CA7 Screens - Mainframe

Powered by:

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CA-7 LOGON/LOGOFF:

OPTION UCC7

---------------------------*** M&S CA7 (3.2) HC01 ***---------------------------

PLEASE ENTER LOGON DATA OR PRESS PF3 TO DISCONNECT
CA-7 REL 3.2 WAS RELEASED TO HC01 ON 03/08/97

USERID : DSR013 TERMINAL NAME : VTM002 DATE : 99.166

PASSWORD : VTAM APPLID : UCC7 TIME : 16:05:53
NEW PASSWORD : LUNAME : A20MT267 LEVEL : V3L2 (9802)
UID RESOURCE :
PARMS :

CCCCCCCCCCC AAAAAAAAA 77777777777
CCCCCCCCCCC AAAAAAAAA 77777777777
CCC AAA AAA 7777
CCC AAAAAAAAAA 0000 7777
CCC AAAAAAAAAA 0000 7777
CCC AAA AAA 7777
CCCCCCCCCCC AAA AAA 7777
CCCCCCCCCCC AAA AAA 7777

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MENU

---------------------------*** M&S CA7 (3.2) HC01 ***---------------------------

CA-7.023 LOGON ACCEPTED, PRESS ENTER FOR MENU OR ENTER COMMAND
CA-7 REL 3.2 WAS RELEASED TO HC01 ON 03/08/97
USERID: DSR013  TERMINAL NAME: VTM002  DATE: 99.166
VTAM APPLID: UCC7  TIME: 16:09:44
LUNAME: A20MT267  LEVEL: V3L2 (9802)

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LOGON IS COMPLETE!!!!
To LOGOFF:
Topline command – “/logoff”
/logoff

-------------------------  CA-7 CPU JOB DEFINITION  -------------------------
FUNCTION: LIST (ADD,DELETE,DD,DELPRRN,FORMAT,LIST,UPD)
JOB: YSRWCP2
GENERAL: SYSTEM: JOBNET: OWNER: DSR000 UID: 0

JCL:  ID: 145 MEMBER: YSRWCP2  RELOAD: N EXEC: Y RETAIN-JCL: N

LIB:

SATISFACTION LEAD-TIME: JOB: 0 DSN: 0 ARFSET:

EXECUTION: MAINID: SY1 INSERT-RMS: N COND-CODE: 0 RO: NE
DONT SCHEDULE -- BEFORE: 00000 0000 AFTER: 99999 0000
MESSAGES: LTERM: MASTER REQUIREMENT-LIST: Y PROMPTS: N
ERROR MSGS -- RQMTS NOT USED: Y DSN NOT FOUND: Y

RESOURCES: REGION: 960 CLOCK-TIME: 0004 CPU-TIME: 00004
CLASS: A PRTY: 000 MSGCLASS: Q
TAPE DRIVES...TYPE1: 000 M 000 C TYPE2: 000 M 000 C

PROGRAM: SM20 MSG-INDX: 00 -- DB.1 -- 99.166 / 16:14:47
MESSAGE: LIST SUCCESSFUL

----------------------------------------*** M&S CA7 (3.2) HC01 ***-----------------------------------------

CA-7.024 /LOGOFF SUCCESSFUL
CA-7 REL 3.2 WAS RELEASED TO HC01 ON 03/08/97

USERID : TERMINAL NAME : VTM002 DATE : 99.166
PASSWORD : VTAM APPLID : UCC7 TIME : 16:16:14
NEW PASSWORD : LUNAME : A20MT267 LEVEL : V3L2 (9802)
UID RESOURCE :
PARMS :

CCCCCCCCCC AAAAAA AAA 7777777777
CCCCCCCCCCC AAAAAAAA AAA 7777777777
CCC AAA AAA 7777
CCC AAAAAAAAAA 0000 7777
CCC AAAAAAAAAA 0000 7777
CCC AAA AAA 7777
CCCCCCCCCCC AAA AAA 7777
CCCCCCCCCCC AAA AAA 7777

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### 2 Commonly used Commands:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LJOB,JOB=******</td>
<td>Listing of job information.</td>
<td></td>
</tr>
<tr>
<td>LPRRN,JOB=******</td>
<td>Listing of last successful run</td>
<td></td>
</tr>
<tr>
<td>XQJ</td>
<td>Gives list of jobs in queue</td>
<td></td>
</tr>
<tr>
<td>LRDY</td>
<td>Lists jobs awaiting execution</td>
<td></td>
</tr>
<tr>
<td>CANCEL,JOB=Y****</td>
<td>Cancels job off the queue</td>
<td></td>
</tr>
<tr>
<td>/LOGON &amp; /LOGOFF</td>
<td>Logs on and off CA-7.</td>
<td></td>
</tr>
<tr>
<td>HELP</td>
<td>Gives help on commands, syntax, etc.</td>
<td>Once HELP has been typed, user should then type P Y and 1 to allow access to the correct screen.</td>
</tr>
<tr>
<td>DEMAND(H),JOB=Y***</td>
<td>Demands (hold[H] is optional) job into CA7. If [H] is used then it will wait in the XQJ screen until released.</td>
<td>Should be used in conjunction with SCHID=0xx if job is to be run on a particular day.</td>
</tr>
</tbody>
</table>

