JES2 is to print on each page.

Field Name	Type/Length	Operating System
LRECL	(N3)	z/OS

Record length of the spool file.

Field Name	Type/Length	Operating System
NEW-CLASS	(A1)	z/OS

New class specified with the `CHANGE` or `RELEASE` function.

Field Name	Type/Length	Operating System
NEW-DESTINATION	(A8)	z/OS

New destination for a `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length	Operating System
NEW-FORM	(A8)	z/OS

New form for `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length	Operating System
NEW-USERID	A8	z/OS

New user ID for `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length	Operating System
NEW-WRITER	(A8)	z/OS

New writer program name for `SYSOUT` dataset. Relevant with `FUNCTION=CHANGE`.

Field Name	Type/Length	Operating System
NUMBER-OF-PRINTED-LINES	(N6)	BS2000

Number of printed lines.

Field Name	Type/Length	Operating System
NUMBER-OF-PRINTED-PAGES	(N6)	BS2000

Number of printed pages.

Field Name	Type/Length	Operating System
ORIGINATOR-JOB-ID	(A8)	BS2000

TSN of originator task.

Field Name	Type/Length	Operating System
ORIGINATOR-TSN	(N5)	BS2000

TSN of originator task.

Field Name	Type/Length	Operating System
OUTDISP	(A8)	z/OS

Output disposition for SYSOUT data set (returned for JES2 only). Possible values are WRITE, HOLD, KEEP, LEAVE and PURGE.

Field Name	Type/Length	Operating System
PAGEDEF	A6	z/OS

Name of library member containing statements to specify page properties for Print Services Facility (PSF).

Field Name	Type/Length	Operating System
PRINT-ELEMENT	(A64)	BS2000

Name of printed element.

Field Name	Type/Length	Operating System
PRINT-ELEMENT-TYPE	(A8)	BS2000

Type of printed element.

Field Name	Type/Length	Operating System
PRINT-ELEMENT-VERSION	(A24)	BS2000

Version of printed element.

Field Name	Type/Length	Operating System
PRINT-ERROR-MESSAGE	(A10)	BS2000

Error message issued during PRINT. Only relevant for task type 7.

Field Name	Type/Length	Operating System
PRINT-MODE	A4	z/OS

Possible values:

- LINE
- PAGE

:

:

Field Name	Type/Length	Operating System
PRIORITY	(N3)	BS2000

Task scheduling priority.

Field Name	Type/Length	Operating System
PROCNAME	(A8)	z/OS

Name of procedure invoked.

Field Name	Type/Length	Operating System
RECFM	(A3)	z/OS

The record format of the spool file.

Field Name	Type/Length	Operating System
RECORD-COUNT	(N7)	z/OS

Number of records in this dataset.

Field Name	Type/Length	Operating System
ROTATION	(A8)	BS2000

Used page rotation.

Field Name	Type/Length	Operating System
SIZE	(A6)	BS2000

Size of SPOOLOUT file.

Field Name	Type/Length	Operating System
STATUS	(A9)	BS2000

Task status (category).

Field Name	Type/Length	Operating System
STEPNAME	(A8)	z/OS

Name of step invoked.

Field Name	Type/Length	Operating System
TRC	(A3)	z/OS

YES means byte 2 in record is used for CHARS (3800). (DCB=OPTCD=J is specified).

Field Name	Type/Length	Operating System
TYPE	(A2)	z/OS

Spool file type. Possible options:

Option	Explanation
CC	Summary of job steps and completion codes.
JL	Input JCL.
SI	SYSIN data.
SM	System messages.
S0	SYSOUT data.

Field Name	Type/Length	Operating System
TYPE - NUMBER	(N1)	BS2000

Task type.

Field Name	Type/Length	Operating System
UCS	A4	z/OS

The universal character set (UCS) image JES is to use in printing the sysout dataset.

Field Name	Type/Length	Operating System
USER	(A8)	BS2000

User ID.

