z/OS Introduction and Workshop

Components, Messages, and SYSLOG

Unit Objectives

After completing this unit, you should be able to:

- Describe format of z/OS messages
- Describe component identifier
- Describe difference between base ‘elements’ and optional ‘features’
- Describe SYSLOG format

Messages

The ability to read and interpret messages is an important skill within any operating system environment.

z/OS messages follow a format which enables an experienced technician to quickly identify who wrote the message and why the message was written.

Messages provide the ability to assess the status of the operating system, optional software products and applications.

z/OS is a collection of components

Each **component** is a **collection of modules**

Base components are always included in the operating system

Base components are also known as base '**elements**' which deliver essential operating system functions.

Optional components are installed in addition to the base components

Optional components are also known as '**features**' which are requested separately from the base operating system '**elements**'

z/OS is a collection of components

A **unique 3 characters** are assigned to individual components

IKJ (TSO, Time Sharing Option)

Module names of a component are prefixed by **unique 3 characters**

IKJEFT01 (TSO terminal monitor program)

Message written by a component module begins with the same **unique 3 characters**

IKJ56646I (IKJEFT01 message)

The same **message format** is used by both the base components and optional components with very few exceptions. The message format helps isolate and solve problems. The message format is divided into three parts:

1. reply identifier (optional)
2. message identifier
3. message text

z/OS Format of the Message Body

Message body consists of three parts:

1. reply identifier (***optional***), a number
2. message identifier
3. message text

The following formats are possible:

	1	**2**	**3**
•	id	CCCnnn	text
•	id	CCCnnns	text
•	id	CCCnnnns	text
•	id	CCCnnnnns	text
•	id	CCCSnnns	text

CCC – component

S – subcomponent

n – unique message number

s – type code (a, e, i, w)

a – action, **e** – eventual, **i** – information, **w** - warning

z/OS Format of the Message Body

id CCCnnn text
id CCCnnns text
id CCCnnnns text
id CCCnnnnns text
id CCCSnnns text

This is a snippet from MVS System Messages Volume 1 – Introduction

Id reply identifier: It is optional. It appears if an operator reply is required. The operator specifies it in the reply.

CCCnnn, CCCnnns, CCCnnnns, CCCnnnnns, CCCSnnns

Message identifier.

CCC - prefix to **identify** the **component**, subsystem, or product that produced the message. The prefix is **three characters**.

S - subcomponent identifier, which is an optional addition to the prefix to identify the subcomponent that produced the message. The subcomponent identifier is one character.

nnn, nnnn, nnnnn - serial number to identify the individual message. The serial number is three, four, or five decimal digits.

s - optional type code, which is one of the following:

- A Action: The operator must perform a specific action.
- D Decision: The operator must choose an alternative.
- E Eventual action: The operator must perform action when time is available.
- I Information: No operator action is required.
- S Severe error: Severe error messages are for a system programmer.
- T Terminate: The IEBCOPY program terminates.
- W Wait: Processing stops until the operator performs a required action.

text The text provides information, describes an error, or requests an operator action.

z/OS Format of the Message Body

CCCnnns text

IKJ144I UNDEFINED USERID(S)

CCC – component (IKJ)

S – subcomponent (none)

n – unique message number (144)

s – type code (I – Information)

What is the System Log (SYSLOG)?

The system log (SYSLOG) is a chronological listing of messages about z/OS system activity and other major middleware software products using z/OS services (such as TSO, CICS, DB2, WebSphere, etc.)

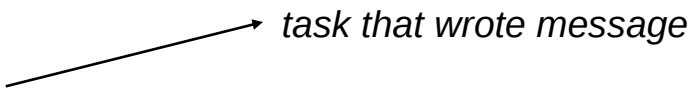
Write informational, warning, error and action messages to SYSLOG

The output of system commands are written to SYSLOG

When an unexpected system problem occurs, the SYSLOG is the first place to look to gather information about the problem

System Log (SYSLOG) Format?

Each SYSLOG entry has the following format:



tcrrrrrrr sysname yyddd hh:mm:ss.th **ident** msgflags < message id – message text >

t record type (***single line***, ***multiple line***, or ***reply required***)

c system command (***input***, ***response*** or ***internal***)

rrrrrrr routing code for console messages

SYSLOG Format (**tcrrrrrr**)

t - first character indicates the record type:

D - Data line of a multiple-line message; this line may be the last line of the message.
E - End line or data-end line of a multiple-line message.
L - Label line of a multiple-line message.
M - First line of a multiple-line message.
N - Single-line message that does not require a reply.
O - Operator LOG command.
S - Continuation of a single-line message or a continuation of the first line of a multi-line message. This continuation may be required because of the record length for the output device.
W - A message that requires a reply.
X - A log entry that did not originate with a LOG command or a system message.