### 2.1 Other Useful Commands:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>/DISPLAY,Q=ALL</td>
<td>Shows information on the queue.</td>
<td></td>
</tr>
<tr>
<td>...LIST=ALL</td>
<td>Shows everything for that job</td>
<td></td>
</tr>
<tr>
<td>...LIST=NODD</td>
<td>Shows everything except DD</td>
<td></td>
</tr>
<tr>
<td>...LIST=TRIG</td>
<td>Shows trigger information only</td>
<td></td>
</tr>
<tr>
<td>...LIST=SID***</td>
<td>Shows triggers under 1 schedule ID only</td>
<td></td>
</tr>
<tr>
<td>LSCHD,JOB=DID****</td>
<td>Lists every job on the database with a summary of schedule information.</td>
<td>Can also add Status, so ST=EXP (expired schedules)</td>
</tr>
<tr>
<td>FSTRUC,SCHID=<strong>, JOB=</strong>****</td>
<td>Gives the order of triggered jobs under a given structure.</td>
<td>Please note that there can be more than one schedule ID for each job and for each day.</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>LRLOG</td>
<td>Details of previous runs since midnight. Add date=* which gives the last five days worth. Can also find out which jobs ran late or were cancelled by using ST=LATE/CANC.</td>
<td></td>
</tr>
<tr>
<td>LJCL,JOB=Y****</td>
<td>Lists JCL deck to be used by job=“x”, regardless of whether it’s in the queue (XQJ).</td>
<td></td>
</tr>
<tr>
<td>LISTDIR,DSN=library, MEM=member</td>
<td>Lists members of PDS</td>
<td></td>
</tr>
<tr>
<td>LQ/LQUE</td>
<td>Lists queue information. Can add Status, eg ST=HELD,LATE,SUBM,ABND. Generally displays information about all jobs that are on the CA-7 queue including the current status of the jobs.</td>
<td></td>
</tr>
<tr>
<td>LIST</td>
<td>Lists jobs which have fallen over</td>
<td></td>
</tr>
<tr>
<td>/DISPLAY,ST=JCL</td>
<td>Listing of all JCLID’s and their associated library.</td>
<td></td>
</tr>
<tr>
<td>LJES</td>
<td>Lists jobs that have been sent to JES</td>
<td></td>
</tr>
<tr>
<td>HOLD,JOB=Y****</td>
<td>Holds job in CA-7 queue (XQJ)</td>
<td></td>
</tr>
<tr>
<td>LQP,JOB=Y*****</td>
<td>Lists job information from the Request and LRDY queues. Displays the current status of the job. This command shows you why a job may not be executing.</td>
<td></td>
</tr>
</tbody>
</table>
| POST,JOB=Y***** | Satisfies requirements for jobs. Command followed by type of requirement to be met. IE. DSN=xx.xxxx.xxxxx or JOB=*******.
| REQUEUE,JOB=Y**** | Puts job back in XQJ when it’s sitting in LRDY or LJES queues.                                |
| SUBTM,JOB=Y***** | Allows you to make your job run at a particular time once Followed by TIME=hhmm.     |
already on the XQJ queue.

/PROF(S) Lists and updates CA-7 user profiles.

3 Resources & Profiles:
As part of it’s security mechanism for jobs, CA7 uses userId resources and has profiles that can be set to allow access to those resources. This security is used to restrict access to jobs from users that do not have authority for the necessary profile.

Each of the systems have a userId (UID) resource set (e.g. UID = 158) for the majority of it’s jobs so that they can only be browsed, updated or demanded by authorized users. Those jobs that interface or relate to another application, and hence require more open security to allow that application access to the jobs, have their UID set to 000 effectively having no security.

In order to access jobs with a non-zero UID the user must have RACF access to the relevant profile. As authority to multiple profiles is possible the user must also change the ‘active’ profile for viewing different applications. This can be done in UCC7 by entering the command: -

/PROF,R=CA7NNNN where NNNN is the UID number for the required application

Note: Once a resource has been ‘activated’, for a userId, it must be specified every time when logging on to UCC7, until such time as it is reset or changed – it is entered on the UCC7 logon panel in the UID resource field as CA7NNNN, where NNNN is the UID last activated.

An active resource can be reset by entering the /PROF,R=CA7NNNN command, replacing NNNN with zeros (i.e. UID = 0000). This will mean that the userid no longer has an active profile and hence does not need to specify that resource at logon.

Important: If a list of all jobs for an application is requested in CA7, but no resource (or the relevant resource) for that user is active, those jobs with a non-zero UID will not appear. More importantly, CA7 will provide no information that any jobs are missing from the listing. In effect, if the relevant resource for an application is not active, no information on ‘secure’, non-zero UID jobs, will be provided.

4 Triggering:
A trigger is a form of scheduling and is by far the most economical, efficient method to schedule jobs to run under CA-7 control. In an ideal situation, the very first job in a SYSTEM should always be scheduled by date/time...

There are two forms of triggering:
· COMPLETION of a job (job triggering)
**CREATION** of a dataset (dataset triggering)

**NOTE** The Marks & Spencer standard specified that dataset triggers should only be used where absolutely necessary, for recovery work or to trigger a job based on a Return Code from a particular step!

Triggers are controlled by Schedule ID's. Whatever SCHID the job doing the trigger or creating the dataset is using will be propagated to any triggered job. This is true in all cases except when TRIGID is specified.

The following is an example of a typical use of TRIGID:

The "BACKUP" job runs twice in this sequence, it's the same job both times because remember that triggered jobs propagate their SCHID to following jobs, this is where a TRIGID is very useful, without it this sequence would LOOP.

BACKUP runs using SCHID = 1, under this ID it triggers UPDATE.

↓

UPDATE assumes SCHID = 1 from BACKUP, under this SCHID triggers REPORT.

↓

REPORT assumes SCHID = 1 from UPDATE, under this SCHID triggers BACKUP.

↓

BACKUP assumes SCHID = 1 from REPORT, under this SCHID triggers UPDATE.

UPDATE triggers REPORT...and so on.

To avoid this LOOP a TRIGID can be used. When REPORT triggers BACKUP it uses a TRIGID of 99.

BACKUP runs using SCHID = 1, under this ID it triggers UPDATE.

↓

UPDATE assumes SCHID = 1 from BACKUP, under this SCHID triggers REPORT.

↓

REPORT assumes SCHID = 1 from UPDATE, under this SCHID triggers BACKUP with a TRIGID of 99.

↓

BACKUP runs using SCHID = 99, under this SCHID it triggers nothing.

### 4.1 Getting to the JOB TRIGGERING screens:

The methods by which you can get to the CA-7 Job Triggering screens are:

1. Topline command – ‘SCHD.JTRG’
2. Topline command – ‘DB.2.4’
3. Select function 2 from the Data Base Maintenance Menu, then function 4.
FUNCTION ====> 2

DATA BASE DEFINITION FOR:
1 - CPU JOB
2 - SCHEDULING
3 - JOB PREDECESSOR/SUCCESSOR
4 - WORKLOAD DOCUMENTATION
5 - INPUT/OUTPUT NETWORK
6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
7 - JCL LIBRARY MAINTENANCE
8 - TEXT EDITOR
9 - CLEAR THE TEXT EDITOR ACTIVE AREA

ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT

PROGRAM: SDM0  MSG-INDEX: 00 -- DB -- 99.166 / 10:17:37
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE

FUNCTION ====> 4

DATE/TIME SCHEDULING FOR:
1 - CPU JOB
2 - INPUT NETWORK
3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
4 - JOB TRIGGERING OTHER CPU JOB(S)
5 - INPUT NETWORK TRIGGERING CPU JOB(S)
6 - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
7 - MODIFICATION TO RESOLVED SCHEDULE DATES
8 - BASE CALENDAR MAINTENANCE

PROGRAM: SM70  MSG-INDX: 00  --  DB.2  --  99.166 / 10:25:23
MESSAGE: ENTER OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

