



JCL

Chapter c1

Nested procedures

Job Control Language

Chapter a1. Introduction to JCL

Chapter a2. Coding JOB statements

Chapter a3. Coding EXEC statements

Chapter a4. Coding DD statements

Chapter a5. Analyzing job output

Chapter a6. Conditional processing

Job Control Language

Chapter b1. Using special DD statements

Chapter b2. Introducing procedures

Chapter b3. Modifying EXEC parameters

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Chapter b5. Determining the effective JCL

Chapter b6. Symbolic parameters

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Chapter c2. Cataloging procedures.

Chapter c3. Using utility programs

Chapter c4. Sample utility application

Nested procedures.

Chapter c1

Nested procedures

Nested procedures.

Unit introduction.

We will be able to code a statement to invoke and modify a nested procedure.

Invoking nested procedures.

Nested procedure.

What is a nested procedure?

When procedures are nested, one procedure invokes another.

Nested procedure – an example:

There are three procedures:

PROCA

PROCB

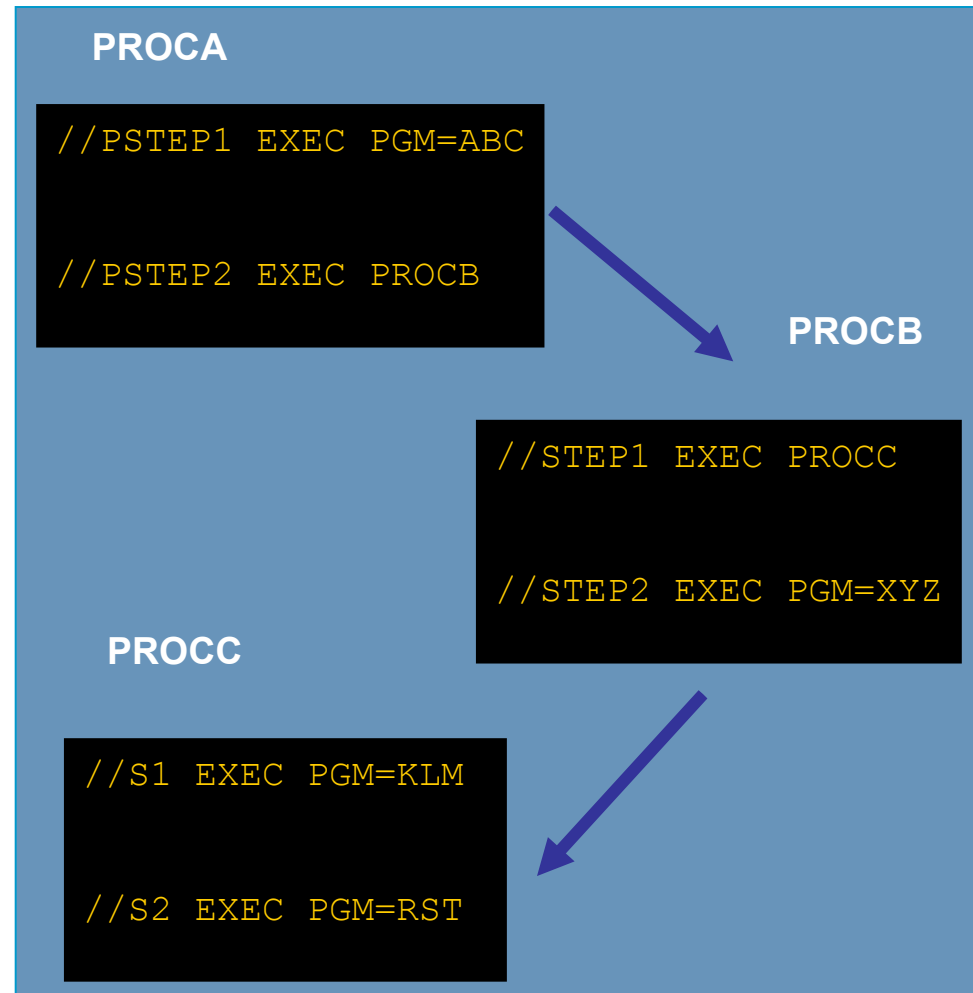
PROCC

In the example on the right, there are three procedures:

PROCA, PROCB, and PROCC.