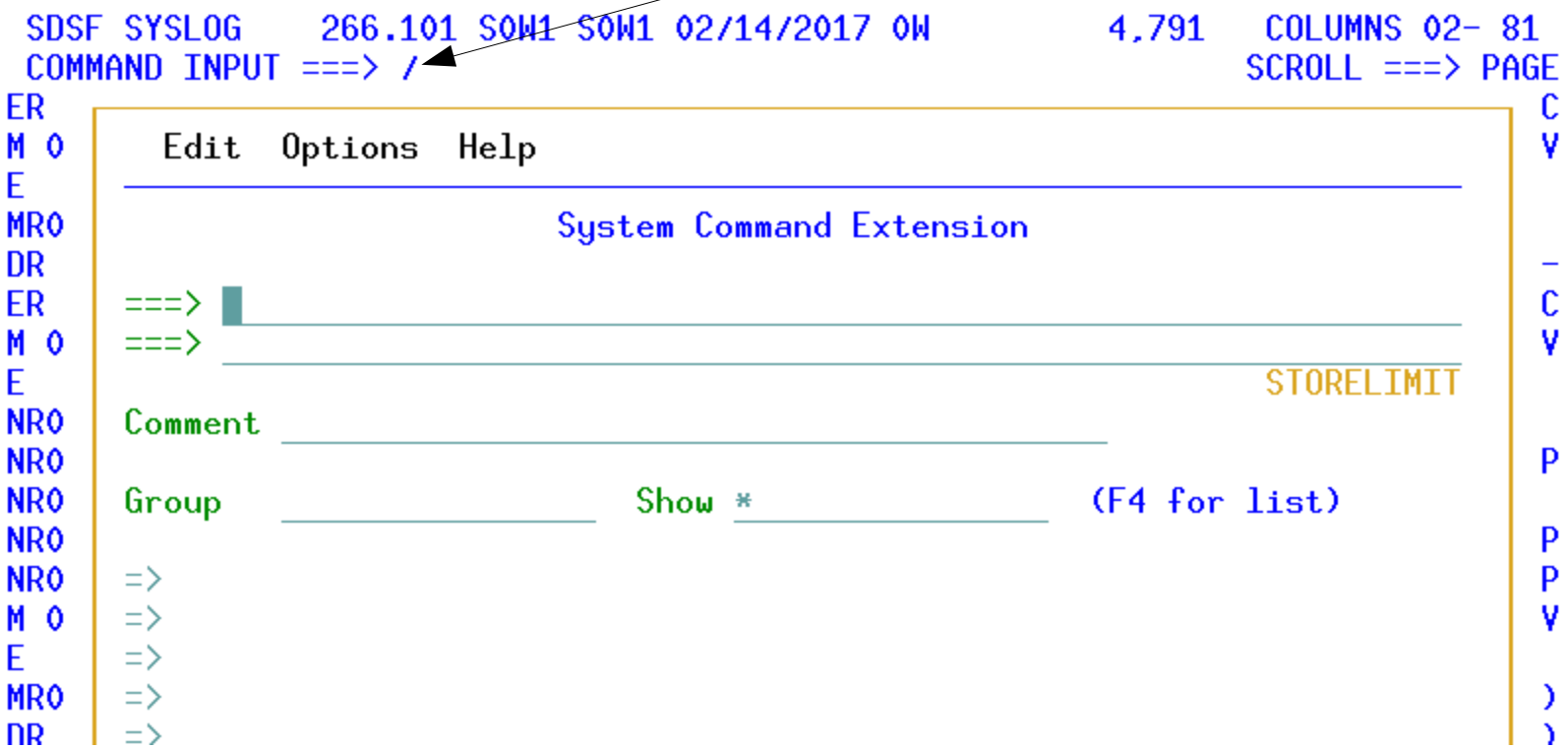
c - second character indicates whether the line was generated because of a command:

C - Command input.
R - Command response.
I - Command issued internally. The job identifier contains the name of the internal issuer.
blank - Neither command input nor command response.