---------------------------  CA-7 JOB TRIGGERING  ---------------------------
FUNCTION: LIST  (FORMAT,LIST,UPD)  PAGE 0001
JOB: YSRWCP2
OPT SCHID TRGD-JOB TRGID DOTM QTM LDTM SBTM *---- EXCEPTIONS ----*
   000 YSRWCP3 0010 0010

OPTIONS: A=ADD, D=DELETE, U=UPDATE, *=PROCESSED, ?=ERROR
PROGRAM: SM75  MSG-INDX: 00  --  DB.2.4  --  99.166 / 10:27:06
MESSAGE: LIST FUNCTION SUCCESSFUL

END OF DATA REACHED

When wanting to change or add a trigger, under the “OPT” field, you have the option of placing an “A” or a “D” (ADD & DELETE respectively) on the respective line. So if you wanted to change the trigger from YSRWCP2 → YSRWCP3 to YSRWCP2 → YSRWCP4, for example, you would do the following:

---------------------------  CA-7 JOB TRIGGERING  ---------------------------
FUNCTION: upd  (FORMAT,LIST,UPD)  PAGE 0001
JOB: YSRWCP2
OPT SCHID TRGD-JOB TRGID DOTM QTM LDTM SBTM *---- EXCEPTIONS ----*
d 000 YSRWCP3 0010 0010
a 000 YSRWCP4 0010 0010
5 CPU Job Definition:

Each job to be controlled by CA-7 must first be defined in its database, the easiest method to do this is to “ADD” the job using the JOB SCREEN, Panel “DB.1” or just use the Topline command “JOB”.

-------------------------- CA-7 CPU JOB DEFINITION --------------------------
FUNCTION: (ADD,DELETE,DD,DELPRRN,FORMAT,LIST,UPD)
JOB:
GENERAL: SYSTEM: JOBNET: OWNER: UID:
JCL: ID: MEMBER: RELOAD: EXEC: RETAIN-
JCL:
LIB:
REQUIREMENTS: HOLD: JCL-OVRD: USE-OVRD-LIB: VERIFY: MAINT:
SATISFACTION LEAD-TIME: JOB: DSN: ARFSET:
EXECUTION: MAINID: INSERT-RMS: COND-CODE: RO:
DONT SCHEDULE -- BEFORE: AFTER:

MESSAGES: LTERM: REQUIREMENT-LIST: PROMPTS:
ERROR MSGS -- RQMTS NOT USED: DSN NOT FOUND:

RESOURCES: REGION: CLOCK-TIME: CPU-TIME:
CLASS: PRTY: MSGCLASS:
TAPE DRIVES...TYPE1: M C TYPE2: M C

PROGRAM: MSG-INDX: 00 -- DB.1 -- 99.166 / 10:56:47
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------- CA-7 CPU JOB DEFINITION -------------------------
FUNCTION: LIST (ADD,DELETE,DD,DELPRRN,FORMAT,LIST,UPD)
JOB: YSRWCP2
GENERAL: SYSTEM: JOBNET: OWNER: DSR000 UID: 0

JCL: ID: 145 MEMBER: YSRWCP2 RELOAD: N EXEC: Y RETAIN-JCL: N
LIB:
REQUIREMENTS: HOLD: N JCL-OVRD: N USE-OVRD-
LIB: N VERIFY: N MAINT: N
SATISFACTION LEAD-TIME: JOB: 0 DSN: 0 ARFSET:

EXECUTION: MAINID: SY1 INSERT-RMS: N COND-CODE: 0 RO: NE
DONT SCHEDULE -- BEFORE: 00000 0000 AFTER: 99999 0000

MESSAGES: LTERM: MASTER REQUIREMENT-LIST: Y PROMPTS: N
ERROR MSGS -- RQMTS NOT USED: Y DSN NOT FOUND: Y

RESOURCES: REGION: 960 CLOCK-TIME: 0004 CPU-TIME: 00004
CLASS: A PRTY: 000 MSGCLASS: Q
6 Dataset Definition:

CA-7 keeps information on its database on ALL DATASETS used by jobs run under its control. Dataset information can either be added manually using the DSN SCREEN, panel “DB.6”, or automatically through LOAD PROCESSING (CA-7 recognises NEW Datasets).

------------------------- CA-7 DATA SET DEFINITION -------------------------
FUNCTION: (ADD, DELETE, FORMAT, LIST, RENAME, UPD)

DSN:

DSNBR:

NEWWNAME:

TYPE:

GDG:

SMF FEEDBACK REQUIRED: POST AT CLOSE TIME:

DEVICE:

DSORG:

RECFM:

LRECL:

BLKSIZE:

PROGRAM: SM30 MSG-INDX: 00 -- DB.6 -- 99.166 / 11:13:47
6.1 Internal Datasets:

These are datasets which are created by a CA-7 controlled job (DISP=NEW). As the job runs it generates SMF information on the datasets it uses, hence CA-7 can keep track of when each dataset is created and AUTOMATICALLY satisfy dataset dependencies and triggers.

6.2 External Datasets:

These are datasets that are not created by a CA-7 controlled job and for which no SMF information is received. This being the case, CA-7 cannot satisfy any dependencies on these datasets, hence, if any jobs have EXTERNAL DATASET REQUIREMENTS these would need MANUAL intervention to run (ie. An operator would need to satisfy these requirements with a command)

Examples of these datasets are STEPLIBS, USER CATALOGS, SORTLIBS and PDS libraries which may hold SYSIN data.

In order to avoid this, all external datasets should be made PERMANently available.

NORM:

A NORM dataset (default) means that ANY JOB which INPUTS THAT DATASET will automatically have the dataset flagged as a dataset requirement.

NB: As this is the default, any datasets ADDed by LOAD PROCESSING will be flagged as NORM, this includes INTERNAL & EXTERNAL datasets.

PERM:

A PERM dataset (permanently available, means that ALL dependencies on this dataset are ignored.

You can make a dataset PERM by using the JOBCONN, DSN screen or on a system level by using the DSN SCREEN (below).

Command = “DB.6”

------------------------- CA-7 DATA SET DEFINITION -------------------------

FUNCTION: (ADD,DELETE,FORMAT,LIST,RENAME,UPD)

DSN: 

DSNBR:

NEWNAME:

TYPE: GDG;
SMF FEEDBACK REQUIRED: POST AT CLOSE TIME:

DEVICE:
DSORG:
RECFM:
LRECL:
BLKSIZE:

PROGRAM: SM30 MSG-INDX: 00 -- DB.6 -- 99.166 / 11:13:47
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

7 Job Predecessor/Successor:

Job Predecessors/Successors (Dependencies) are used in combination with Scheduling criteria to control job sequencing in CA-7.