Field Name	Type/Length	Operating System
WRITER	(A8)	z/OS

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
```

---

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## SPOOL-QUEUE

---

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<b>File</b>	11
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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.

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS, z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	

## Additional Fields Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
CLASS	A8		D	
QUEUE	A3		D	
DESTINATION	A8		D	
ORIGIN	A8		D	
SYSTEM-ID	A4		D	
TYPE	A3		D	
SPOOL-UTILIZATION	B1		D	
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	

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
ACCOUNT-NUMBER	A8		D	
CLASS	A8		D	
QUEUE	A3		D	
DESTINATION	A8		D	
ORIGIN	A8		D	
COPIES	N3		D	
DISP	A1		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-ID	A4		D	
PAGE-COUNT	N5		D	
FORM	A8		D	
SEGMENT-NUMBER	N3		D	
REAL-RECORD-COUNT	N9		D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
ACCOUNT-NUMBER	A8		D	
COPIES	N3		D	
ORIGINATOR-TSN	N5		D	
CPU-MAX	N7.2			
TYPE-NUMBER	N1			
SIZE	A6			
CPU-USED	N7.2			
DEVICE	A8		D	
ORIGINATOR-JOB-ID	A8		D	

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
699	Not enough main storage available.		X	X
711	Logical Error occurred in Common JES Interface.	X		
712	Request to Common JES Interface failed.	X		
713	Jobname and Job ID missing. One of them required.	X		
724	Requested job not found.	X		
728	You are not allowed to see this job.			X
729	Invalid job TYPE, specify JOB, STC or TSU.	X		
799	Entire System Server internal error.			X
830	JES interface is not active.	X		
830	POWER interface is not active.		X	

Code	Text	z/OS	z/VSE	BS2000
988	Invalid task type detected.			X

## Field Descriptions

Field Name	Type/Length	Operating System
ACCOUNT - NUMBER	(A8)	z/VSE, BS2000

Account number of user who submitted the job.

Field Name	Type/Length	Operating System
CARD - COUNT	(N7)	z/OS

Number of cards submitted to internal reader.

Field Name	Type/Length	Operating System
CLASS	(A8)	z/OS, z/VSE

Job class. For valid classes, ask your system programmer.

Field Name	Type/Length	Operating System
COPIES	(N3)	z/VSE, BS2000

Number of copies of job.

Field Name	Type/Length	Operating System
CPU - MAX	(N7.2)	BS2000

CPU time limit for the job.

Field Name	Type/Length	Operating System
CPU - USED	(N7.2)	BS2000

CPU time already used by the job.

Field Name	Type/Length	Operating System
DATE-ON-READER	(A8)	z/OS

Date when job was submitted to the internal reader.

Field Name	Type/Length	Operating System
DATE-XEQ-START	(A8)	z/OS, z/VSE

Date when job or queue entry started executing.

Field Name	Type/Length	Operating System
DATE-XEQ-STOP	(A8)	z/OS, z/VSE

Date when job or queue entry finished executing.

Field Name	Type/Length	Operating System
DATX-XEQ-START	(A8)	z/OS, z/VSE

Date when job or queue entry started executing - in internal format.

Field Name	Type/Length	Operating System
DATX-XEQ-STOP	(A8)	z/OS, z/VSE

Date when job or queue entry finished executing - in internal format.

Field Name	Type/Length	Operating System
DESTINATION	(A8)	z/OS, z/VSE

z/OS: JES destination of job.

z/VSE: POWER target user name.

Field Name	Type/Length	Operating System
DEVICE	(A8)	BS2000

Name of output device, if available.



Field Name	Type/Length	Operating System
DISP	(A1)	z/VSE

Job disposition. Possible values:

Value	Explanation
*	Active
D	Delete.
K	Keep.
L	Leave.

Field Name	Type/Length	Operating System
FORM	(A8)	z/VSE

Form ID.

Field Name	Type/Length	Operating System
GROUP - ID	(A20)	z/OS

Unique identifier defined by JES.

Field Name	Type/Length	Operating System
HOLD	(A3)	z/OS, z/VSE, BS2000

YES indicates job is in hold.

DUP indicates a temporary hold because of a duplicate job in the system.

Field Name	Type/Length	Operating System
JOB - CLASS	(A1)	z/OS

JES job class where the job is to be executed.

Field Name	Type/Length	Operating System
JOB - ID	(A8)	z/OS, z/VSE, BS2000

Job number or TSN of job in alphanumeric format.

Field Name	Type/Length	Operating System
JOB - NAME	(A8)	z/OS, z/VSE, BS2000

Name of the job.

Field Name	Type/Length	Operating System
JOB - NUMBER	(N7)	z/OS, z/VSE, BS2000

Job number assigned by JES (z/OS) or POWER (z/VSE).

Under BS2000, TSN of job.

Field Name	Type/Length	Operating System
MAX - RETURN - CODE	(A10)	z/OS

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	Operating System
MESSAGE - CLASS	(A1)	z/OS

Output message class.

Field Name	Type/Length	Operating System
ORIGIN	(A8)	z/OS, z/VSE

JES3 job origin.

Field Name	Type/Length	Operating System
ORIGINATOR-JOB-ID	(A8)	BS2000

For print jobs: alphanumeric TSN of task where print job was started.

Field Name	Type/Length	Operating System
ORIGINATOR-TSN	(N5)	BS2000

For print jobs: TSN of task which started the job.

Field Name	Type/Length	Operating System
OUTDISP	(A6)	z/OS

Output disposition. Possible values are WRITE, HOLD, KEEP or LEAVE.

Field Name	Type/Length	Operating System
PAGE-COUNT	(N5)	z/VSE

Number of pages.

Field Name	Type/Length	Operating System
PROGRAMMER-NAME	(A20)	z/OS

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	Operating System
PRIORITY	(N3)	z/OS, z/VSE, BS2000

Priority of job.

Field Name	Type/Length	Operating System
QUEUE	(A3)	z/OS, z/VSE

Queue in which the job resides. Possible values:

z/OS	IN	Input queue.
	NJE	NJE receive/transmit queue.
	OUT	Output queue.
	XEQ	Job is executing.
z/VSE	CRE	Create queue.
	LST	List queue.
	PUN	Punch queue.
	RDR	Reader queue.
	XMT	Transmit queue.

Field Name	Type/Length	Operating System
REAL - RECORD - COUNT	(N9)	z/VSE

Record count for segment or job (including control records).

Field Name	Type/Length	Operating System
RECORD - COUNT	(N9)	z/OS, z/VSE

Number of records in spool.

Field Name	Type/Length	Operating System
ROOM	(A4)	z/OS

Room number of user who submitted the job.

Field Name	Type/Length	Operating System
SEGMENT - NUMBER	(N3)	z/VSE

If the output is segmented, segment number of spool output.

Field Name	Type/Length	Operating System
SIZE	(A6)	BS2000

Size for print jobs in PAM pages.

Field Name	Type/Length	Operating System
SP00L-UTILIZATION	(B1)	z/OS

Percentage of spool used.

Field Name	Type/Length	Operating System
STATUS	(A9)	z/OS, z/VSE, BS2000

In BS2000, task category.

In z/OS, z/VSE, status of job.

Possible values:

BS2000	BATCH	Batch
	DIALOG	Dialogue
	D0	Dormant
	TP	Teleprocessing
	WT	Wait

For explanations and information on further parameters, see BS2000 documentation.

z/OS	ACTIVE	Job has been selected.
	AVAILABLE	Job is available.
	WAITING	Job is waiting (JES3 only).
z/VSE	ACTIVE	Job has been selected.
	AVAILABLE	Job is available.
	CRE	Job is in creation queue.
	XMT	Transmit queue.

Field Name	Type/Length	Operating System
SUBMITTER	(A8)	z/OS (JES3 only)

The submitting user ID of the job.

Field Name	Type/Length	Operating System
SYSTEM-ID	(A4)	z/OS, z/VSE

ID of the system on which the job is/was processed.

Field Name	Type/Length	Operating System
TIME-ON-READER	(N6)	z/OS

Time of day when job was submitted to the internal reader.

Field Name	Type/Length	Operating System
TIME-XEQ-START	(N6)	z/OS, z/VSE

Time of day when job or queue entry started executing.

Field Name	Type/Length	Operating System
TIME-XEQ-STOP	(N6)	z/OS, z/VSE

Time of day when job or queue entry finished executing.

Field Name	Type/Length	Operating System
TIMX-XEQ-START	(N6)	z/OS, z/VSE

Time of day when job or queue entry started executing - in internal format.

Field Name	Type/Length	Operating System
TIMX-XEQ-STOP	(N6)	z/OS, z/VSE

Time of day when job or queue entry finished executing - in internal format.

Field Name	Type/Length	Operating System
TYPE	(A3)	z/OS

Type of job. Possible values:

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

Field Name	Type/Length	Operating System
TYPE - NUMBER	(N1)	BS2000

Numeric job type identifier used in BS2000 (for example, 2 = batch, 3 = dialog).

Field Name	Type/Length	Operating System
USER	(A8)	z/VSE, z/OS, BS2000

Owner of the job. In BS2000, user ID of the job.

Field Name	Type/Length	Operating System
WLM-QUEUE-POSITION	(N7)	z/OS

Position on the WLM queue for the job.

Field Name	Type/Length	Operating System
WLM-SERVICE-CLASS	(A8)	z/OS

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.

---



# 51

## SPOOL-UPDATE

---

■ Common Fields for all Operating Systems .....	406
■ Additional Field Supported for z/OS .....	406
■ Additional Fields Supported for z/VSE .....	407
■ Relevant Error Codes .....	407
■ Field Descriptions .....	408

<b>File</b>	13
<b>Op-Sys</b>	z/OS, z/VSE
<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.

## Common Fields for all Operating Systems

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	z/OS: Required if no JOB-NAME or JOB-ID is specified.  z/VSE: Either JOB-NUMBER or JOB-ID may be Required if more than one queue entry for JOB-NAME exists.
JOB-ID	A8		D	z/OS: Required if no JOB-NAME or JOB-NUMBER is specified.  z/VSE: Either JOB-NUMBER or JOB-ID may be Required if more than one queue entry for JOB-NAME exists.
FUNCTION	A8		D	Required
JOB-NAME	A8		D	z/OS: Required if no JOB-NUMBER or JOB-ID is specified.  z/VSE: Required.
GROUP-ID	A20		D	
CLASS	A8		D	

## Additional Field Supported for z/OS

Dictionary Field Name	F/L	Mu	DE	Remarks
JES3-CLASS	A1			Valid for JES3 only.
JES3-QUEUE	A4			Valid for JES3 only.
NEW-DESTINATION	A8		D	Valid only if FUNCTION=CHANGE.

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
QUEUE	A3		D	Required.
SEGMENT - NUMBER	N3		D	
COPIES	N3		D	
DISP	A1		D	
PRIORITY	N1		D	
USER	A8		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE
669	Invalid specification for keyword :1:		X
671	Class missing or invalid.	X	
672	Segment option requires JOBNAME / JOBNUMBER.		X
711	Logical Error occurred in Common JES Interface.	X	
712	Request to Common JES Interface failed.	X	
714	Jobname and Job ID missing. One of them required.	X	
715	Duplicate jobnames found. Please specify Job ID.	X	
723	Job not in output service.	X	
724	Requested job not found.	X	X
730	Unknown error during alter.	X	
778	Not APF authorized.	X	
820	Unknown command.	X	X
821	Job no longer active.	X	
830	JES interface not active.	X	
830	POWER interface not active.		X
833	You are not allowed to alter this job.	X	
834	Command failed, MGCRE RC =:1:.	X	

## Field Descriptions

---

Field Name	Type/Length	Operating System
CLASS	(A1)	z/OS, z/VSE

New job class or output class to be assigned when FUNCTION=CHANGE or RELEASE.

Field Name	Type/Length	Operating System
COPIES	(N3)	z/VSE

Number of copies needed (1 - 255). Valid only if FUNCTION=CHANGE.

Field Name	Type/Length	Operating System
DISP	(A1)	z/VSE

Disposition needed. Valid only if FUNCTION=CHANGE.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE

Command to be executed. Possible options:

Option	Explanation
CANCEL	Cancel job.
CHANGE	Change one or more spool-queue attributes.  For z/OS: CLASS, NEW-DESTINATION.  For z/VSE: CLASS, COPIES, DISP, NEW-DESTINATION, PRIORITY, USER.
HOLD	Set job in HOLD status.
RELEASE	Release job.

Field Name	Type/Length	Operating System
GROUP-ID	(A20)	z/OS, z/VSE

Identification of JES SYSOUT group.

Field Name	Type/Length	Operating System
JES3-CLASS	(A1)	z/OS

Valid for JES3 only. Specifies the output class of the SYSOUT data sets that should be modified.

Field Name	Type/Length	Operating System
JES3-QUEUE	(A4)	z/OS

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	Operating System
JOB-ID	(A8)	z/OS, z/VSE

Job number in alphanumeric format.

Field Name	Type/Length	Operating System
JOB-NAME	(A8)	z/OS, z/VSE

Name of job.

Field Name	Type/Length	Operating System
JOB-NUMBER	(N7)	z/OS, z/VSE

Job number assigned by JES (z/OS) or POWER (z/VSE ).

Field Name	Type/Length	Operating System
NEW-DESTINATION	(A8)	z/OS

New destination for a given GROUP-ID. This GROUP-ID may be read using the view SPOOL-QUEUE. Valid only if FUNCTION=CHANGE.

Field Name	Type/Length	Operating System
PRIORITY	(N1)	z/VSE

New priority needed (0 - 9). Valid only if FUNCTION=CHANGE.

Field Name	Type/Length	Operating System
QUEUE	(A3)	z/VSE

Queue in which the job resides. Possible values:

Value	Explanation
LST	List queue.
PUN	Punch queue.
RDR	Reader queue.
XMT	Transmit queue.

Field Name	Type/Length	Operating System
SEGMENT-NUMBER	(N3)	z/VSE

Segment number of output to be deleted.

Field Name	Type/Length	Operating System
USER	(A8)	z/VSE

New user needed. Valid only if FUNCTION=CHANGE.

# 52

## SUBMIT

---

■ Common Fields for all Operating Systems .....	412
■ Additional Fields Supported for z/OS .....	412
■ Additional Fields Supported for z/VSE .....	413
■ Additional Fields Supported for BS2000 .....	413
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<b>File</b>	200
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	<p>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.</p> <p>For BS2000, the job can also be a library element (LMS). It is also possible to pass the job's JCL to the Entire System Server on a card-by-card basis.</p> <p>See also <a href="#">SUBMIT Programming Notes</a> at the bottom of this view description.</p>

## Common Fields for all Operating Systems

---

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	Not for z/VSE
FUNCTION	A8		D	Required for the last submit request.
IDENTIFIER	A8		D	Required with multiple parallel submit calls.
JOB-NAME	A8		D	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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.



Dictionary Field Name	F/L	Mu	DE	Remarks
PRODUCT	A1		D	
OPTIONS	A8		D	

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
JOB - NAME	A8		D	
FROM - NODE	N3		D	
MEMBER	A10		D	Required.
VOLSER	A6		D	Required only if file not known to Entire System Server.
LIBRARY	A8		D	Required.
SUB - LIBRARY	A8		D	Required.
MEMBER - TYPE	A8		D	Required.
TARGET - NODE - NAME	A8		D	
TARGET - USER - REMOTE - ID	A8		D	
VSAM - CATALOG	A8		D	Required if VSAM-controlled Librarian file.

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM - CODE	B2			
PRODUCT	A1		D	
ELEMENT	A64		D	
ELEMENT - PASSWORD	A8		D	
USERID	A8		D	
ACCOUNT - NUMBER	A8		D	
TIME	A5		D	
ERASE - AFTER - RUN	A3		D	
MONITOR - JOB - VARIABLE	A54		D	
JOB - VARIABLE - PASSWORD	A4		D	
USER - PASSWORD	A32		D	
JOB - CLASS	A8		D	
JOB - PRIORITY	A3		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
RUN-PRIORITY	A3		D	
START-OPTION	A17		D	
START-DATE	A8		D	
START-TIME	A5		D	
START-DATX	D		D	
START-TIMX	T		D	
REPEAT-OPTION	A17		D	
REPEAT-TIME	A5		D	

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
500	VSAM error.	X		
530	Access denied by Security Facility.			X
531	Password missing or incorrect.			X
556	File is in use.			X
565	Syntax error in dataset name.			X
692	You are not permitted to access member.			X
699	GETVIS failed.	X	X	
701	DSNAME missing.			X
732	Account number missing.			X
733	User ID does not exist.			X
756	Job variable name missing or invalid.			X
758	User ID is missing.			X
772	Requested dataset not found.			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
856	Operator unable to mount volume.			X
883	Dataset is full.			X
889	Permanent I/O error while writing dataset.			X
899	I/O error during read.	X		
901	Alloc of reader failed.	X	X	
902	Dynamic alloc failed.	X	X	
903	Dynamic allocation failed for temporary dataset.			X