rrrrrr - routing codes

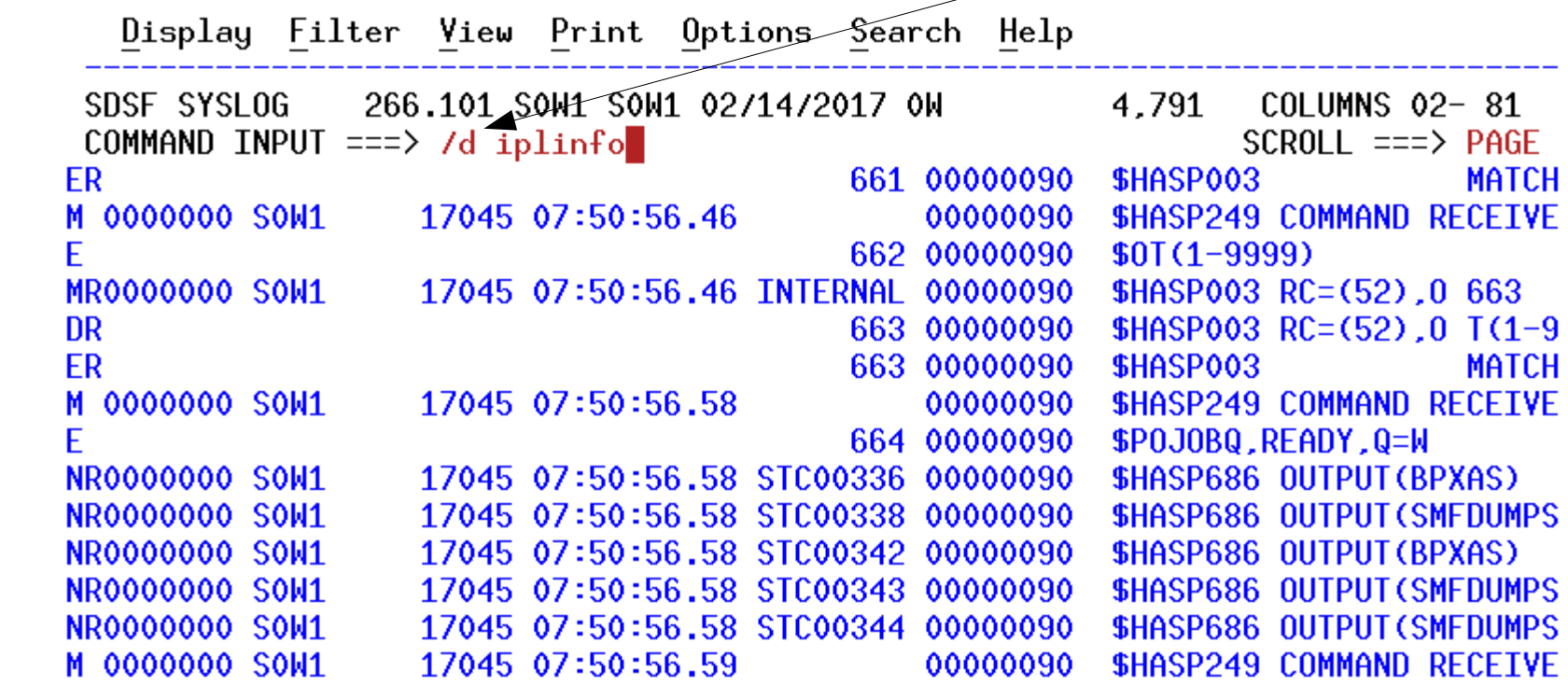
SYSLOG Format Example

/ tells SDSF to pass command to z/OS for execution



SYSLOG Format Example

/ *tells SDSF to pass command to z/OS for execution*



SYSLOG Format Example

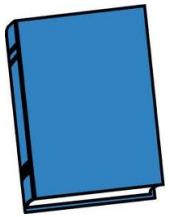
```
 SDSF SYSLOG    266.101 S0W1 S0W1 02/14/2017 0W          4,846   COLUMNS 02- 81
 COMMAND INPUT ===> _                                           SCROLL ===> CSR
NC0000000 S0W1     17045 08:44:38.40 ZIBM050  00000290  D IPLINFO
MR0000000 S0W1     17045 08:44:38.40 ZIBM050  00000090  IEE254I  08.44.38 IPLINF
DR                                      698 00000090   SYSTEM IPLED AT 13.50.3
DR                                      698 00000090   RELEASE z/OS 02.02.00
DR                                      698 00000090   USED LOADW1 IN SYS1.IPL
DR                                      698 00000090   ARCHLVL = 2   MTLSHARE
DR                                      698 00000090   IEASYM LIST = (W1,SV,VN
DR                                      698 00000090   IEASYS LIST = (00,LV,SV
DR                                      698 00000090   IODF DEVICE: ORIGINAL(0
ER                                      698 00000090   IPL DEVICE: ORIGINAL(01
******************************** BOTTOM OF DATA ********************************
```

F11 or right command to shift right

```
 SDSF SYSLOG    266.101 S0W1 S0W1 02/14/2017 0W          4,846   COLUMNS 52- 131
 COMMAND INPUT ===> _                                           SCROLL ===> CSR
---+----6----+----7----+----8----+----9----+----0----+----1----+----2----+----3-
0290  D IPLINFO
0090  IEE254I  08.44.38 IPLINFO DISPLAY 698
0090   SYSTEM IPLED AT 13.50.34 ON 02/13/2017
0090   RELEASE z/OS 02.02.00    LICENSE = z/OS
0090   USED LOADW1 IN SYS1.IPLPARM ON 00CE3
0090   ARCHLVL = 2   MTLSHARE = N
0090   IEASYM LIST = (W1,SV,VN)
0090   IEASYS LIST = (00,LV,SV,VN) (OP)
0090   IODF DEVICE: ORIGINAL(00CE3) CURRENT(00CE3)
0090   IPL DEVICE: ORIGINAL(01000) CURRENT(01000) VOLUME(VIMVSB)
******************************** BOTTOM OF DATA ********************************
```

Documentation and Information

MVS System Messages



Unit summary

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