When a job is scheduled, be it triggered or Schedule Scan, the job enters the request queue along with a copy of its pre-execution requirements, which can include:

- Successful completion of a predecessor job/s (Job dependency)
- Creation of a dataset/s (Dataset dependency)
- Free form Text (User Requirement)
- JCL Override (specified on job screen)
- Submit time (specified as part of the scheduling criteria)

The job will not be submitted until all its requirements have been satisfied, manually or automatically, to ensure correct job sequencing. Dependencies are defined by SCHID, and a further qualification called Satisfaction lead-time. To get to the CA7 CPU Job Predecessor panel you can use:

- Topline command – ‘JOBCONN,JDEP’
- Topline command – ‘DB.3.2’
- Select function 3 from the CA7 Database Maintenance Menu (DBM), and then function 2 from the CA7 Job Predecessor/Successor menu.
FUNCTION ====> 3

DATA BASE DEFINITION FOR:
1  - CPU JOB
2  - SCHEDULING
3  - JOB PREDECESSOR/SUCCESSOR
4  - WORKLOAD DOCUMENTATION
5  - INPUT/OUTPUT NETWORK
6  - DATA SET

OTHER FUNCTIONS AVAILABLE:
7  - JCL LIBRARY MAINTENANCE
8  - TEXT EDITOR
9  - CLEAR THE TEXT EDITOR ACTIVE AREA

ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT

PROGRAM: SDM0        MSG-INDEX: 00       --
DB       -- 99.166    / 12:28:11
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE

------------------- CA-7 JOB PREDECESSOR/SUCCESSOR MENU -------------------
FUNCTION ====> 2

EXECUTION REQUIREMENTS DEFINED BY:
1 - DATA SET PREDECESSORS
2 - CPU JOB PREDECESSORS OR MUTUALLY EXCLUSIVE JOBS (CAN NOT RUN AT SAME TIME)
4 - INPUT NETWORK PREDECESSORS OR OUTPUT NETWORK SUCCESSORS
6 - USER MEMO-FORM
7 - REPORT IDS CREATED

MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------ CA-7 CPU JOB PREDECESSORS ------------------------
FUNCTION: (FORMAT, LIST, UPD)

PRED FOR JOB: LIST-SCHID:

OPT SCHID LEADTM PRED-JOB NEXT-RUN
For more detailed information regarding Satisfaction Lead Time, look in the "CA-7 User Guide - version 3.0". This will demonstrate how to use this parameter effectively.

A job can be dependent on any number of other jobs completing beforehand. If the triggering job is the only requirement for the job then NO DEPENDENCY is needed, since the job will not be initiated until the triggering job completes.

### 7.1 Mutually Exclusive Jobs:

You can define to CA-7 that jobs are not to be run concurrently. These jobs are not dependent on each other, they simply cannot run at the same time (maybe they update the same files). This is also known as negative dependency.

The same screen is used to define a mutually exclusive job as with predecessor. Keep in mind that with MUTUALLY EXCLUSIVE jobs, if one job abends the other will still run.

```
------------------- CA-7 JOB PREDECESSOR/SUCCESSOR MENU -------------------
FUNCTION ===> 2
EXECUTION REQUIREMENTS DEFINED BY:
1 - DATA SET PREDECESSORS
2 - CPU JOB PREDECESSORS OR MUTUALLY EXCLUSIVE JOBS (CAN NOT RUN AT SAME TIME)
4 - INPUT NETWORK PREDECESSORS OR OUTPUT NETWORK SUCCESSORS
6 - USER MEMO-FORM PREDECESSORS
```
PROGRAM: SM60  
MSG-INDX: 00 --
DB.3 -- 99.166 / 14:11:32

MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------ CA-7 CPU JOB PREDECESSORS ------------------------
FUNCTION: upd (FORMAT, LIST, UPD) PAGE 0001
PRED FOR JOB: JOB123 LIST-SCHID:
OPT SCHID LEADTM PRED-JOB NEXT-RUN
a 0 0 /JOBXYZ

OPTIONS: A=ADD, D=DELETE, U=UPDATE, *=PROCESSED, ?=ERROR
In the above example, JOBXYZ has been made mutually exclusive with JOB123. When CA-7 goes to submit this job it will first check to see whether JOB123 is in either the READY or ACTIVE queues. If so, then JOBXYZ will be held back until JOB123 either completes or abends.

Currently, the reverse is not true, if JOBXYZ was running and JOB123 came along it would run, which is why both jobs must be updated, i.e. JOB123 must also be made mutually exclusive to JOBXYZ, as follows:

------------------------ CA-7 CPU JOB PREDECESSORS ------------------------
FUNCTION: upd (FORMAT, LIST, UPD) PAGE 0001
PRED FOR JOB: JOBXYZ LIST-SCHID:
OPT SCHID LEADTM PRED-JOB NEXT-RUN
a 0 0 /JOB123

OPTIONS: A=ADD, D=DELETE, U=UPDATE, *=PROCESSED, ?=ERROR
8  **Dataset Predecessors:**

A job can be dependent on the creation of a dataset/s before being released to run, this is called a dataset predecessor. The standard at M&S is to use (where possible) a JOB PREDECESSOR instead, these are much easier for the operators to track.

For CA-7 to satisfy a dataset predecessor automatically, the datasets must be created by a JOB RUN UNDER CA-7 CONTROL. When a job goes through LOAD PROCESSING, any INPUT DATASETS the job has are automatically flagged as dataset requirements, this includes:

- STEPLIBS
- VSAM CATALOGS
- SORTLIBS
- ETC.

Datasets such as these are NEVER CREATED so these must be made PERManently available using the DSN screen. It is not such a bad idea to make all the datasets PERM (except datasets used to trigger).

To get to the CA-7 Dataset Predecessor panel you can use:

1. Topline command – 'JOBCONN,DSN'
2. Topline command – 'DB.3.1'
3. Topline command – DBM from any panel, then function 3, then function 1 from the CA-7 Job Predecessor/Successor Menu.