909	Syntax error in JCL command.			X

Code	Text	z/OS	z/VSE	BS2000
991	Unknown product.			X
992	Requested job variable not found.			X
993	OPEN error.	X	X	X
998	Member not found.			X

## Field Descriptions

Field Name	Type/Length	Operating System
ACCOUNT - NUMBER	(A8)	BS2000

Account number for the job.

Field Name	Type/Length	Operating System
CARD	(A80)	z/OS, z/VSE, BS2000

JCL record to be sent from Natural to the internal reader.

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

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	Operating System
ELEMENT	(A64)	BS2000

Element from which cards are to be submitted.

Field Name	Type/Length	Operating System
ELEMENT - PASSWORD	(A8)	BS2000

Password for protected LMS element (LMS V2 or above).

Field Name	Type/Length	Operating System
ERASE-AFTER-RUN	(A3)	BS2000

Value	Explanation
NO	Do not erase Enter file after run.
YES	Erase Enter file after run.

Field Name	Type/Length	Operating System
FROM-NODE	(N5)	z/OS, z/VSE

Entire System Server node on which the JCL from the job is to be read.

Field Name	Type/Length	Operating System
FROM-USERID	(A8)	z/OS

User ID in the FROM-NODE.

Field Name	Type/Length	Operating System
FROM-USER-PASSWORD	(A32)	z/OS

User password in the FROM-NODE.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

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	Operating System
GENERATION	(N9)	z/OS

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

Field Name	Type/Length	Operating System
IDENTIFIER	(A8)	z/OS, z/VSE, BS2000

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	Operating System
JOB-CLASS	(A8)	BS2000

Name of the job class where the job is to run.

Field Name	Type/Length	Operating System
JOB-ID	(A8)	z/OS, z/VSE, BS2000

Same as JOB-NUMBER, only in alpha format.

Field Name	Type/Length	Operating System
JOB-NAME	(A8)	z/OS, z/VSE, BS2000

Name of job to be submitted.

Field Name	Type/Length	Operating System
JOB-NUMBER	(N7)	z/OS, z/VSE, BS2000

This field is returned after a call with FUNCTION=CLOSE.

z/OS & z/VSE:	Job number assigned by the JES (z/OS) or POWER (z/VSE ). If JOB-NUMBER=0, no valid job card was sent.
BS2000:	This field contains the TSN of the submitted job, if the TSN is numeric. In case of error, the field contains 0.

Field Name	Type/Length	Operating System
JOB-PRIORITY	(A3)	BS2000

Scheduling priority for a job. Possible values are between 9 and the maximum of the job class, or STD. STD is the default.

Field Name	Type/Length	Operating System
JOB-VARIABLE-PASSWORD	(A4)	BS2000

Password for protected monitoring job variable.

Field Name	Type/Length	Operating System
LIBRARY	(A8)	z/VSE

Name of library.

Field Name	Type/Length	Operating System
MEMBER	(A10)	z/OS, z/VSE

Name of member that contains the JCL to be submitted.

Field Name	Type/Length	Operating System
MEMBER-TYPE	(A8)	z/VSE

Member type.

Field Name	Type/Length	Operating System
MONITOR-JOB-VARIABLE	(A54)	BS2000

Specifies the name of a monitoring job variable that always contains the job status:

Job Status	Explanation
\$A	Job abended.
\$R	Job is running.
\$S	Job is in input queue.
\$T	Job terminated normally.

Field Name	Type/Length	Operating System
OPTIONS	(A8)	z/OS

Specify X to expand all ++INCLUDE statements.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/OS, BS2000

Password for protected dataset.

Field Name	Type/Length	Operating System
PRODUCT	(A1)	z/OS, BS2000

Access method for dataset containing the JCL. Possible options:

Option	Explanation
L	CA-Librarian
M	LMS (BS2000)
P	CA-Panvalet

Field Name	Type/Length	Operating System
REPEAT-OPTION	(A17)	BS2000

Specifies repeated job runs. Possible options:

Option	Explanation
AT-STREAM-STARTUP	Job is repeated at every scheduler startup.
DAILY	Job runs daily.
NO	Job is not repeated.
PERIOD	Specifies time interval for repeat runs.
STD	Default. Take the job class default.
WEEKLY	Job runs weekly.

Time given in REPEAT-TIME.

Field Name	Type/Length	Operating System
REPEAT-TIME	(A5)	BS2000

Specifies time for repeat runs (see REPEAT-OPTION).

Field Name	Type/Length	Operating System
RUN-PRIORITY	(A3)	BS2000

Priority during job execution. The value can be between job class maximum and 255, or STD. STD is the default and is also used if the RUN-PRIORITY value is invalid.

Field Name	Type/Length	Operating System
START-DATE	(A8)	BS2000

Start date value in format *YY-MM-DD*.

Field Name	Type/Length	Operating System
START-DATX	(D)	BS2000

Start date in Natural format.

Field Name	Type/Length	Operating System
START-OPTION	(A17)	BS2000

Specifies start of job. Possible options:

Option	Explanation
AT	Start at given time and/or date.
AT-STREAM-STARTUP	Start job at the start of the scheduler.
EARLIEST	Do not start before this date and/or time.
IMMEDIATELY	Start now.
LATEST	Do not start after this date and/or time.
SOON	As soon as possible.
STD	Default. Use job class default.
WITHIN	Specifies a time range.

The starting date and/or time are given in the fields START-DATE and START-TIME.

Field Name	Type/Length	Operating System
START-TIME	(A5)	BS2000

Start time value in format *HH:MM*.



Field Name	Type/Length	Operating System
START-TIMX	(T)	BS2000

Start time in Natural format.

Field Name	Type/Length	Operating System
SUB-LIBRARY	(A8)	z/VSE

Name of sublibrary.

Field Name	Type/Length	Operating System
TARGET-NODE-NAME	(A8)	z/VSE

Name of the node to which the POWER output is to be spooled.

Field Name	Type/Length	Operating System
TARGET-USER-REMOTE-ID	(A8)	z/VSE

Name of the user/remote to which the POWER output is to be spooled.

Field Name	Type/Length	Operating System
TIME	(A5)	BS2000

Maximum CPU time the job may consume. Possible values:

Value	Explanation
$t$	Time value in seconds
NTL	No Time Limit
STD	Default. As defined in the job class.

Field Name	Type/Length	Operating System
USERID	(A8)	BS2000

User ID under which the job is to be submitted.

Field Name	Type/Length	Operating System
USER-PASSWORD	(A32)	BS2000

Password belonging to the user ID under which the job is to be started.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number. Required only if the dataset is not cataloged.

Field Name	Type/Length	Operating System
VSAM-CATALOG	(A8)	z/VSE

Name of VSAM catalog where the library is kept.

## 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.

**BS2000**

If system is configured to work with encrypted passwords (class 2 system parameter `ENCRYPT`), the Entire System Server requires startup parameter `JOBENT=YES` to submit jobs for password protected users. Class 2 system parameter `SVC79` must be enabled also.



# 53

## SYSTEM-COMMAND

---

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■ Additional Fields Supported for z/OS .....	426
■ Field Descriptions .....	427
■ Relevant Error Codes .....	427
■ Default Order of Data Returned .....	430

<b>File</b>	46	
<b>Op-Sys</b>	z/OS, BS2000	
<b>Statement</b>	FIND	
<b>Task</b>	BS2000:	<p>Any batch mode command can be executed.</p> <p>Startup parameter SYSTEM-COMMAND-USER defines the list of users who are permitted to use this view.</p> <p>User exit USERSSEC is called if the parameter SYSTEM-COMMAND-USER was not defined.</p> <p>If the user exit is not found in the Entire System Server Load Library, any system command will be rejected in multi-user mode.</p>
	z/OS:	<p>Execute TSO commands online or in batch.</p> <p>TSO commands can be issued in Natural environments from TP monitors other than TSO.</p> <p>Up to 50 commands and sub-commands are allowed.</p>

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SUB-COMMAND	A80	M50	D	Command line for an FTP server. Up to 50 Sub-Commands are allowed. z/OS only.

## Field Descriptions

Field Name	Type/Length	Operating System
LINE	(A132)	z/OS, BS2000

Output line. If more than one output line is expected, a FIND loop is required to retrieve all of them.

Field Name	Type/Length	Operating System
COMMAND	(A80) (M20)	z/OS, BS2000

z/OS	Commands to be executed by TSO.
BS2000	The values specified with the field occurrences are taken without any changes and concatenated to a single command which is passed to the system.  Remember that the command is executed under the BS2000 user ID where the Entire System Server is running.

Field Name	Type/Length	Operating System
SUB - COMMAND	(A80) (M50)	z/OS

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.

## Relevant Error Codes

Code	Text	z/OS	BS2000
530	Access denied by security.		X
699	Not enough main storage.		X
750	Invalid operand.		X
772	BS2000 command returned error.		X
799	Internal error.		X

**Example:**

z/OS: 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.





[illegible]

## Default Order of Data Returned

Each line of the output listing is presented in order.

# 54

## SYSTEM-INFO

---

■ Common Fields for all Operating Systems .....	432
■ Additional Fields Supported for z/OS, z/VSE .....	433
■ Additional Fields Supported for z/OS .....	433
■ Additional Fields Supported for z/VSE .....	433
■ Additional Fields Supported for BS2000 .....	434
■ Relevant Error Codes .....	434
■ Field Descriptions .....	434

<b>File</b>	26
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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.

## Common Fields for all Operating Systems

---

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			

## Additional Fields Supported for z/OS, z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-NAME	A8		D	
SMF-RECORD	N3		D	
APF	N3		D	

## Additional Fields Supported for z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
DATE-FORMAT	A3		D	
SYSTEM-ID	A16		D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
SYSTEM-BASE-ADDRESS	A8			
CONFIGURATION-NAME	A21			
MEMORY-SIZE	A8			
FIRST-CPU-SERIAL-NUMBER	A6			
SECOND-CPU-SERIAL-NUMBER	A6			
OPERATING-SYSTEM-TYPE	A4			
OPERATING-SYSTEM-ID	A8			
JOBVAR	A3			
SESSION-NUMBER	N3			
LMS-VERSION	N3			
MODE	A8			
LOGON-ID	A8			

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
799	Entire System Server internal error.			X

## Field Descriptions

---

Field Name	Type/Length	Operating System
APF	(A3)	z/OS

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	Operating System
AUTO-LOGON	(A3)	z/OS, z/VSE, BS2000

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	Operating System
CONFIGURATION-NAME	(A21)	BS2000

Hardware type (for example, 7500-H60-F).

Field Name	Type/Length	Operating System
CPU-ID	(A12)	z/OS, z/VSE

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	Operating System
CPU-UTILIZATION	(N3)	z/OS

Percentage of time the CPU is busy.

Field Name	Type/Length	Operating System
DATE-FORMAT	(A3)	z/VSE

DATE-FORMAT returns the value specified in the VSE JCS card //STD OPT DATE =. The values returned are DMY or MDY. Used to determine default date format as displayed in z/VSE.

Field Name	Type/Length	Operating System
ESY-VERSION	(A8)	z/OS, z/VSE, BS2000

The version number of this Entire System Server, for example, 3.3.1.

Field Name	Type/Length	Operating System
FIRST-CPU-SERIAL-NUMBER	(A6)	BS2000

The serial number of the first CPU.

Field Name	Type/Length	Operating System
GMT-DIFFERENCE	(N3)	z/OS, z/VSE

Time difference in hours between local time and GMT.

Field Name	Type/Length	Operating System
JOBNAME	(A8)	z/OS, z/VSE, BS2000

Job name of the Entire System Server node.

Field Name	Type/Length	Operating System
JOBVAR	(A3)	BS2000

Possible values:

Value	Explanation
NO	Software product Job Variables not available.
YES	Software product Job Variables is installed.

Field Name	Type/Length	Operating System
LAST-IPL-DATX	(D)	z/OS, z/VSE

Date in Natural format of last system IPL.

Field Name	Type/Length	Operating System
LAST-IPL-TIMX	(T)	z/OS, z/VSE

Time in Natural format of last system IPL.

Field Name	Type/Length	Operating System
LMS-VERSION	(N3)	BS2000

LMS version which must be used by this Entire System Server node as specified in the startup parameters.



Field Name	Type/Length	Operating System
LOCAL-DATX	(D)	z/OS, z/VSE, BS2000

Current date in Natural format.

Field Name	Type/Length	Operating System
LOCAL-TIMX	(T)	z/OS, z/VSE, BS2000

Current time of day in Natural format.

Field Name	Type/Length	Operating System
LOGON-ID	(A8)	BS2000

Returns the current user ID of the caller. This value is changed after NATPROC-LOGON.

Field Name	Type/Length	Operating System
MEMORY-SIZE	(A8)	BS2000

Available system main storage in bytes.

Field Name	Type/Length	Operating System
MODE	(A8)	BS2000

Indicates the user mode of Entire System Server. Possible values:

- MULTI
- SINGLE

Field Name	Type/Length	Operating System
NODE-ID	(A50)	z/OS, z/VSE, BS2000

Logical identifier of the node. This value is defined for the node using the startup parameter IDENTIFIER.

Field Name	Type/Length	Operating System
NODE-NAME-LIST	(A16)	z/OS, z/VSE, BS2000

Lists entries of Entire System Server Nodes.

Field Name	Type/Length	Operating System
OPERATING-SYSTEM-ID	(A8)	BS2000

Program name of the BS2000 where the Entire System Server is running.

Field Name	Type/Length	Operating System
OPERATING-SYSTEM-TYPE	(A4)	BS2000

Type of hardware-software interface. Possible values:

Value	Explanation
NXS	24-bit address mode
XS25	25-bit address mode
XS31	31-bit address mode

Field Name	Type/Length	Operating System
PRODUCT-NAME	(A16)	z/OS, z/VSE

The name of the product as defined in the operating system. Currently, possible values are z/OS, z/VSE.

Field Name	Type/Length	Operating System
PRODUCT-VERSION	(A8)	z/OS, z/VSE

The version of the product as defined in the operating system. In z/OS environments, this will be in the format vv.rr.mm, whilst in the z/VSE environment this will be v.r.m.

Field Name	Type/Length	Operating System
SECOND-CPU-SERIAL-NUMBER	(A6)	BS2000

The serial number of the second CPU.

Field Name	Type/Length	Operating System
SECURITY	(A4)	z/OS, z/VSE, BS2000

Security system defined in Entire System Server startup parameters.

Field Name	Type/Length	Operating System
SESSION-NUMBER	(N3)	BS2000

Number of actual BS2000 session.

Field Name	Type/Length	Operating System
SMF-RECORD	(N3)	z/OS

SMF record number written by the Entire System Server.

Field Name	Type/Length	Operating System
SPOOL-RELEASE	(A8)	z/OS, z/VSE

Spooling system release number.

Field Name	Type/Length	Operating System
SPOOL-TYPE	(A8)	z/OS, z/VSE

Spooling system type.

Field Name	Type/Length	Operating System
STARTUP-PARM	(A80)	z/OS, z/VSE, BS2000

Entire System Server startup parameters. To obtain all startup parameters, use a processing loop in Natural.

Field Name	Type/Length	Operating System
SYSTEM-BASE-ADDRESS	(A8)	BS2000

Gives the start address of the virtual system address space.

Field Name	Type/Length	Operating System
SYSTEM-ID	(A16)	z/VSE

POWER-ID.

Field Name	Type/Length	Operating System
SYSTEM-NAME	(A8)	z/OS

SMF system name.

Field Name	Type/Length	Operating System
SYSTEM-RELEASE	(A8)	z/OS, z/VSE, BS2000

Operating system release number.

Field Name	Type/Length	Operating System
SYSTEM-TYPE	(A8)	z/OS, z/VSE, BS2000

Operating system type. For compatibility reasons, MVS/ESA is returned on a z/OS system, and DOS is returned on a z/VSE system. Use the field `PRODUCT-NAME` to determine the name of the product as defined in the operating system. Possible options:

Option	Explanation
DOS	Old notation for z/VSE .
BS2000	
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
```