PROCA invokes PROCB, and

PROCB invokes PROCC.

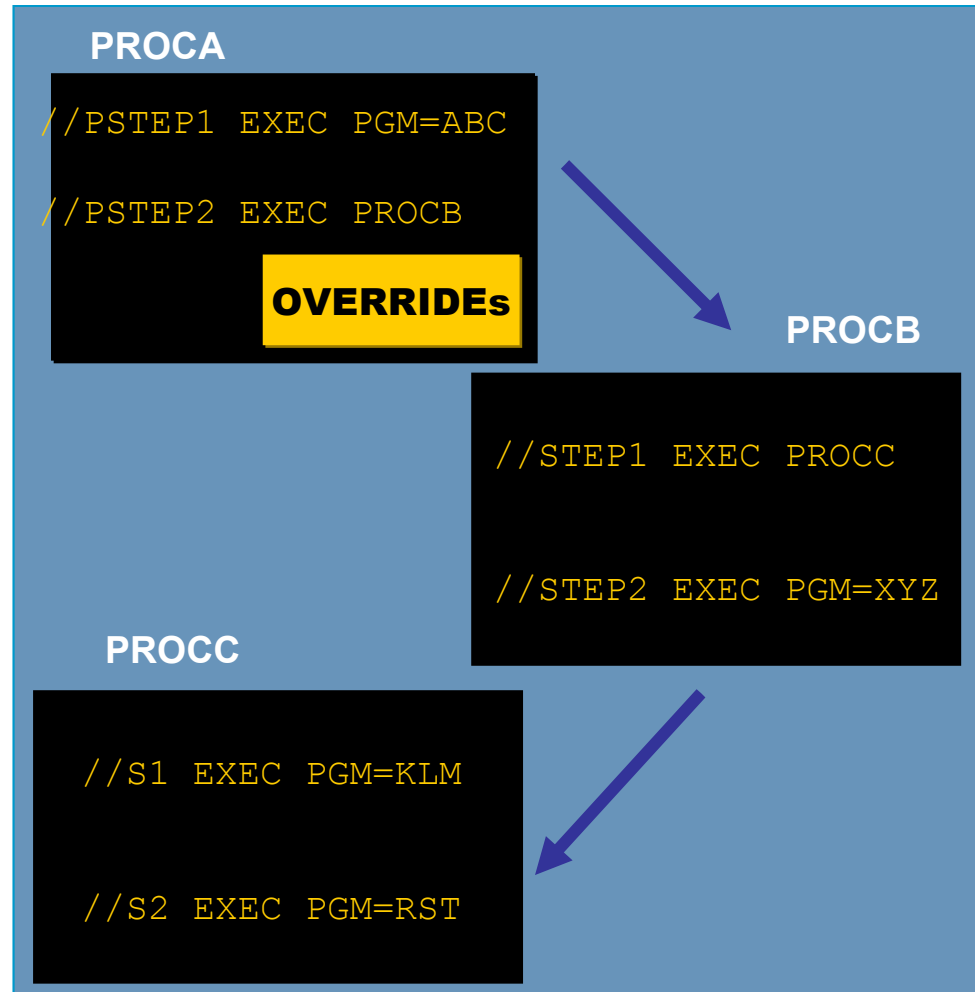


Invoking nested procedures.

Coding overrides and additions.

Procedures can be nested up to 15 levels.

Changes to nested procedures can be complex, since you can only override a procedure at the point where it is called. In the example on the right, PROCA can override PROCB on its `//PSTEP2 EXEC`.



Invoking nested procedures.

Coding overrides and additions – an example.

Assume PROCA and PROCB have the JCL shown. Note that PROCA invokes PROCB.

You want to add an addition statement with a DDname of DD1 to both procedures.

PROC A:

```
//PROCA PROC  
//PROCA1 EXEC PGM=IEFBR14  
//OUT DSN=KOTMI01.TEST.AAA, ...  
//PROCA2 EXEC PROCB
```

PROC B:

```
//PROCB PROC  
//PROCB1 EXEC PGM=IEFBR14  
//OUT DSN=KOTMI01.TEST.BBB, ...
```

Invoking nested procedures.