---

**CA-7 JOB PREDECESSOR/SUCCESSOR MENU**

FUNCTION => 1

---

**EXECUTION REQUIREMENTS DEFINED BY:**

1 - DATA SET PREDECESSORS
2 - CPU JOB PREDECESSORS  OR
MUTUALLY EXCLUSIVE JOBS (CAN NOT RUN AT SAME TIME)
4 - INPUT NETWORK PREDECESSORS  OR
OUTPUT NETWORK SUCCESSORS
6 - USER MEMO-FORM PREDECESSORS
7 - REPORT IDS CREATED
PROGRAM: SM60  MSG-INDX: 00  --  DB.3  --  99.166 / 15:31:44
MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------  CA-7 DATA SET PREDECESSORS  ------------------------
FUNCTION: LIST  (FORMAT, LIST, UPD)  PAGE 0001
PRED FOR JOB: YSRWCP2
LIST-SCHID: NEXT
OPT SCHID  LEADTM  *----------- DATASET NAME -----------*  DSNBR PERM -RUN
  0  0000  SR.YT.PSREORG  106823  N  YES
  0  0000  SR.YT.SORTOUT  106824  N  YES
  0  0000  SR.YTST.CMDLIB  106801  N  YES

OPTIONS: A=ADD, D=DELETE, U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61  MSG-INDX: 00  --  DB.3.1  --  99.166 / 15:35:21
MESSAGE: LIST FUNCTION SUCCESSFUL
Maintaining the datasets is very much like it is for maintaining predecessors, i.e. “D” for delete & “A” for ADD.
9 Date/Time Scheduling (Calendar Scheduling):

In order to schedule jobs by date and time you will use a Base Calendar (for more information see appendices). Once you’ve selected the appropriate Base Calendar, you must then define what days the job is to be scheduled and what SCHID/s the job is run under on those days.

Finally the last step is CALENDAR RESOLUTION. This process takes your schedule definition and the base calendar specified, and produces a matrix of the exact days the job will be run. CA-7 will scan this matrix when searching for jobs to schedule.

To get to these screens you can use either:
1. Topline command – ‘SCHD,JOB’
2. Topline command – ‘DB.2.1 (the panel ID)
3. Topline command – ‘DBM’, then function 2 from the CA-7 Database Maintenance Menu, then function 1 (CPU Job) from the scheduling menu.

--------------------- CA-7 DATA BASE MAINTENANCE MENU ---------------------
FUNCTION ====> 2

DATA BASE DEFINITION FOR:
1 - CPU JOB
2 - SCHEDULING
3 - JOB PREDECESSOR/SUCCESSOR
4 - WORKLOAD DOCUMENTATION
5 - INPUT/OUTPUT NETWORK
6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
7 - JCL LIBRARY MAINTENANCE
8 - TEXT EDITOR
9 - CLEAR THE TEXT EDITOR ACTIVE AREA
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE

--------------------------- CA-7 SCHEDULING MENU ---------------------------
FUNCTION ===> 1

DATE/TIME SCHEDULING FOR:
1 - CPU JOB
2 - INPUT NETWORK
3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
4 - JOB TRIGGERING OTHER CPU JOB(S)
5 - INPUT NETWORK TRIGGERING CPU JOB(S)
6 - DATA SET TRIGGERING CPU

OTHER FUNCTIONS AVAILABLE:
7 - MODIFICATION TO RESOLVED SCHEDULE DATES
8 - BASE CALENDAR MAINTENANCE
In this example, we’re creating a NEW schedule (edit) for job H5KPTEST and will use SCALyy05 (05) Base Calendar. If the schedule already existed and I wanted to change it I would use the ‘FE’ function instead of EDIT. When you “fetch” a schedule, however, you don’t need to specify the Base Calendar, as this information is stored in the database.
The screen above looks a lot more complicated than it actually is, however, I would suggest that when date/time scheduling you refer to the “CA-7 User Guide – version 3.0”. The main reason being that it requires a bit more in depth knowledge of CA-7 (reg: SCHIDS, INDEXES, DUE OUT TIMES, etc), but is still quite straight forward to understand and apply.

This also applies to Calendar Resolution.

9.1  MODIFICATION TO RESOLVED SCHEDULE DATES

Due to the constraints of the scanning screens, you may not always be able to schedule a job on exactly the right date. This will depend on the requirements of the job/s.

For example, a job needs to be scheduled on the third Tuesday of every month. However, only if there has been 3 Fridays beforehand in that month. Ultimately, this means that potentially you could schedule the job to run monthly on the 3rd week of the month on a Tuesday, but you may have inconsistencies in the scheduling. So in this example, you’d have to move the week back 1 further to accommodate for the extra Friday. Modifying a resolved schedule manually does this.

(see next page)
To get to the screen which does this, Type DB.2 (the Scheduling menu)

----------------------------------------------- CA-7 SCHEDULING MENU  -----------------------------------------------
FUNCTION =/>  

DATE/TIME SCHEDULING FOR:
1 - CPU JOB
2 - INPUT NETWORK
3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
4 - JOB TRIGGERING OTHER CPU JOB(S)
5 - INPUT NETWORK TRIGGERING CPU JOB(S)
6 - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
7 - MODIFICATION TO RESOLVED SCHEDULE DATES
8 - BASE CALENDAR MAINTENANCE

PROGRAM: SM70  MSG-INDX: 00  -- DB.2  --  01.254 / 11:24:45
MESSAGE: ENTER OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
Option 7 is the one you need

----------------------------------------------- CA-7 MODIFICATION TO RESOLVED SCHEDULE DATES  -----------------------------------------------
FUNCTION: LIST  (FORMAT,LIST,UPD)

JOB: PGDDUMMY
NETWORK: 
MODSTAT: 
SCHID: 101  YEAR: 2001

   1   1  2  2  3  3
CA-7 LOGON/LOGOFF:

OPTION UCC7

---------------------------
*** M&S CA7 (3.2) HC01 ***
-------------------------

PLEASE ENTER LOGON DATA OR PRESS PF3 TO DISCONNECT
CA-7 REL 3.2 WAS RELEASED TO HC01 ON 03/08/97

USERID : DSR013 TERMINAL NAME : VTM002 DATE : 99.166

PASSWORD : VTAM APPLID : UCC7 TIME : 16:05:53
NEW PASSWORD : LUNAME : A20MT267 LEVEL : V3L2 (9802)
UID RESOURCE :
PARMS :
CA-7.023 LOGON ACCEPTED, PRESS ENTER FOR MENU OR ENTER COMMAND
CA-7 REL 3.2 WAS RELEASED TO HC01 ON 03/08/97

USERID : DSR013 TERMINAL NAME : VTM002 DATE : 99.166
VTAM APPLID : UCC7 TIME : 16:09:44
LUNAME : A20MT267 LEVEL : V3L2 (9802)
LOGON IS COMPLETE!!!!
To LOGOFF:
Topline command – "/logoff"
/logoff

------------------------- CA-7 CPU JOB DEFINITION -------------------------
FUNCTION: LIST (ADD,DELETE,DD,DELPRIORITY,FORMAT,LIST,UPD)
JOB: YSRWCP2
GENERAL: SYSTEM: JOBNET: OWNER: DSR000 UID: 0

JCL: ID: 145 MEMBER: YSRWCP2 RELOAD: N EXEC: Y RETAIN-JCL: N

SATISFACTION LEAD-TIME: JOB: 0 DSN: 0 ARFSET:

EXECUTION: MAINID: SY1 INSERT-RMS: N COND-CODE: 0 RO: NE
DONT SCHEDULE -- BEFORE: 00000 0000 AFTER: 99999 0000

MESSAGES: LTERM: MASTER REQUIREMENT-LIST: Y PROMPTS: N
ERROR MSGS -- RQMTS NOT USED: Y DSN NOT FOUND: Y

RESOURCES: REGION: 960 CLOCK-TIME: 0004 CPU-TIME: 00004
CLASS: A PRTY: 000 MSGCLASS: Q
TAPE DRIVES...TYPE1: 000 M 000 C TYPE2: 000 M 000 C

PROGRAM: SM20 MSG-INDX: 00 -- DB.1 -- 99.166 / 16:14:47
MESSAGE: LIST SUCCESSFUL

---------------------------*** M&S CA7 (3.2) HC01 ***---------------------------

CA-7.024 /LOGOFF SUCCESSFUL
CA-7 REL 3.2 WAS RELEASED TO HC01 ON 03/08/97
2 Commonly used Commands:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LJOB, JOB=******</td>
<td>Listing of job information.</td>
<td></td>
</tr>
<tr>
<td>LPRRN, JOB=******</td>
<td>Listing of last successful run</td>
<td></td>
</tr>
<tr>
<td>XQJ</td>
<td>Gives list of jobs in queue</td>
<td></td>
</tr>
<tr>
<td>LRDY</td>
<td>Lists jobs awaiting execution</td>
<td></td>
</tr>
<tr>
<td>CANCEL, JOB=Y****</td>
<td>Cancels job off the queue</td>
<td></td>
</tr>
<tr>
<td>/LOGON &amp; /LOGOFF</td>
<td>Logs on and off CA-7.</td>
<td></td>
</tr>
<tr>
<td>HELP</td>
<td>Gives help on commands, syntax, etc.</td>
<td>Once HELP has been typed, user should then type P Y and 1 to allow access to the correct screen.</td>
</tr>
<tr>
<td>DEMAND(H), JOB=Y***</td>
<td>Demands (hold[H] is optional) job into CA-7. If [H] is used then it</td>
<td>Should be used in conjunction with SCHID=0xx if job is to be run on a particular day.</td>
</tr>
</tbody>
</table>
2.1 Other Useful Commands:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>/DISPLAY,Q=ALL</td>
<td>Shows information on the queue.</td>
<td></td>
</tr>
<tr>
<td>...LIST=ALL</td>
<td>Shows everything for that job</td>
<td>Format: LJOB,JOB=PID****,LIST=NODD</td>
</tr>
<tr>
<td>...LIST=NODD</td>
<td>Shows everything except DD</td>
<td></td>
</tr>
<tr>
<td>...LIST=TRIG</td>
<td>Shows trigger information only</td>
<td></td>
</tr>
<tr>
<td>...LIST=SID***</td>
<td>Shows triggers under 1 schedule ID only</td>
<td></td>
</tr>
<tr>
<td>LSCHD, JOB=DID****</td>
<td>Lists every job on the database with a summary of schedule information.</td>
<td>Can also add Status, so ST=EXP (expired schedules)</td>
</tr>
<tr>
<td>FSTRUC, SCHID=*<strong>, JOB=</strong>*****</td>
<td>Gives the order of triggered jobs under a given structure.</td>
<td>Please note that there can be more than one schedule ID for each job and for each day.</td>
</tr>
<tr>
<td>LRLOG</td>
<td>Details of previous runs since midnight</td>
<td>Add date=* which gives the last five days worth. Can also find out which jobs ran late or were cancelled by using ST=LATE/CANC</td>
</tr>
<tr>
<td>LJCL, JOB=Y****</td>
<td>Lists JCL deck to be used by job=“x”, regardless of whether it’s in the queue (XQJ).</td>
<td></td>
</tr>
<tr>
<td>LISTDIR, DSN=library, MEM=member</td>
<td>Lists members of PDS</td>
<td></td>
</tr>
<tr>
<td>LQ/LQUE</td>
<td>Lists queue information</td>
<td>Can add Status, eg ST=HELD,LATE,SUBM,ABND Generally displays information about all jobs that are on the CA-7 queue including the current status of the jobs.</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>LIST</td>
<td>Lists jobs which have fallen over</td>
<td></td>
</tr>
<tr>
<td>/DISPLAY,ST=JCL</td>
<td>Listing of all JCLID’s and their associated library.</td>
<td></td>
</tr>
<tr>
<td>LJES</td>
<td>Lists jobs that have been sent to JES</td>
<td></td>
</tr>
<tr>
<td>HOLD,JOB=Y****</td>
<td>Holds job in CA-7 queue (XQJ)</td>
<td></td>
</tr>
<tr>
<td>LQP,JOB=Y*****</td>
<td>Lists job information from the Request and LRDY queues</td>
<td></td>
</tr>
<tr>
<td>POST,JOB=Y*****</td>
<td>Displays the current status of the job. This command shows you why a job may not be executing</td>
<td></td>
</tr>
<tr>
<td>REQUEUE,JOB=Y****</td>
<td>Puts job back in XQJ when it’s sitting in LRDY or LJES queues.</td>
<td></td>
</tr>
<tr>
<td>SUBTM,JOB=Y*****</td>
<td>Allows you to make your job run at a particular time once already on the XQJ queue.</td>
<td></td>
</tr>
<tr>
<td>/PROF(S)</td>
<td>Lists and updates CA-7 user profiles.</td>
<td></td>
</tr>
</tbody>
</table>

### 3 Resources & Profiles:

As part of its security mechanism for jobs, CA7 uses userid resources and has profiles that can be set to allow access to those resources. This security is used to restrict access to jobs from users that do not have authority for the necessary profile. Each of the systems have a userid (UID) resource set (e.g. UID = 158) for the majority of its jobs so that they can only be browsed, updated or demanded by authorized users. Those jobs that interface or relate to another application, and hence require more open security to allow that application access to the jobs, have their UID set to 000 effectively having no security.
In order to access jobs with a non-zero UID the user must have RACF access to the relevant profile. As authority to multiple profiles is possible the user must also change the ‘active’ profile for viewing different applications. This can be done in UCC7 by entering the command:

/PROF,R=CA7NNNN where NNNN is the UID number for the required application

Note: Once a resource has been ‘activated’, for a userid, it must be specified every time when logging on to UCC7, until such time as it is reset or changed – it is entered on the UCC7 logon panel in the UID resource field as CA7NNNN, where NNNN is the UID last activated.