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## TASK-INFO

---

■ Common Fields for all Operating Systems .....	444
■ Relevant Error Codes .....	445
■ Field Descriptions .....	445

<b>File</b>	113
<b>Op-Sys</b>	BS2000
<b>Statement</b>	FIND
<b>Task</b>	Display information on the specified task.

## Common Fields for all Operating Systems

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			
SYSTEM-CODE	B2			
JOB-NUMBER	N7		D	Required if no JOB-ID is given.
JOB-ID	A8		D	Required if no JOB-NUMBER is given.
JOB-NAME	A8			
TYPE-NUMBER	N1			
STATUS	A9			
PRIORITY	N3			
USER	A8			
ACCOUNT-NUMBER	A8			
CPU-USED	N7.2			
UNPEND-CODE	N4			
TASK-QUEUE-NUMBER	N3			
LAST-COMMAND	A12			
SIZE	A6			
LOADED-PROGRAM	A64			
PRINT-FILE-NAME	A54			
PRINT-ELEMENT	A64			
PRINT-ELEMENT-TYPE	A8			
PRINT-ELEMENT-VERSION	A24			
NUMBER-OF-PRINTED-LINES	N6			
PRINT-ERROR-MESSAGE	A10			
PRINT-FORM	A8			
COPIES	N3			



Dictionary Field Name	F/L	Mu	DE	Remarks
ORIGINATOR-TSN	N5			
CPU-MAX	N7.2			
DEVICE	A8			
ORIGINATOR-JOB-ID	A8			
NUMBER-OF-PRINTED-PAGES	N6			
LOGON-DATX	D			
LOGON-TIMX	T			
HOLD	A3			

## Relevant Error Codes

Code	Text	BS2000
724	Requested job not found.	X
728	You are not allowed to see this job.	X
799	Entire System Server internal error.	X
988	Invalid task type detected.	X

## Field Descriptions

Field Name	Type/Length	Operating System
ACCOUNT-NUMBER	(A8)	

Account number of job for Task Types 1 - 3.

Field Name	Type/Length	Operating System
COPIES	(N3)	

Number of copies for print jobs.

Field Name	Type/Length	Operating System
CPU-MAX	(N7.2)	

CPU time limit for the job, for Task Types 1 - 3.

Field Name	Type/Length	Operating System
CPU-USED	(N7.2)	

CPU time already used by the task for Task Types 2 and 3.

Field Name	Type/Length	Operating System
DEVICE	(A8)	

Printer device name.

Field Name	Type/Length	Operating System
HOLD	(A3)	

For Task Type 2 (see TYPE-NUMBER): YES, if job is in hold, or NO.

Field Name	Type/Length	Operating System
JOB-ID	(A8)	

Alphanumeric TSN of job.

Field Name	Type/Length	Operating System
JOB-NAME	(A8)	

Name of job.

Field Name	Type/Length	Operating System
JOB-NUMBER	(N7)	

TSN of job.

Field Name	Type/Length	Operating System
LAST-COMMAND	(A12)	

Last command executed by the task. For Task Types 2 and 3.

Field Name	Type/Length	Operating System
LOADED-PROGRAM	(A64)	

For Tasks Types 2 and 3: name of loaded program.

Field Name	Type/Length	Operating System
LOGON-DATX	(D)	

For Task Types 2 and 3: date of LOGON in Natural format.

Field Name	Type/Length	Operating System
LOGON-TIMX	(T)	

For Task Types 2 and 3: time of LOGON in Natural format.

Field Name	Type/Length	Operating System
NUMBER-OF-PRINTED-LINES	(N6)	

For print jobs.

Field Name	Type/Length	Operating System
NUMBER-OF-PRINTED-PAGES	(N6)	

For print jobs.

Field Name	Type/Length	Operating System
ORIGINATOR-JOB-ID	(A8)	

For print-jobs: alphanumeric TSN of task which started the job.

Field Name	Type/Length	Operating System
ORIGINATOR-TSN	(N5)	

For print-jobs: TSN of task which started the job.

Field Name	Type/Length	Operating System
PRINT-ELEMENT	(A64)	

Name of printed element.

Field Name	Type/Length	Operating System
PRINT-ELEMENT-TYPE	(A8)	

Type of printed element.

Field Name	Type/Length	Operating System
PRINT-ELEMENT-VERSION	(A24)	

Version of printed element.

Field Name	Type/Length	Operating System
PRINT-ERROR-MESSAGE	(A10)	

Error message issued during PRINT. Only relevant for Task Type 7.

Field Name	Type/Length	Operating System
PRINT-FILE-NAME	(A54)	

Name of printed file.

Field Name	Type/Length	Operating System
PRINT-FORM	(A8)	

For print jobs: name of form used.

Field Name	Type/Length	Operating System
PRIORITY	(N3)	

Task scheduling priority.

Field Name	Type/Length	Operating System
SIZE	(A6)	

Size of job.

Task Types 2 and 3: program size.

Task Types 4 - 7: size of SPOOLOUT file.

Field Name	Type/Length	Operating System
STATUS	(A9)	

Task status (DIALOG, TP, etc.).

Field Name	Type/Length	Operating System
TASK-QUEUE-NUMBER	(N3)	

Number of task scheduler queue for Task Types 2 and 3.

Field Name	Type/Length	Operating System
TYPE-NUMBER	(N1)	

Numeric job type identifier used in BS2000 (for example, 2 = batch, 3 = dialog). Possible values: 1 - 7.

Field Name	Type/Length	Operating System
UNPEND-CODE	(N4)	

Pend / Unpend code for Task Types 2 and 3.

Field Name	Type/Length	Operating System
USER	(A8)	

BS2000 user ID of task owner.



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## TCB

---

■ Common Fields for all Operating Systems .....	452
■ Relevant Error Codes .....	452
■ Field Descriptions .....	453

<b>File</b>	24
<b>Op-Sys</b>	z/OS
<b>Statement</b>	FIND
<b>Task</b>	Retrieve Task Control Block for a given job and interpret its contents.

## Common Fields for all Operating Systems

---

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	z/OS
801	Job not found	X
805	Invalid TCB address	X



## Field Descriptions

---

Field Name	Type/Length	Operating System
COMPLETION-CODE	(B4)	

Completion code for the task.

Field Name	Type/Length	Operating System
DAUGHTER-TCB	(B4)	

TCB address of task last attached by this task.

Field Name	Type/Length	Operating System
DEB-CHAIN	(B4)	

Address of DEB chain (open datasets).

Field Name	Type/Length	Operating System
JOB-NAME	(A8)	

Name of job to be scanned.

Field Name	Type/Length	Operating System
LLS-CHAIN	(B4)	

Address of LLS chain (loaded programs).

Field Name	Type/Length	Operating System
MOTHER-TCB	(B4)	

TCB address of task which attached this task.

Field Name	Type/Length	Operating System
RB-CHAIN	(B4)	

Address of request block chain (active programs).

Field Name	Type/Length	Operating System
SISTER-TCB	(B4)	

TCB address of task previously attached by the task which attached this task.

Field Name	Type/Length	Operating System
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	



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## UNIT-ATTRIBUTES

---

■ Common Fields for all Operating Systems .....	458
■ Additional Fields Supported for z/OS .....	458
■ Field Descriptions .....	459

<b>File</b>	6
<b>Op-Sys</b>	z/OS, z/VSE
<b>Statement</b>	FIND
<b>Task</b>	Retrieve information relating to devices, for example, unit address, device, device type, online/offline status, free cylinders.

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	

Dictionary Field Name	F/L	Mu	DE	Remarks
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	
TOTAL-CYLINDERS-TRACK-MANAGED	N7		D	
TRACKS-PER-CYLINDER	N3		D	
VTOC-TYPE	A1		D	

## Field Descriptions

Field Name	Type/Length	Operating System
ACTIVITY	(A9)	z/OS, z/VSE

Activity of device. Possible values:

Value	Explanation
ALLOCATED	Device allocated.
BUSY	Device busy.

Field Name	Type/Length	Operating System
CLASS	(A4)	z/OS, z/VSE

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	Operating System
CONTIG-CYLINDERS	(N7)	z/OS

Number of cylinders in largest free extent.

Field Name	Type/Length	Operating System
CONTIG-CYLINDERS-TRACK-MANAGED	(N7)	z/OS

Number of cylinders in largest free extent in track managed space on volume.

Field Name	Type/Length	Operating System
CONTIG-TRACKS	(N4)	z/OS

Number of tracks in largest free extent (in addition to CONTIG-CYLINDERS).

Field Name	Type/Length	Operating System
EAV	(A3)	z/OS

Specifies whether a device is an Extended Address Volume. Possible values:

- NO
- YES

Field Name	Type/Length	Operating System
DCB-COUNT	(N3)	z/OS, z/VSE

Number of DCBs currently open on the unit.

Field Name	Type/Length	Operating System
DENSITY	(A9)	z/OS, z/VSE

Tape density. Possible values:

Value	Explanation
800	Bits per inch (bpi)
800/1600	
1600	
1600/6250	
6250	



Field Name	Type/Length	Operating System
DEVICE-STATUS	(A7)	z/OS, z/VSE

Possible values:

Value	Explanation
CHANGE	Status changing.
OFFLINE	Device is offline.
ONLINE	Device is online.

Field Name	Type/Length	Operating System
DEVICE-TYPE	(B4)	z/OS, z/VSE

UCBTYP device type internal code.

Field Name	Type/Length	Operating System
FREE-CYLINDERS	(N7)	z/OS

Number of free cylinders on disk pack.

Field Name	Type/Length	Operating System
FREE-CYLINDERS-TRACK-MANAGED	(N7)	z/OS

Number of free cylinders in track managed space on volume.

Field Name	Type/Length	Operating System
FREE-EXTENTS	(N4)	z/OS

Number of free extents on disk pack.

Field Name	Type/Length	Operating System
FREE-EXTENTS-TRACK-MANAGED	(N4)	z/OS

Number of free extents in track managed space on volume.

Field Name	Type/Length	Operating System
FREE-TRACKS	(N4)	z/OS

Number of free tracks (in addition to FREE-CYLINDERS).

Field Name	Type/Length	Operating System
MOUNT-STATUS	(A10)	z/OS

Possible values:

- MOUNT PEND
- NOT READY
- REMOVABLE
- RESERVED
- RESIDENT

Field Name	Type/Length	Operating System
SERIES	(A6)	z/OS, z/VSE

Device series, for example, 3330-1.

Field Name	Type/Length	Operating System
SMS	(A3)	z/OS

Whether device is SMS-managed. Possible values:

- NO
- YES

Field Name	Type/Length	Operating System
TOTAL-CYLINDERS	(N7)	z/OS

Total number of cylinders on disk pack.