Coding overrides and additions – an example.

To include an addition statement while invoking PROCA, the job which invokes PROCA needs to be modified as shown on the right.

```
//KOTMNEST JOB ...  
//PROCLIB JCLLIB ORDER=...  
//CALLA EXEC PROCA  
//PROCA1.DD1 DD  
DSN=KOTMI01.AAA, //  
...
```

Invoking nested procedures.

Coding overrides and additions – an example.

To include an addition statement while invoking PROCB, the procedure PROCA needs to be modified as shown on the right.

```
//PROCA  PROC
//PROCA1 EXEC PGM=IEFBR14
//OUT    DD DSN=KOTMI01.TEST.AAA,
//          ...
//PROCA2 EXEC PROCB
//PROCB1.DD1 DD
DSN=KOTMI01.BBB, //
...

```

Invoking nested procedures.

Are we on track?

Assume that you have procedures named PROC1 to PROC12 (nested up to 12 levels). You execute PROC3 with an override EXEC statement as follows:

```
//JSTEP EXEC PROC3,TIME=3
```

What is the effect of this override statement?

- A. The specified TIME parameter applies to PROC1 through PROC3.**
- B. The specified TIME parameter applies to PROC3 through PROC12.**
- C. The specified TIME parameter applies to all procedures.**
- D. The specified TIME parameter applies to PROC3.**

Nested procedures.

Unit summary.

Now that you have completed this unit, you should be able to:

- **Code a statement to invoke and modify a nested procedure.**

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Nested procedures.

Unit introduction.

We will be able to code a statement to invoke and modify a nested procedure.

Invoking nested procedures.

Nested procedure.

What is a nested procedure?

When procedures are nested, one procedure invokes another.

Nested procedure – an example:

There are three procedures:

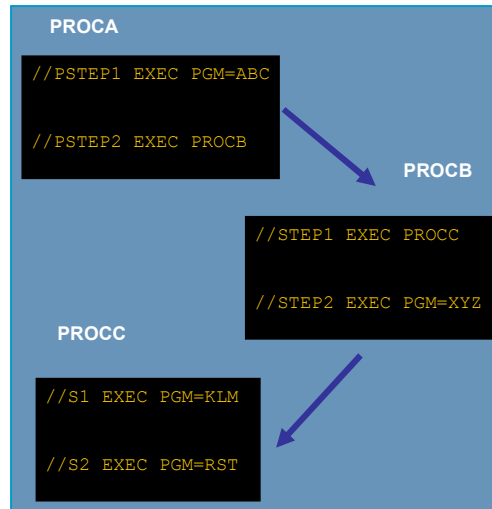
```
PROCA
PROCB
PROCC
```

In the example on the right, there are three procedures:

PROCA, PROCB, and PROCC.

PROCA invokes PROCB, and

PROCB invokes PROCC.



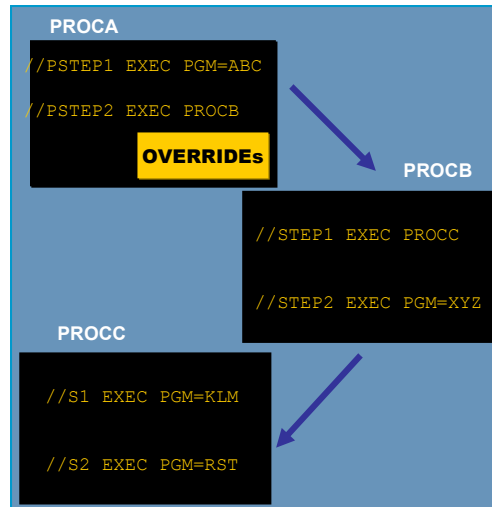
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Invoking nested procedures.

Coding overrides and additions.

Procedures can be nested up to 15 levels.

Changes to nested procedures can be complex, since you can only override a procedure at the point where it is called. In the example on the right, PROCA can override PROCB on its `//PSTEP2 EXEC`.