An active resource can be reset by entering the /PROF,R=CA7NNNN command, replacing NNNN with zeros (i.e. UID = 0000). This will mean that the userid no longer has an active profile and hence does not need to specify that resource at logon.

Important: If a list of all jobs for an application is requested in CA7, but no resource (or the relevant resource) for that user is active, those jobs with a non-zero UID will not appear. More importantly, CA7 will provide no information that any jobs are missing from the listing. In effect, if the relevant resource for an application is not active, no information on ‘secure’, non-zero UID jobs, will be provided.

4Triggering:

A trigger is a form of scheduling and is by far the most economical, efficient method to schedule jobs to run under CA-7 control. In an ideal situation, the very first job in a SYSTEM should always be scheduled by date/time...

There are two forms of triggering:
- COMPLETION of a job (job triggering)
- CREATION of a dataset (dataset triggering)

**NOTE** The Marks & Spencer standard specified that dataset triggers should only be used where absolutely necessary, for recovery work or to trigger a job based on a Return Code from a particular step!

Triggers are controlled by Schedule ID’s. Whatever SCHID the job doing the trigger or creating the dataset is using will be propagated to any triggered job. This is true in all cases except when TRIGID is specified.

The following is an example of a typical use of TRIGID:

The “BACKUP” job runs twice in this sequence, it’s the same job both times because remember that triggered jobs propagate their SCHID to following jobs, this is where a TRIGID is very useful, without it this sequence would LOOP.

BACKUP runs using SCHID = 1, under this ID it triggers UPDATE.

↓

UPDATE assumes SCHID = 1 from BACKUP, under this SCHID triggers REPORT.

↓
REPORT assumes SCHID = 1 from UPDATE, under this SCHID triggers BACKUP.

↓

BACKUP assumes SCHID = 1 from REPORT, under this SCHID triggers UPDATE.

UPDATE triggers REPORT...and so on.

To avoid this LOOP a TRIGID can be used. When REPORT triggers BACKUP it uses a TRIGID of 99.

BACKUP runs using SCHID = 1, under this ID it triggers UPDATE.

↓

UPDATE assumes SCHID = 1 from BACKUP, under this SCHID triggers REPORT.

↓

REPORT assumes SCHID = 1 from UPDATE, under this SCHID triggers BACKUP with a TRIGID of 99.

↓

BACKUP runs using SCHID = 99, under this SCHID it triggers nothing.

4.1 Getting to the JOB TRIGGERING screens:

The methods by which you can get to the CA-7 Job Triggering screens are:

1. Topline command – ‘SCHD.JTRG’
2. Topline command – ‘DB.2.4’
3. Select function 2 from the Data Base Maintenance Menu, then function 4.

---------------------  CA-7 DATA BASE MAINTENANCE MENU  ---------------------
FUNCTION ==>>   2

DATA BASE DEFINITION FOR:

1 - CPU JOB
2 - SCHEDULING
3 - JOB PREDECESSOR/SUCCESSOR
4 - WORKLOAD DOCUMENTATION
5 - INPUT/OUTPUT NETWORK
6 - DATA SET

OTHER FUNCTIONS AVAILABLE:

7 - JCL LIBRARY MAINTENANCE
8 - TEXT EDITOR
9 - CLEAR THE TEXT EDITOR ACTIVE AREA

ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT

PROGRAM: SDM0  MSG-INDX: 00  --  DB  --  99.166 / 10:17:37
MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE

FUNCTION ====>  4

DATE/TIME SCHEDULING FOR:
1 - CPU JOB
2 - INPUT NETWORK
3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
4 - JOB TRIGGERING OTHER CPU JOB(S)
5 - INPUT NETWORK TRIGGERING CPU JOB(S)
6 - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
7 - MODIFICATION TO RESOLVED SCHEDULE DATES
8 - BASE CALENDAR MAINTENANCE

PROGRAM: SM70  MSG-INDX: 00  --  DB.2  --  99.166 / 10:25:23
MESSAGE: ENTER OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

FUNCTION ====>  4
OPTIONS: A=ADD, D=DELETE, U=UPDATE, *=PROCESSED, ?=ERROR

PROGRAM: SM75    MSG-INDX: 00    -- DB.2.4    -- 99.166 / 10:27:06

MESSAGE: LIST FUNCTION SUCCESSFUL

END OF DATA REACHED

When wanting to change or add a trigger, under the “OPT” field, you have the option of placing an “A” or a “D” (ADD & DELETE respectively) on the respective line. So if you wanted to change the trigger from YSRWCP2 → YSRWCP3 to YSRWCP2 → YSRWCP4, for example, you would do the following:

--------------------------- CA-7 JOB TRIGGERING --------------------------

FUNCTION: upd    (FORMAT,LIST,UPD)    PAGE 0001

JOB: YSRWCP2

OPT SCHID TRGD-JOB TRGID DOTM QTM LDTM SBTM *---- EXCEPTIONS ----*

  d  000  YSRWCP3  0010  0010
  a  000  YSRWCP4  0010  0010
5 CPU Job Definition:

Each job to be controlled by CA-7 must first be defined in its database, the easiest method to do this is to “ADD” the job using the JOB SCREEN, Panel “DB.1” or just use the Topline command “JOB”.

------------------------- CA-7 CPU JOB DEFINITION -------------------------

FUNCTION: (ADD,DELETE,DD,DELPRRN,FORMAT,LIST,UPD)

JOB:

GENERAL: SYSTEM: JOBNET: OWNER: UID:

JCL: ID: MEMBER: RELOAD: EXEC: RETAIN-JCL:

LIB:

REQUIREMENTS: HOLD: JCL-OVRD: USE-OVRD-LIB: VERIFY: MAINT:

SATISFACTION LEAD-TIME: JOB: DSN: ARFSET:

EXECUTION: MAINID: INSERT-RMS: COND-CODE: RO:
DONT SCHEDULE -- BEFORE:               AFTER:

MESSAGES:         LTERM:                      REQUIREMENT-LIST:     PROMPTS:     
ERROR MSGS -- RQMTS NOT USED:    DSN NOT FOUND:

RESOURCES:         REGION:     CLOCK-TIME:     CPU-TIME:     
CLASS:           PRTY:         MSGCLASS:
TAPE DRIVES...TYPE1:    M    C  TYPE2:    M    C

PROGRAM:             MSG-INDX:  00 -- DB.1 -- 99.166 / 10:56:47
MESSAGE: ENTER FUNCTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------- CA-7 CPU JOB DEFINITION -------------------------
FUNCTION: LIST            (ADD,DELETE,DD,DELPRRN,FORMAT,LIST,UPD)
JOB: YSRWCP2
GENERAL:                 SYSTEM:     JOBNET:     OWNER: DSR000    UID: 0