Field Name	Type/Length	Operating System
TOTAL-CYLINDERS-TRACK-MANAGED	(N7)	z/OS

Total number of cylinders in track managed space on volume.

Field Name	Type/Length	Operating System
TRACKS-PER-CYLINDER	(N3)	z/OS

Number of tracks per cylinder.

Field Name	Type/Length	Operating System
UCB-ADDRESS	(B4)	z/OS, z/VSE

Memory address of unit control block for unit.

Field Name	Type/Length	Operating System
UNIT	(A4)	z/OS, z/VSE

Unit address in EBCDIC.

Field Name	Type/Length	Operating System
UNIT-HEX	(B2)	z/OS, z/VSE

Binary device number, used for comparisons (X'12A' > X'120', but '12A' < '120').

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number currently mounted on the unit.

Field Name	Type/Length	Operating System
VOLUME-STATUS	(A8)	z/OS, z/VSE

Possible values:

z/OS:	PRIVATE PUBLIC STORAGE
z/VSE:	SYSRES (system-resident)

Field Name	Type/Length	Operating System
VTOC-TYPE	(A1)	z/OS

Type of VTOC. Possible values:

Value	Explanation
I	Indexed.
N	Normal.

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## UNIX-DIRECTORY

---

■ Fields (z/OS only) .....	466
■ Relevant Error Codes .....	466
■ Field Descriptions .....	467

<b>File</b>	97
<b>Op-Sys</b>	z/OS
<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 (z/OS only)

---

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	z/OS
530	Access denied by Security Facility.	X
568	File not found.	X
893	Getmain failed.	X
899	I/O error on file.	X
993	Cannot open file.	X

## Field Descriptions

---

Field Name	Type/Length	Operating System
NODE	(N5.0)	z/OS

D Node ID (DBID).

Field Name	Type/Length	Operating System
ERROR-CODE	(N3.0)	z/OS

Message code.

Field Name	Type/Length	Operating System
ERROR-TEXT	(A58)	z/OS

Text describing error.

Field Name	Type/Length	Operating System
NODE-NAME	(A16)	z/OS

LPAR where node is running.

Field Name	Type/Length	Operating System
SYSTEM-MESSAGE-CODE	(A10)	z/OS

Code of system message.

Field Name	Type/Length	Operating System
PATH	(A54)	z/OS

Path of directory to be read.

Field Name	Type/Length	Operating System
FILE	(A253)	z/OS

Name of file or directory.

Field Name	Type/Length	Operating System
TYPE	(A1)	z/OS

Directory or file.

Values	Explanation
D	Directory.
3	Standard file.

Field Name	Type/Length	Operating System
ACCESS-USER	(A3)	z/OS

Access rights of user.

Values	Explanation
R	Read
W	Write
X	Execute

Field Name	Type/Length	Operating System
ACCESS-GROUP	(A3)	z/OS

Access rights of group.

Values	Explanation
R	Read
W	Write
X	Execute

Field Name	Type/Length	Operating System
ACCESS-OTHER	(A3)	z/OS

Access rights of others.



Values	Explanation
R	Read
W	Write
X	Execute

Field Name	Type/Length	Operating System
OWNER	(N8)	z/OS

Owner of file/directory.

Field Name	Type/Length	Operating System
OWNER-GROUP	(N8)	z/OS

Group of owner.

Field Name	Type/Length	Operating System
FILE-SIZE	(N8.0)	z/OS

Size of file in bytes.

---

# 59

## USER-ATTRIBUTES

---

■ Common Fields for all Operating Systems .....	472
■ Relevant Error Codes .....	473
■ Field Descriptions .....	473

<b>File</b>	86
<b>Op-Sys</b>	BS2000
<b>Statement</b>	FIND
<b>Task</b>	<p>Reads the user attributes of the calling user.</p> <p>If you are the system administrator, you can retrieve the attributes of all users. You may encounter functional restrictions when SECOS is installed.</p>

## Common Fields for all Operating Systems

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			
SYSTEM-CODE	B2			
USER-ID	A8		D	
FUNCTION	A8		D	
SEVER	A3		D	
PASSWORD	A8		D	
PASSWORD-MODS	A3		D	
MAX-ACC-REC	A5		D	
CSTMP-MACRO	A3		D	
PUBLIC-SPACE	N8		D	
RESIDENT-PAGES	N5		D	
MAX-PUBLIC-SPACE	N8		D	
ENFORCE	A3		D	
AUDIT	A3		D	
TP-IGNORE	A4		D	
DEFAULT-PUBSET	A4		D	
TEST-PRIVILEGE	A3		D	
COMMANDS-FILE-NAME	A54		D	
MAIL-ADDRESS	A64		D	
ACCOUNT-NUMBER	A8		D	
MAX-CPU-TIME	N5		D	
NO-TIME-LIMIT	A3		D	

Dictionary Field Name	F/L	Mu	DE	Remarks
EXPRESS	A3		D	
PRIORITY	N3		D	
TTYPL	A3		D	
INHIBIT-DEACTIVATION	A3		D	
CLASS	N3		D	
USER-PRIVILEGE	A4		D	
MAX-OUTPUT-LINES	A8		D	
MAX-INPUT-CARDS	A8		D	
USER-ADDRESS-SPACE	N5		D	
USERID-PUBSET	A4		D	

## Relevant Error Codes

Code	Text	BS2000
530	Access denied by Security Facility	X
733	User ID does not exist	X
749	PVS (CATID) not available	X
771	No information found	X
799	Entire System Server internal error.	X

## Field Descriptions

Field Name	Type/Length	Operating System
ACCOUNT-NUMBER	(A8)	

Account number for user ID. If more than one account number exists, it is necessary to have a processing loop in Natural to get them all.

Field Name	Type/Length	Operating System
AUDIT	(A3)	

Possible options:

Option	Explanation
NO	User is not authorized.
YES	User can specify for the files of his user ID that access to them must be supervised by the system.

Field Name	Type/Length	Operating System
CLASS	(N3)	

SPOOLOUT class (0-255) for the user's account number.

Field Name	Type/Length	Operating System
COMMANDS-FILE-NAME	(A54)	

Name of group syntax file or profile for SDF.

Field Name	Type/Length	Operating System
CSTMP-MACRO	(A3)	

Specifies whether the CSTMP macro (define memory pool as read only) can be used. Possible options:

Option	Explanation
NO	CSTMP macro not allowed.
YES	CSTMP macro can be used (define memory pool as read only).

Field Name	Type/Length	Operating System
DEFAULT-PUBSET	(A4)	

Default pubset assigned for user. This is used for allocation of files when no pubset is specified.

Field Name	Type/Length	Operating System
ENFORCE	(A3)	

Possible options:

Option	Explanation
NO	User is not authorized.
YES	User can force usage of PAM pages although the limit specified in MAX-PUBLIC-SPACE has already been reached for the user ID.

Field Name	Type/Length	Operating System
EXPRESS	(A3)	

Specifies whether the user can start batch jobs under the specified account number immediately, even though the limit for running jobs of the job classes assigned to the user has been reached.

Possible options:

Option	Explanation
NO	The user is not authorized.
YES	The user is authorized.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	

Possible options:

Option	Explanation
READ	Default. Read information for user ID.
READNXT	Read information for user following entry for user ID in TSOSJOIN (only allowed for TSOS).

Field Name	Type/Length	Operating System
INHIBIT-DEACTIVATION	(A3)	

Possible options:

Option	Explanation
NO	Tasks can be deactivated by user.
YES	Prohibit deactivation of tasks of this account number.

Field Name	Type/Length	Operating System
MAIL-ADDRESS	(A64)	

Mail address for output listings.

Field Name	Type/Length	Operating System
MAX-ACC-REC	(A5)	

Maximum number of accounting records which can be written by a job or program. Possible values:

Value	Explanation
<i>n</i>	Maximum number, 0 - 32767.
NL	There is no limit.

Field Name	Type/Length	Operating System
MAX-CPU-TIME	(N5)	

Maximum CPU time in seconds available for this account number (1 - 65535) The default is 65535.

Field Name	Type/Length	Operating System
MAX-INPUT-CARDS	(A8)	

Maximum number of SYSOPT cards allowed for tasks of this user, or NO LIMIT, if the number is not restricted.

Field Name	Type/Length	Operating System
MAX-OUTPUT-LINES	(A8)	

Maximum number of SYSLST lines allowed for tasks of this user, or NO LIMIT, if the number is not restricted.,

Field Name	Type/Length	Operating System
MAX-PUBLIC-SPACE	(N8)	

Maximum number of PAM pages of public space which can be occupied by this user.

Field Name	Type/Length	Operating System
NO-TIME-LIMIT	(A3)	

Specifies whether the user is allowed to specify TIME=NTL for batch jobs under this account number. Possible options:



Option	Explanation
NO	The user is not authorized.
YES	The user is authorized.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	

Possible options:

Option	Explanation
NO	No password.
YES	User ID is password-protected.

Field Name	Type/Length	Operating System
PASSWORD-MODS	(A3)	

Specifies whether the user can change or delete his password. Possible values:

Value	Explanation
NO	User cannot change or delete his/her password.
YES	User can delete his password.

Field Name	Type/Length	Operating System
PRIORITY	(N3)	

Default job priority for this account number.

Field Name	Type/Length	Operating System
PUBLIC-SPACE	(N8)	

Number of PAM pages used on public space for this user ID.

Field Name	Type/Length	Operating System
RESIDENT-PAGES	(N5)	

Number of resident pages of real memory available for use (maximum is 32767).

Field Name	Type/Length	Operating System
SEVER	(A3)	

Possible values:

Value	Explanation
NO	Not severed.
YES	User ID severed.

Field Name	Type/Length	Operating System
TEST-PRIVILEGE	(A3)	

Defines whether user can change the privilege level for use of the software product AID. Possible options:

Option	Explanation
NO	The user can change the authorization at will.
YES	The user can change the authorization only with the operator's permission.

Field Name	Type/Length	Operating System
TP-IGNORE	(A4)	

States whether the operator can ignore tape label checks for the user. Possible options:

Option	Explanation
NO	Default. Error messages cannot be ignored.
ALL	All error messages are ignored.
BLP	For tapes processed in INPUT or REVERSE mode, no label checking is performed.
READ	Messages for input files can be ignored.
YES	Can only be ignored by the tape owner or TSOS.

Field Name	Type/Length	Operating System
TTYPL	(A3)	

Allowed category where tasks for this user and account number are grouped. Possible options:

Option	Explanation
STD	BATCH and DIALOG type tasks are allowed.
SYS	All task types are allowed.
TP	BATCH, DIALOG and TP are allowed.

Field Name	Type/Length	Operating System
USER-ADDRESS-SPACE	(N5)	

Size of address space for tasks of this user in MB.

Field Name	Type/Length	Operating System
USER-ID	(A8)	

Identification of user, whose information is to be read. The default is your own user ID. To read information on other users, your user ID must be TSOS.

Field Name	Type/Length	Operating System
USERID-PUBSET	(A4)	

ID of pubset from which user attributes are to be read.

Field Name	Type/Length	Operating System
USER-PRIVILEGE	(A4)	

Specifies whether the user is TSOS-authorized or not. Possible options:

Option	Explanation
USER	Normal user.
TSOS	The user is authorized.