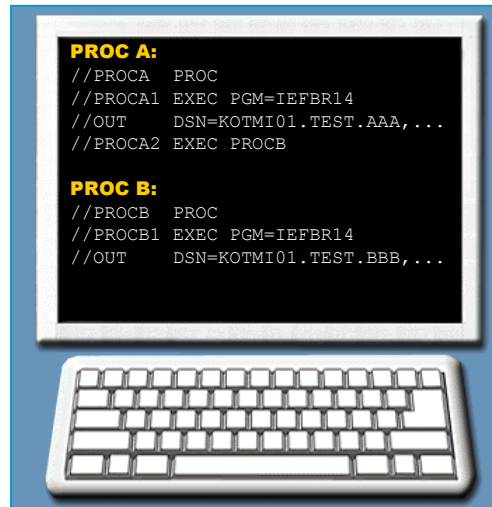


Invoking nested procedures.

Coding overrides and additions – an example.

Assume PROCA and PROCB have the JCL shown. Note that PROCA invokes PROCB.

You want to add an addition statement with a DDname of DD1 to both procedures.

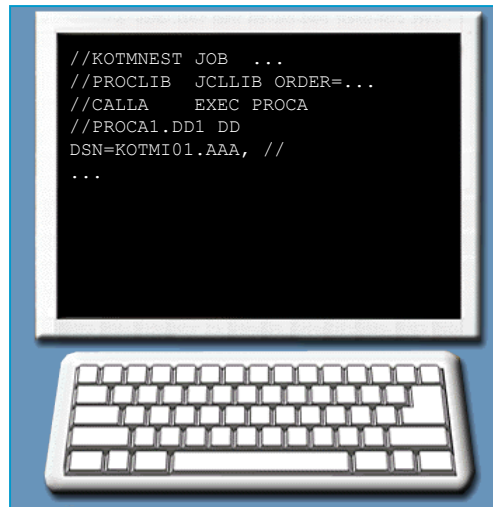


(PROCA and PROCB on this slide are different from PROCA and PROCB on previous slide.)

Invoking nested procedures.

Coding overrides and additions – an example.

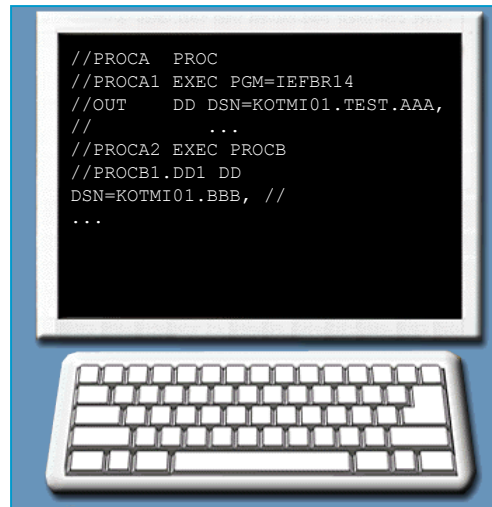
To include an addition statement while invoking PROCAL, the job which invokes PROCAL needs to be modified as shown on the right.



Invoking nested procedures.

Coding overrides and additions – an example.

To include an addition statement while invoking PROCB, the procedure PROCA needs to be modified as shown on the right.



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In my opinion it has no meaning to modify nested procedures. Procedure should be written in its „crystalline“ form, we should not specify any modifications directly to the procedure specification.

See MCOE.EDU.JCL.JCL(PROCNEST) and MCOE.EDU.JCL.PROCLIB(PROCA, PROCB).

Invoking nested procedures.

Are we on track?

Assume that you have procedures named PROC1 to PROC12 (nested up to 12 levels). You execute PROC3 with an override EXEC statement as follows:

```
//JSTEP EXEC PROC3,TIME=3
```

What is the effect of this override statement?

- A. The specified TIME parameter applies to PROC1 through PROC3.**
- B. The specified TIME parameter applies to PROC3 through PROC12.**
- C. The specified TIME parameter applies to all procedures.**
- D. The specified TIME parameter applies to PROC3.**

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The correct answer is D.

Nested procedures.

Unit summary.

Now that you have completed this unit, you should be able to:

- **Code a statement to invoke and modify a nested procedure.**