



Legac-E Education

How JCL Procedure Libraries (PROCLIBS) are located.

Default search order

1. **In-stream**

The first place the system tries to locate a procedure is within the input stream itself. This means that any in-stream procedure with the same name as a catalogued procedure will prevent the catalogued procedure from being executed within that job.

This provides a useful mechanism for fixing errors within procedures when not authorised to update the procedure library.

If there is no matching in-stream procedure the search will continue with any private libraries which are defined as per Step 2 below.

2. **Private libraries**

If the procedure is not located in-stream, the private libraries specified on the **JCLLIB** statement are searched next. If the **JCLLIB** statement refers to multiple libraries then they are searched in the order they appear on the statement.

If there is no **JCLLIB** statement the system continues the search using the System Libraries as per Step 3 below.

3. **System libraries**

Finally the system libraries (default libraries) will be searched for the procedure.

What constitutes the system libraries will depend upon whether JES2 or JES3 is in use. (See the topics below.)

*If the procedure is not located by the end of Step 3 above then a JCL error **PROCEDURE NOT FOUND** will occur.*



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System Library definition

JES2

In JES2 the System (default) procedure libraries are defined on the `//PROC00 DD` statement within JES2's own JCL procedure, as illustrated by the text in red below.

```
//JES2      PROC MEMBER=JES2PARM,ALTMEM=JES2BACK
//IEFPROC   EXEC PGM=HASJES20,TIME=1440
//ALTPARM   DD   DISP=SHR,DSN=ADCD.PARMLIB(&ALTMEM)
//HASPPARM  DD   DISP=SHR,DSN=ADCD.PARMLIB(&MEMBER)
//PROC00    DD   DSN=USER.PROCLIB,DISP=SHR
//          DD   DSN=SYS1.PROCLIB,DISP=SHR
//PROC01    DD   DSN=PAYROLL.PROCLIB,DISP=SHR
//PROC02    DD   DSN=BILLING.PROCLIB,DISP=SHR
//HASPLIST  DD   DDNAME=IEFRDER
```

Traditionally JES2 catered for User procedure libraries by simply allowing a suffix greater than 00 up to a maximum of 99. These days any valid **DDNAME** is allowed.

In the example above, **PROC01** defines the Payroll procedure library, and **PROC02** defines the Billing procedure library.

Choosing an alternative set of System Libraries to the default can be achieved via the JES2 Command Statement `/*JOBPARM`. So using the example JES2 procedure above, to run a Billing Procedure the job would look something like:

```
//BILLRUN1 JOB other operands as required
/*JOBPARM P=02
//S0010     EXEC PROC=BILLRUN1
```

If the `/*JOBPARM P=ddname` statement is incorrect, i.e. the specified ddname cannot be located within the JES2 JCL Procedure, then JES2 will search the **PROC00** libraries, i.e. the default libraries, it does not generate a JCL error unless the procedure itself is either not found or contains an error.

The functionality of `/*JOBPARM P=ddname` can also be provided by the more modern **JCLLIB** statement.



How JCL Procedure Libraries (PROCLIBS) are located.

JES3

In JES3 the 4 procedure library definitions, are dynamically allocated via the initialisation member `JES3IN00`, via the `JES3IN DD` statement in the JES3 JCL procedure. Of the four definitions, `IATPLBI1` is the one for the Internal Reader, i.e. jobs submitted from TSO for example.

```
* STANDARD PROCLIBS
*
DYNALLOC,DDN=IATPLBST,DSN=SYS1.PROCLIB
*
* INTERNAL READER PROCLIBS
*
DYNALLOC,DDN=IATPLBI1,DSN=SYS2.PROCLIB
DYNALLOC,DDN=IATPLBI1,DSN=SYS1.PROCLIB
DYNALLOC,DDN=IATPLBI2,DSN=PAYROLL.PROCLIB
DYNALLOC,DDN=IATPLBI3,DSN=BILLING.PROCLIB

*
* STARTED UP TASK CONTROL PROCLIBS
*
DYNALLOC,DDN=IATPLBS1,DSN=SYS2.PROCLIB
DYNALLOC,DDN=IATPLBS1,DSN=SYS1.PROCLIB
*
* TSO USER LOGON PROCLIBS
*
DYNALLOC,DDN=IATPLBT1,DSN=SYS2.PROCLIB
DYNALLOC,DDN=IATPLBT1,DSN=SYS1.PROCLIB
```

In the example above the lines in red represent the User Library equivalents of `PROC01` and `PROC02` in the JES2 example.

In the same way that JES2 can vary the search chain by using `/*JOBPARM P=`, JES3 provides equivalent functionality via the `/*MAIN PROC=` statement.

The functionality of `/*MAIN PROC=` statement can also be provided by the more modern `JCLLIB` statement.

A potential benefit of using the `/*MAIN PROC=` statement is that, **only the specified library will be search.**



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How does z/OS locate the Job Entry Subsystem JCL procedure?

It doesn't matter whether the installation is executing JES2 or JES3 as the Job Entry System z/OS needs to be able to locate the relevant JCL procedure. This means that even before JES is initiated it needs a default procedure library and this is achieved via the Master Scheduler.

The JCL for the Master Scheduler was originally held in module **MSTJCLnn** in **SYS1.LINKLIB**, and while this module may still be present, it is more likely that **MSTJCLnn** will be found in **PARMLIB** on modern systems, as shown below;

```
//MSTJCL00 JOB MSGLEVEL=(1,1),TIME=1440
//          EXEC PGM=IEEMB860,DPRTY=(15,15)
//STCINRDR DD SYSOUT=(A,INTRDR)
//TSOINRDR DD SYSOUT=(A,INTRDR)
//IEFPDSI  DD DSN=USER.PROCLIB,DISP=SHR
//          DD DSN=FEU.&SYSVER..PROCLIB,DISP=SHR
//          DD DSN=ADCD.&SYSVER..PROCLIB,DISP=SHR
//          DD DSN=SYS1.PROCLIB,DISP=SHR
//SYUADS   DD DSN=SYS1.UADS,DISP=SHR
//SYSLBC   DD DSN=SYS1.BROADCAST,DISP=SHR
```

In this example from a z/OS 2.2 system it can be seen that up to four procedure libraries will be searched to locate the relevant JES JCL procedure.