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## VTOC

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■ Relevant Error Codes .....	484
■ Field Descriptions .....	485

<b>File</b>	4
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	FIND
<b>Task</b>	<p>List the VTOC of a specified disk with related information such as volume serial number, dataset name, file size, etc.</p> <p>In BS2000, this view can be used to display the same information as returned by the system command /FSTAT with the VOL parameter or /SHOW-FILE-ATTRIBUTES with SELECT=BY-ATTRIBUTES(VOLUME=).</p>

## Common Fields for all Operating Systems

---

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	

## Additional Fields supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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	

Dictionary Field Name	F/L	Mu	DE	Remarks
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	
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	

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
DSORG	A4		D	
CREATION-DATE	A8		D	
EXPIRATION-DATE	A8		D	
EXTENTS	A192		D	
NUMBER-OF-EXTENTS	N3		D	
CYLINDERS-ALLOCATED	N7		D	
UNIT	A4		D	
SERIES	A6		D	
CREATION-DATX	D		D	
EXPIRATION-DATX	D		D	
EXTENT-TYPE	A4		D	
EXTENTS-ARRAY	A192	M/16	D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
500	VSAM error.	X		
530	Access denied by Security Facility.			X
565	Syntax error in dataset name.			X
604	No volumes specified.			X
696	Cannot assign logical unit.		X	
699	Not enough main storage available.	X	X	X
701	DSNAME missing.			X
722	Requested dataset not found.			X
733	User ID does not exist.			X
750	Invalid operand within operand list.			X
781	Unable to obtain storage for work area extension.	X		
782	Error from :1: for :2:, RC :3:, REASON :3:	X		
783	Unable to allocate :1:, RC :2:, REASON :3:	X		
784	Unable to open VTOC on :1:, RC :2:	X		
785	CVAF:1: failed with RC :2: and CVSTAT :3:	X		
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
899	I-O error during read.	X	X	
996	Volume not online.	X	X	X



## Field Descriptions

Field Name	Type/Length	Operating System
ALLOCATION-TYPE	(A4)	z/OS

Allocation type specified. Possible values:

Value	Explanation
ABS	Absolute
BLK	Block
CYL	Cylinder
TRK	Track

Field Name	Type/Length	Operating System
BLKSIZE	(N5)	z/OS

Block size.

Field Name	Type/Length	Operating System
CREATION-DATE	(A8)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
CREATION-DATX	(D)	z/OS, z/VSE

Creation date of file in Natural format.

Field Name	Type/Length	Operating System
CYLINDERS-ALLOCATED	(N7)	z/OS, z/VSE

Number of integral cylinders allocated.

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

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	Operating System
DSNTYPE	(A8)	z/OS

Data Set Type Specification.

Field Name	Type/Length	Operating System
DSORG	(A4)	z/OS, z/VSE

Dataset organization, for example PS for sequential dataset, PO for partitioned dataset, POE for PDSE.

Field Name	Type/Length	Operating System
EXPIRATION-DATE	(A8)	z/OS, z/VSE

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

Field Name	Type/Length	Operating System
EXPIRATION-DATX	(D)	z/OS, z/VSE

Expiration date of file in Natural format.

Field Name	Type/Length	Operating System
EXTENTS	(A192)	z/OS, z/VSE

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	Operating System
EXTENTS-ARRAY	(A192) M16	z/OS, z/VSE

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	Operating System
EXTENT-TYPE	(A4)	z/OS, z/VSE

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 (z/OS only).

Field Name	Type/Length	Operating System
FILE-SIZE	(N10)	z/OS, z/VSE, BS2000

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

In BS2000, the number of PAM pages allocated.

Field Name	Type/Length	Operating System
LAST-REFERENCE	(A8)	z/OS

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	Operating System
LAST-REFERENCE-DATX	(D)	z/OS

Last reference date in Natural format.

Field Name	Type/Length	Operating System
LAST-TTR	(B3)	z/OS

Last track.

Field Name	Type/Length	Operating System
LAST-TTTR	(B4)	z/OS

Last used track and block on track (TTTR).

Field Name	Type/Length	Operating System
LRECL	(N5)	z/OS

Logical record length.

Field Name	Type/Length	Operating System
NUMBER-OF-EXTENTS	(A192)	z/OS, z/VSE

Number of extents used. Valid values are 1 - 255.

Field Name	Type/Length	Operating System
PERCENT-USED	(N3)	z/OS

Amount of space used in the dataset as a percentage of total space.

Field Name	Type/Length	Operating System
PRIMARY-QTY	(N10)	z/OS

Primary allocation.

Field Name	Type/Length	Operating System
RECFM	(A5)	z/OS

Record format, for example, FB.

Field Name	Type/Length	Operating System
SECONDARY-QTY	(N10)	z/OS

Secondary allocation.

Field Name	Type/Length	Operating System
SECURITY	(A5)	z/OS

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	Operating System
SERIES	(A8)	z/OS, z/VSE

Device series for the unit, for example, 3380.

Field Name	Type/Length	Operating System
SMS	(A3)	z/OS

Specifies whether the file is on an SMS-managed unit or device, YES or NO.

Field Name	Type/Length	Operating System
TRACKS-ALLOCATED	(N3)	z/OS

Number of remaining tracks allocated in addition to CYLINDERS-ALLOCATED.

Field Name	Type/Length	Operating System
UNIT	(A4)	z/OS, z/VSE

Device number of the unit on which the dataset resides.

Field Name	Type/Length	Operating System
UPDATED-SINCE-BACKUP	(A3)	z/OS

Specifies whether the file has been updated since the last backup, YES or NO.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE, BS2000

Volume serial number.

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## VTOC-UPDATE

---

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■ Additional Fields Supported for z/OS .....	492
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<b>File</b>	7
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	Perform VTOC updates, for example, rename, scratch, purge datasets.

## Common Fields for all Operating Systems

---

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 for z/OS, z/VSE.

## Additional Field Supported for z/OS, z/VSE

---

Dictionary Field Name	F/L	Mu	DE	Remarks
VOLSER	A6		D	Required.

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
LEAVE	N5		D	Relevant for FUNCTION=RELEASE..
CATALOG-UPDATE	A3		D	Relevant for FUNCTION=RENAME or SCRATCH.
WAIT	A3		D	Relevant for VOLSER=MIGRAT.



## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
ERASE-OPTION	A7		D	
ERASE-RANGE	A1		D	
PASSWORD	A8		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.			X
535	File has invalid format.	X		
539	DFHSMREQ failed with RC=...	X		
556	File is in use.			X
565	Syntax error in dataset name.			X
571	DSNAME missing.	X	X	
572	NEWNAME missing.		X	X
573	SCRATCH invalid.		X	
574	RENAME invalid.		X	
600	Unknown function.	X	X	X
659	Dataset is already cataloged.			X
701	DSNAME missing.			X
722	Requested dataset not found.			X
733	User ID does not exist.			X
750	Invalid operand within operand list.			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
851	File not on volume.	X	X	
852	No password supplied / VSAM data space.	X		
853	Retention cycle unexpired / NEWNAME exists.	X	X	X
856	Error xx while processing VTOC.		X	
856	Error assigning a logical unit.		X	
857	VTOC is in use.		X	

## Field Descriptions

---

Field Name	Type/Length	Operating System
CATALOG-UPDATE	(A3)	z/OS

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	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

Fully qualified dataset name. In BS2000, fully qualified file name.

Field Name	Type/Length	Operating System
ERASE-OPTION	(A7)	BS2000

Possible options:

Option	Explanation
CATALOG	Erase only catalog entry (only for tape files and private disks. Default for tape files).
DATA	Erase only data: keep allocated space and catalog entry (not valid for tape files).
DESTROY	Overwrite with x'00' (not valid for tape files).
SPACE	Same as DATA, but release allocated space (not valid for tape files and private disks).

Field Name	Type/Length	Operating System
ERASE-RANGE	(A1)	BS2000

Range of generation files to be deleted. Possible options:

Option	Explanation
A	All files after the generation number in DSNAME.
B	All files before the generation number in DSNAME.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

Possible functions are:

Function	Explanation
PURGE	Delete dataset or file regardless of expiration date.
RELEASE	In z/OS, release unused space.  In BS2000, this function can be performed by FUNCTION=COMPRESS in the view FILE-MAINTENANCE. This function is not supported in z/VSE.
RENAME	Rename dataset or file.
SCRATCH	Delete dataset or file.  In z/VSE, SCRATCH is equivalent to PURGE.

Field Name	Type/Length	Operating System
LEAVE	(N5)	z/OS

Number of free tracks after the unused tracks are freed with FUNCTION=RELEASE.

Field Name	Type/Length	Operating System
NEWNAME	(N54)	z/OS, z/VSE, BS2000

Relevant when FUNCTION=RENAME. New name to be assigned to the dataset or file.

In BS2000, must be supplied without CAT-ID / User ID.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	BS2000

Password for write access to file to be renamed or deleted.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number.

Field Name	Type/Length	Operating System
WAIT	(A3)	z/OS

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).

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## WRITE-FILE

---

■ Common Fields for all Operating Systems .....	498
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<b>File</b>	204
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<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>

## Common Fields for all Operating Systems

---

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	

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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.

Dictionary Field Name	F/L	Mu	DE	Remarks
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	
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.

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
BLKSIZE	B2		D	
INLINE-DATA	A3		D	
LRECL	B2		D	Required if RECFM=F.
LIBRARY	A8		D	
MEMBER	A10		D	
MEMBER-TYPE	A8		D	
MSHP	A3		D	
RECFM	A2		D	Default is F.
REPLACE	A3		D	
SUB-LIBRARY	A8		D	
VOLSER	A6		D	Required.
VSAM-CATALOG	A8		D	

## Additional Fields Supported for BS2000

---

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
DUPLICATE-KEY	A3		D	ISAM only.
ELEMENT	A64		D	
ELEMENT-PASSWORD	A8		D	
ELEMENT-RECORD-TYPE	N3		D	
ELEMENT-TYPE	A8		D	
ELEMENT-USER-DATE	A14		D	
ELEMENT-USER-TIME	A8		D	
ELEMENT-VERSION	A24		D	
EXPIRATION-DATE	A5		D	
EXPIRATION-DATX	D		D	
KEY	A253		D	
LMS-RESET-FLAG	A3			
PAD	N2		D	ISAM only.
PASSWORD	A8		D	
PRODUCT	A1		D	
RECORD-NUMBER	N9		D	
TAPE-UNLOAD	A3		D	

## Relevant Error Codes

---

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.	X		X
531	Password missing or incorrect.			X
541	Member generation not found in directory.	X		
542	GENERATION not valid for this library.	X		
551	Member not specified.			X
553	I-O error in directory.	X		
556	File is in use.	X		X
557	File held by linkage editor.	X		
558	No space in directory.	X		



Code	Text	z/OS	z/VSE	BS2000
559	Stow error.	X		
560	Segment length greater than 253.	X	X	X
565	Syntax error in dataset name.			X
590	End-of-data reached during UPDATE - INPLACE.	X		X
591	Member not found for UPDATE - INPLACE.	X		
592	Record length error for variable UPDATE - INPLACE.	X		X
608	ISITMGD failed with RC :1: and reason :2:.	X		
673	Access error due to FILETABLE=STATIC.		X	
674	VTOC error reading format-3 labels.		X	
675	:1: not supported.		X	
676	Not first volume of multi-volume file.		X	
678	Member already exists.	X	X	X
692	You are not permitted to access member.			X
697	LIBRARY / SUB - LIBRARY not found.		X	
698	Internal Librarian error.		X	
699	Not enough main storage available.			X
700	Invalid value specified (DSORG/RECFM/TYPE).			X
701	DSNAME missing.			X
722	Requested dataset not found.			X
733	User ID does not exist.			X
737	No more index space for inserting record.			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
854	Permanent I/O error.			X
856	Operator unable to mount volume.			X
860	Member is under MSHP control/bypass.		X	
861	Member contains SYSIPT data.		X	
870	RECORD field not in search buffer.	X	X	X
871	MEMBER not specified.	X	X	
872	Record format not supported.	X	X	X
873	Record length missing.	X	X	X
874	RECORD - LENGTH > LRECL.	X	X	X
875	Position of data field > RECORD - LENGTH.	X	X	X
877	VSAM (SHOWCAT) processing error		X	
881	Error occurred while opening file.			X
882	Error occurred while closing file.			X

Code	Text	z/OS	z/VSE	BS2000
883	Dataset is full.	X	X	X
889	Permanent I/O error while writing dataset.	X		X
899	Permanent I/O error while reading dataset.	X		X
901	Dynamic allocation failed.	X	X	
981	Invalid value specified (BLKCTRL/BLKSIZE/LRECL).			X
982	Error during use of ISAM key.			X
983	UPDATE - INPLACE not supported by LMS.			X
985	Access to tape file not allowed.			X
991	Unknown product.	X		X
993	Open error.	X		X
997	File not PDS/Sequential.	X		
998	Member not found.	X	X	X

## Field Descriptions

---

Field Name	Type/Length	Operating System
BLKSIZE	(B2)	z/OS, z/VSE

Block size for dataset.

z/OS:	Required only for tape datasets that have no standard label.
-------	--

Field Name	Type/Length	Operating System
BLOCK-TTR	(B3)	z/OS

Track value at which to start writing.

Field Name	Type/Length	Operating System
BLOCK-TOKEN	(B4)	z/OS

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	Operating System
DISP	(A3)	z/OS, z/VSE, BS2000

Disposition of dataset or file. Possible values:

z/OS:

Value	Explanation
MOD	Add records to the end of the sequential dataset.
OLD	Overwrite existing dataset.

BS2000:

Value	Explanation
MOD	Add records to the end of the sequential file.
NEW	Create new file.
STR	Only for ISAM files: replace or add records identified by value in KEY.

z/VSE ((VSAM (SAM ESDS) only):

Value	Explanation
MOD	Add records at the end of the dataset or file.
NEW	Overwrite existing file contents.
OLD	Same as MOD.

Field Name	Type/Length	Operating System
DSNAME	(A54)	z/OS, z/VSE, BS2000

Fully qualified dataset name. For BS2000, fully qualified file name. Specify &TEMP . *name* here to select a temporary dataset or file as specified in the Entire System Server startup parameter module. These temporary datasets or files are freed when you log off (not supported in BS2000).

Field Name	Type/Length	Operating System
DUPLICATE-KEY	(A3)	BS2000

For ISAM only:

Value	Explanation
NO	Default. No duplicate keys allowed.
YES	Duplicate keys allowed.

Field Name	Type/Length	Operating System
ELEMENT	(A64)	BS2000

Name of the LMS element to be written.

Field Name	Type/Length	Operating System
ELEMENT-PASSWORD	(A8)	BS2000

Password for protected LMS element (LMS V2 or above).

Field Name	Type/Length	Operating System
ELEMENT-RECORD-TYPE	(N3)	BS2000

Record type (LMS only).

Field Name	Type/Length	Operating System
ELEMENT-TYPE	(A8)	BS2000

Type of LMS element to be written.

Types C and L are currently not supported.

Field Name	Type/Length	Operating System
ELEMENT-USER-DATE	(A14)	BS2000

Is written as element information into LMS library. Format: *YYYY-MM-DDaaaa*, where *aaaa* can be any 4-character string.

Field Name	Type/Length	Operating System
ELEMENT-USER-TIME	(A8)	BS2000

Is written as element information into LMS library. Format: *HH:MM:SS*.

Field Name	Type/Length	Operating System
ELEMENT-VERSION	(A24)	BS2000

Version of LMS element to be written.

Field Name	Type/Length	Operating System
EXPIRATION-DATE	(A5)	BS2000

The file's new expiration date in format *YYDDD*.

Field Name	Type/Length	Operating System
EXPIRATION-DATX	(D)	BS2000

Expiration date in Natural format.

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

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	(z/OS) 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	Operating System
GENERATION	(N9)	z/OS

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

Field Name	Type/Length	Operating System
IDENTIFIER	(A8)	z/OS, z/VSE, BS2000

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	Operating System
INLINE-DATA	(A3)	z/VSE

For cataloged procedures: (see LIBR, DATA=YES). Possible values:

Value	Explanation
NO	Default. Input contains no SYSIPT data.
OFF	SYSIPT flag for existing member switched off before member is saved.
YES	Input contains SYSIPT data.

Field Name	Type/Length	Operating System
KEY	(A253)	z/OS, BS2000

ISAM/VSAM key.

Field Name	Type/Length	Operating System
LIBRARY	(A8)	z/VSE

Name of library.

Field Name	Type/Length	Operating System
LMS-RESET-FLAG	(A3)	BS20000/OSD

If YES is specified in this field with FUNCTION=CLOSE, all previous writes for this LMS element are reset.

Field Name	Type/Length	Operating System
LRECL	(B2)	z/OS, z/VSE

Logical record length. Default length is 80.

z/OS: Required only for tape datasets that have no standard label.

z/VSE: Required if RECFM=F.

Field Name	Type/Length	Operating System
MEMBER	(A10)	z/OS, z/VSE

Member name.

Field Name	Type/Length	Operating System
MEMBER-TYPE	(A8)	z/VSE

Member type.

Field Name	Type/Length	Operating System
MSHP	(A3)	z/VSE

Indicate MSHP bypass required when saving members. Possible values:

Value	Explanation
NO	No MSHP bypass required.
YES	MSHP bypass to be performed.

Field Name	Type/Length	Operating System
PAD	(N2)	BS2000

Only for ISAM: padding factor (default is 15).

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/OS, BS2000

Password for protected dataset or file.

Field Name	Type/Length	Operating System
PRODUCT	(A1)	z/OS, BS2000

Access method used. Possible options:

Option	Explanation
L	CA-Librarian
M	LMS (BS2000)
P	CA-Panvalet

Field Name	Type/Length	Operating System
PRODUCT-OPTIONS	(A80)	z/OS

Options for CA-Librarian access method (when PRODUCT=L).

Field Name	Type/Length	Operating System
RECFM	(A2)	z/OS, z/VSE

Record format of the dataset.

z/OS: Required only for tape datasets that have no standard label.

z/VSE: Default is F.

Field Name	Type/Length	Operating System
RECORD	(A253)	z/OS, z/VSE, BS2000

Record to be written.

Field Name	Type/Length	Operating System
RECORD-LENGTH	(N5)	z/OS, z/VSE, BS2000

Length of record (used only if record format is variable). Can be omitted in BS2000.

Field Name	Type/Length	Operating System
RECORD-NUMBER	(N9)	BS2000

Number of record to be written.

Field Name	Type/Length	Operating System
REPLACE	(A3)	z/OS, z/VSE

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	Operating System
SEGMENT-LENGTH	(N3)	z/OS, z/VSE, BS2000

Length of segment.



Field Name	Type/Length	Operating System
SEGMENT - NUMBER	(N5)	z/OS, z/VSE, BS2000

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	Operating System
STATS	(A3)	z/OS

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.

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	Operating System
SUB - LIBRARY	(A8)	z/VSE

Name of sublibrary.

Field Name	Type/Length	Operating System
TAPE - UNLOAD	(A3)	z/OS, BS2000

Unload TAPE during CLOSE:

YES: Unload tape.

NO: Tape is rewound and positioned to beginning of tape (default).

Field Name	Type/Length	Operating System
UPDATE - INPLACE	(A3)	z/OS, z/VSE, BS2000

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	Operating System
USER-DATA	(A120)	z/OS

User data for PDS member, for example, save date, size. Relevant when FUNCTION=CLOSE.

Field Name	Type/Length	Operating System
USER-DATA-HEX	(B120)	z/OS

User data for the member in hexadecimal format.

Field Name	Type/Length	Operating System
USER-DATA-LENGTH	(N3)	z/OS

Length of data for PDS member. Relevant when FUNCTION=CLOSE.

Field Name	Type/Length	Operating System
VOLSER	(A6)	z/OS, z/VSE

Volume serial number (required if dataset is not cataloged).

Field Name	Type/Length	Operating System
VSAM-CATALOG	(A8)	z/VSE

Name of the VSAM catalog where the library is kept.

## 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).

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## WRITE-SPOOL

---

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<b>File</b>	203
<b>Op-Sys</b>	z/OS, z/VSE, BS2000
<b>Statement</b>	PROCESS
<b>Task</b>	This view makes it possible to write data directly to spool queues (z/OS: JES, z/VSE : POWER). In BS2000, this view performs a PRINT. See also <a href="#">WRITE-SPOOL Programming Notes</a> at the bottom of this view description.

## Common Fields for all Operating Systems

---

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.

## Additional Fields Supported for z/OS

---

Dictionary Field Name	F/L	Mu	DE	Remarks
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.

Dictionary Field Name	F/L	Mu	DE	Remarks
JOB-ID	A8		D	
JOB-NUMBER	N7		D	
PORTNO	N5		D	
PROGRAM	A8		D	
PRTOPTNS	A16		D	
PRTQUEUE	A127		D	
REMOTE-USERID	A8		D	
TRC	A3		D	

## Additional Fields Supported for z/VSE

Dictionary Field Name	F/L	Mu	DE	Remarks
BURST	A3		D	
CLASS	A1		D	
COMPACT	A4		D	
COPY-MODIFY-MODULE	A4		D	
COPY-MODIFY-TABLE	A4		D	
DISPOSITION	A1		D	
FLASH-COUNT	N3		D	
JOB-NAME	A8		D	
PROGRAM	A8		D	
SEGMENTATION-SIZE	B4		D	
SEP-PAGES-COPIES	A3		D	
SEP-PAGES-COUNT	B1		D	
TARGET-NODE	A8		D	
UCS	A8		D	
UCS-OPTIONS	A2		D	
USER-INFO	A16		D	

## Additional Fields Supported for BS2000

Dictionary Field Name	F/L	Mu	DE	Remarks
SYSTEM-CODE	B2			
BINARY	A3		D	
CHARS	A64		D	
CHARS-MODIFICATION	A3		D	
CONTROL-OPTION	A16		D	
DEVICE	A8		D	
DIA	A2		D	
DSNAME	A54		D	
ELEMENT	A64		D	
ELEMENT-PASSWORD	A8		D	
ELEMENT-TYPE	A8		D	
ELEMENT-VERSION	A24		D	
END-NUMBER	N5		D	
FROM-LINE-NUMBER	N10		D	
FROM-PAGE-NUMBER	N10		D	
HEADER	A5		D	
HEADER-NUMBER	N10		D	
IDENTIFIER	A8		D	Required if multiple update views are executing in parallel.
IMAGE	A28		D	
JOB-ID	A8		D	
JOB-NAME	A8		D	
JOB-NUMBER	N7		D	
LINES	N3		D	
LOCK	A3		D	
LOOP	A3		D	
PASSWORD	A8		D	
RSO-FILE-NAME	A28		D	
START-NUMBER	N5		D	
TEXT	A32		D	
TO-LINE-NUMBER	N10		D	
TO-PAGE-NUMBER	N10		D	
TRAIL-NUMBER	N10		D	
TRANSLATION-TABLE	A8		D	



Dictionary Field Name	F/L	Mu	DE	Remarks
TRAY	N1		D	

## Relevant Error Codes

Code	Text	z/OS	z/VSE	BS2000
530	Access denied by Security Facility.			X
556	File is in use.	X	X	X
565	Syntax error in dataset name.			X
692	You are not permitted to access member.			X
699	GETVIS failed.	X	X	
701	DSNAME missing.			X
722	Requested dataset not found.			X
733	User ID does not exist.			X
750	Invalid operand within operand list.			X
798	Task was not started under TSOS.			X
799	Entire System Server internal error.			X
856	Operator unable to mount volume.			X
870	RECORD field not in search buffer.	X	X	
872	RECFM not supported.	X	X	
873	Record length missing.	X	X	
874	RECORD-LENGTH > LRECL.	X	X	
883	Dataset is full.	X		X
889	Permanent I/O error while writing dataset.	X	X	X
900	Dynamic sysout allocation failed.	X		
901	Dynamic internal read alloc failed.	X		
901	POWER interface is not active.		X	
903	Dynamic allocation failed for temporary dataset.			X
983	LMS not supported by PRINT.			X
985	Access to tape file not allowed.			X
991	Unknown product.	X		X
993	Open error.	X	X	
998	Member not found.	X	X	X

## Field Descriptions

---

Field Name	Type/Length	Operating System
BINARY	(A3)	BS2000

Print in hexadecimal format or not:

Value	Explanation
NO	Character
YES	Hexadecimal

Field Name	Type/Length	Operating System
BURST	(A3)	z/VSE

Burst option. Possible values:

Value	Explanation
NO	Default
YES	

Field Name	Type/Length	Operating System
CHARS	(A64)	z/OS, BS2000

Four groups of four bytes each, taken from the JCL

```
'(CHARS=(AAAA,BBBB,CCCC,DDDD))'
```

In BS2000, it is taken from the CHARS parameter of the PRINT command. Possible values:

- AAAA
- AAAABBBB
- AAAABBBBCCCC
- AAAABBBBCCCCDDDD

Sixteen groups of four bytes can be specified for RSO printers (maximum 64 bytes).

Field Name	Type/Length	Operating System
CHARS-MODIFICATION	(A3)	BS2000

Possible values:

Value	Explanation
YES	Default. All characteristics of character sets are supported.
NO	Only character type, language and near-letter-quality are supported.

Field Name	Type/Length	Operating System
CLASS	(A1)	z/OS, z/VSE

SYSOUT class. If omitted, the default class of the Entire System Server node is used.

Field Name	Type/Length	Operating System
COMPACT	(A4)	z/VSE

Name of compaction table.

Field Name	Type/Length	Operating System
CONTROL	(A1)	z/OS, z/VSE, BS2000

Carriage control mode:

Value	Explanation
<i>n</i>	(BS2000) number of new lines after each line.
A	Position 1 is ASA code.
E	SPACE=E (BS2000).
I	SPACE=I (in BS2000 for IBM carriage control characters).
M	Position 1 is machine code.

Field Name	Type/Length	Operating System
CONTROL-OPTION	(A16)	BS2000

Possible values:

- NO
- LINEMODE
- LOGICAL
- PHYS

- PHYSICAL
- TRANSPARENT

For an explanation, see the description of the `CONTROL` parameter of the BS2000 command `PRINT`.

Field Name	Type/Length	Operating System
COPIES	(B1)	z/OS, z/VSE, BS2000

Number of `SYSOUT` copies.

Field Name	Type/Length	Operating System
COPY-MODIFY-MODULE	(A4)	z/VSE

Copy modification module name.

Field Name	Type/Length	Operating System
COPY-MODIFY-TABLE	(A4)	z/VSE

Character arrangement table for copy modification.

Field Name	Type/Length	Operating System
DATA-SET-ID	(A54)	z/OS

Internal dataset name of the `SYSOUT` file (returned after the `CLOSE` function).

Field Name	Type/Length	Operating System
DDNAME	(A8)	z/OS

The `DDNAME` of the spool file.

Field Name	Type/Length	Operating System
DESTINATION	(A127)	z/OS, z/VSE, BS2000

- `z/OS`: 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).

- `z/VSE` : Remote destination of this dataset.
- `BS2000`: Device type of printer (`ND`, `HP`), if the `DEVICE` field is specified.

Field Name	Type/Length	Operating System
DEVICE	(A8)	BS2000

RSO printer.

Field Name	Type/Length	Operating System
DIA	(A2)	BS2000

Form DIA name.

Field Name	Type/Length	Operating System
DISPOSITION	(A1)	z/VSE

Disposition to be assigned to spool output.

Field Name	Type/Length	Operating System
DSNAME	(A54)	BS2000

Name of the file to be printed out. Note that FUNCTION=CLOSE is required to start the printout.

Field Name	Type/Length	Operating System
ELEMENT	(A64)	BS2000

Name of the LMS element to be written (BS2000 version V10 or above).

Field Name	Type/Length	Operating System
ELEMENT-PASSWORD	(A8)	BS2000

Password for protected LMS element (BS2000 version V10 or above and LMS V2 or above).

Field Name	Type/Length	Operating System
ELEMENT-TYPE	(A8)	BS2000

Type of LMS element to be written (BS2000 version V10 or above).

Field Name	Type/Length	Operating System
ELEMENT-VERSION	(A24)	BS2000

Version of LMS element to be written (BS2000 version V10 or above).

Field Name	Type/Length	Operating System
END - NUMBER	(N5)	BS2000

Number of the last column in the line to be printed. Value range: 1 <= value <= 32767

Field Name	Type/Length	Operating System
FCB	(A4)	z/OS, z/VSE

FCB name.

Field Name	Type/Length	Operating System
FLASH	(A4)	z/OS, z/VSE

Flash for 3800.

Field Name	Type/Length	Operating System
FLASH - COUNT	(N3)	z/VSE

Flash count.

Field Name	Type/Length	Operating System
FORM	(A8)	z/OS, z/VSE, BS2000

SYSOUT form.

Field Name	Type/Length	Operating System
FROM - LINE - NUMBER	(N10)	BS2000

Starting line number of output list.

Field Name	Type/Length	Operating System
FROM - PAGE - NUMBER	(N10)	BS2000

Starting page number of output list.

Field Name	Type/Length	Operating System
FSSDATA	(A127)	z/OS

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	Operating System
FUNCTION	(A8)	z/OS, z/VSE, BS2000

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.
SEGMENT	z/VSE only. Create a new POWER segment after writing next line.

Field Name	Type/Length	Operating System
HEADER	(A5)	BS2000

Print a headline on each page. Possible values are:

Value	Explanation
D	DATE in format YY-MM-DD.
D, T, P	All values are in headline.
NO	No headline.
P	PAGE <i>nnnn</i> .
T	First record is headline.

Field Name	Type/Length	Operating System
HEADER-NUMBER	(N10)	BS2000

Number of cover pages for the output list. Range of values:  $0 \leq \text{value} \leq 2^{31} - 1$

Field Name	Type/Length	Operating System
HOLD	(A8)	z/OS

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	Operating System
IDENTIFIER	(A8)	z/OS, BS2000

Required if multiple update views are executing in parallel, all requests for the same process must have the same identifier.

Field Name	Type/Length	Operating System
IMAGE	(A28)	BS2000

Specifies a user file which includes LOOP records, character sets, etc.

Field Name	Type/Length	Operating System
JOB-ID	(A8)	z/OS, BS2000

Returned for FUNCTION=CLOSE.

z/OS & z/VSE :	Job number in alphanumeric format.
BS2000:	TSN of job in alphanumeric format. This field must be used for V10 or above with alphanumeric TSNs.

Field Name	Type/Length	Operating System
JOB-NAME	(A8)	z/VSE , BS2000

Name of the job under which the output is to be printed.

Field Name	Type/Length	Operating System
JOB-NUMBER	(N7)	z/OS, BS2000

Returned for FUNCTION=CLOSE.

z/OS, z/VSE : Job number.

BS2000: TSN of job.

Field Name	Type/Length	Operating System
LINES	(N3)	BS2000

Number of lines per page.



Field Name	Type/Length	Operating System
LOCK	(A3)	BS2000

Protect output against modifications during wait as Task Type 4. Possible options:

Option	Explanation
NO	Output not protected.
YES	Output protected.

Field Name	Type/Length	Operating System
LOOP	(A3)	BS2000

Name of LOOP record.

Field Name	Type/Length	Operating System
PASSWORD	(A8)	z/VSE , BS2000

z/VSE : Password of job.

BS2000: Password, if the file is protected.

Field Name	Type/Length	Operating System
PORTNO	(N5)	z/OS

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	Operating System
PROGRAM	(A8)	z/OS, z/VSE

Name of writer program to process this dataset.

Field Name	Type/Length	Operating System
PRTOPTNS	(A16)	z/OS

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	Operating System
PRTQUEUE	(A127)	z/OS

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	Operating System
RECORD	(A253)	z/OS, z/VSE, BS2000

Record to be written.

Field Name	Type/Length	Operating System
RECORD-LENGTH	(N3)	z/OS, z/VSE, BS2000

Length of record.

Field Name	Type/Length	Operating System
REMOTE-USERID	(A8)	z/OS

User ID for printing at remote destinations.

Field Name	Type/Length	Operating System
RSO-FILE-NAME	(A28)	BS2000

Name of translation table for RSO printer. For detailed information, see the description of the TRANSLATION-TABLE parameter (name2) of the BS2000 command PRINT.

Field Name	Type/Length	Operating System
SEGMENTATION-SIZE	(B4)	z/VSE

Size (in lines) of each segment to be written.

Field Name	Type/Length	Operating System
SEP-PAGES-COPIES	(A3)	z/VSE

Copy separators required. Possible values:

Value	Explanation
NO	Default
YES	

Field Name	Type/Length	Operating System
SEP - PAGES - COUNT	(B1)	z/VSE

Number of separator pages.

Field Name	Type/Length	Operating System
START - NUMBER	(N5)	BS2000

Number of first column in line for print. Range of values:  $0 \leq \text{value} \leq 32767$

Field Name	Type/Length	Operating System
TARGET - NODE	(A8)	z/VSE

Name of target node.

Field Name	Type/Length	Operating System
TEXT	(A32)	BS2000

Saved in spool control block (SCB). The first 8 characters are used as text at the header page.

Field Name	Type/Length	Operating System
TO - LINE - NUMBER	(N10)	BS2000

Ending line number of output list.

Field Name	Type/Length	Operating System
TO - PAGE - NUMBER	(N10)	BS2000

Ending page number of output list.

Field Name	Type/Length	Operating System
TRAIL - NUMBER	(N10)	BS2000

Number of trailing pages for the output list. Range of values:  $0 \leq \text{value} \leq 2^{31} - 1$

Field Name	Type/Length	Operating System
TRANSLATION-TABLE	(A8)	BS2000

Name of translation table for RSO printer. For detailed information, see the description of the TRANSLATION-TABLE parameter (name1) of the BS2000 command PRINT.

Field Name	Type/Length	Operating System
TRAY	(N1)	BS2000

Specifies the tray number. Possible values: 1 - 9.

Field Name	Type/Length	Operating System
TRC	(A3)	z/OS

Value	Explanation
YES	Byte 2 in record used for CHARS (3800) (DCB=OPTCB=J specified).

Field Name	Type/Length	Operating System
UCS	(A8)	z/VSE

UCB name.

Field Name	Type/Length	Operating System
UCS-OPTIONS	(A2)	z/VSE

UCB options. Possible values:

Value	Explanation
B	Block data check option.
F	Fold option.

Field Name	Type/Length	Operating System
USER-INFO	(A16)	z/VSE

User information.

## WRITE-SPOOL Programming Notes

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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.



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## WRITE-UNIX-FILE

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■ Fields (z/OS only) .....	532
■ Relevant Error Codes .....	532
■ Field Descriptions .....	533

<b>File</b>	215
<b>Op-Sys</b>	z/OS
<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 (z/OS only)

---

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

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Code	Text	z/OS
530	Access denied by Security Facility.	X
553	I-O error in directory.	X
568	File or directory not found.	X
899	I/O ERROR DURING WRITE	X



## Field Descriptions

Field Name	Type/Length	Operating System
NODE	(N5.0)	z/OS

D Node ID (DBID).

Field Name	Type/Length	Operating System
ERROR-CODE	(N3.0)	z/OS

Message code.

Field Name	Type/Length	Operating System
ERROR-TEXT	(A58)	z/OS

Text describing error.

Field Name	Type/Length	Operating System
NODE-NAME	(A16)	z/OS

Name of Node.

z/OS:

Field Name	Type/Length	Operating System
SYSTEM-MESSAGE-CODE	(A10)	z/OS

Field Name	Type/Length	Operating System
FUNCTION	(A8)	z/OS

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	Operating System
PATH	(A128)	z/OS

Fully qualified path name of file to be written.

Field Name	Type/Length	Operating System
RECORD	(A253)	z/OS

Contents of record.

Field Name	Type/Length	Operating System
IDENTIFIER	(A8)	z/OS

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	Operating System
RECORD-LENGTH	(N3.0)	z/OS

Length of record to be written. Default is 132.

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## Related Literature

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- **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)