JCL:                  ID: 145 MEMBER: YSRWCP2   RELOAD: N   EXEC: Y   RETAIN-JCL: N

LIB:
REQUIREMENTS:        HOLD: N   JCL-OVRD: N   USE-OVRD-
LIB: N   VERIFY: N   MAINT: N
SATISFACTION LEAD-TIME: JOB: 0   DSN: 0     ARFSET:

EXECUTION:      MAINID: SY1    INSERT-RMS: N   COND-CODE: 0   RO: NE
DONT SCHEDULE -- BEFORE: 00000  0000     AFTER: 99999  0000

MESSAGES:         LTERM: MASTER     REQUIREMENT-LIST: Y     PROMPTS: N
ERROR MSGS -- RQMTS NOT USED:    DSN NOT FOUND: Y

RESOURCES:         REGION: 960     CLOCK-TIME: 0004     CPU-TIME: 00004
CLASS: A     PRTY: 000     MSGCLASS: Q
TAPE DRIVES...TYPE1: 000   M   000   C  TYPE2: 000   M   000   C
6 Dataset Definition:

CA-7 keeps information on its database on ALL DATASETS used by jobs run under its control. Dataset information can either be added manually using the DSN SCREEN, panel “DB.6”, or automatically through LOAD PROCESSING (CA-7 recognises NEW Datasets).

------------------------- CA-7 DATA SET DEFINITION -------------------------

FUNCTION: (ADD,DELETE,FORMAT,LIST,RENAME,UPD)

DSN:
DSNBR:

NEWNAME:

TYPE: GDG:

SMF FEEDBACK REQUIRED: POST AT CLOSE TIME:

DEVICE:
DSORG:
RECFM:
LRECL:
BLKSIZE:
6.1 **Internal Datasets:**

These are datasets which are created by a CA-7 controlled job (DISP=NEW). As the job runs it generates SMF information on the datasets it uses, hence CA-7 can keep track of when each dataset is created and AUTOMATICALLY satisfy dataset dependencies and triggers.

6.2 **External Datasets:**

These are datasets that are not created by a CA-7 controlled job and for which no SMF information is received. This being the case, CA-7 cannot satisfy any dependencies on these datasets, hence, if any jobs have EXTERNAL DATASET REQUIREMENTS these would need MANUAL intervention to run (ie. An operator would need to satisfy these requirements with a command)

Examples of these datasets are STEPLIBS, USER CATALOGS, SORTLIBS and PDS libraries which may hold SYSIN data.

In order to avoid this, all external datasets should be made PERMANently available.

**NORM:**

A NORM dataset (default) means that ANY JOB which INPUTS THAT DATASET will automatically have the dataset flagged as a dataset requirement.

NB: As this is the default, any datasets ADDed by LOAD PROCESSING will be flagged as NORM, this includes INTERNAL & EXTERNAL datasets.

**PERM:**

A PERM dataset (permanently available, means that ALL dependencies on this dataset are ignored.

You can make a dataset PERM by using the JOBCONN, DSN screen or on a system level by using the DSN SCREEN (below).

Command = “DB.6”

```
------------------------- CA-7 DATA SET DEFINITION -------------------------
FUNCTION: (ADD,DELETE,FORMAT,LIST,RENAME,UPD)

DSN: 

DSNBR:

NEWNAME:

TYPE: GDG:
```
7  **Job Predecessor/Successor:**

Job Predecessors/Successors (Dependencies) are used in combination with Scheduling criteria to control job sequencing in CA-7.

When a job is scheduled, be it triggered or Schedule Scan, the job enters the request queue along with a copy of its pre-execution requirements, which can include:

- Successful completion of a predecessor job/s (Job dependency)
- Creation of a dataset/s (Dataset dependency)
- Free form Text (User Requirement)
- JCL Override (specified on job screen)
- Submit time (specified as part of the scheduling criteria)

The job will not be submitted until all its requirements have been satisfied, manually or automatically, to ensure correct job sequencing. Dependencies are defined by SCHID, and a further qualification called Satisfaction lead-time. To get to the CA7 CPU Job Predecessor panel you can use:

- Topline command – ‘JOBCONN,JDEP’
- Topline command – ‘DB.3.2’
- Select function 3 from the CA7 Database Maintenance Menu (DBM), and then function 2 from the CA7 Job Predecessor/Successor menu.
FUNCTION ==> 3

DATA BASE DEFINITION FOR:
1 - CPU JOB
2 - SCHEDULING
3 - JOB PREDECESSOR/SUCCESSOR
4 - WORKLOAD DOCUMENTATION
5 - INPUT/OUTPUT NETWORK
6 - DATA SET

OTHER FUNCTIONS AVAILABLE:
7 - JCL LIBRARY MAINTENANCE
8 - TEXT EDITOR
9 - CLEAR THE TEXT EDITOR ACTIVE AREA

ACTIVE AREA NOW CONTAINS 0000 LINES OF TEXT

PROGRAM: SDM0 MSG-INDX: 00 --
DB -- 99.166 / 12:28:11

MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE

------------- CA-7 JOB PREDECESSOR/SUCCESSOR MENU -------------
FUNCTION ==> 2

EXECUTION REQUIREMENTS DEFINED BY:
1  - DATA SET PREDECESSORS
2  - CPU JOB PREDECESSORS OR
    MUTUALLY EXCLUSIVE JOBS (CAN NOT RUN AT SAME
    TIME)
4  - INPUT NETWORK PREDECESSORS OR
    OUTPUT NETWORK SUCCESSORS
6  - USER MEMO-FORM
7  - REPORT IDS CREATED

PROGRAM: SM60           MSG-INDEX: 00
DB.3   -- 99.166        / 12:29:13
MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------  CA-7 CPU JOB PREDECESSORS  ------------------------
FUNCTION: (FORMAT, LIST, UPD)
PAGE 0001
PRED FOR JOB:             LIST-SCHID:

OPT SCHID     LEADTM     PRED-JOB     NEXT-RUN
For more detailed information regarding Satisfaction Lead Time, look in the “CA-7 User Guide - version 3.0”. This will demonstrate how to use this parameter effectively.

A job can be dependent on any number of other jobs completing beforehand. If the triggering job is the only requirement for the job then NO DEPENDENCY is needed, since the job will not be initiated until the triggering job completes.

### 7.1 Mutually Exclusive Jobs:

You can define to CA-7 that jobs are not to be run concurrently. These jobs are not dependent on each other, they simply cannot run at the same time (maybe they update the same files). This is also known as negative dependency.

The same screen is used to define a mutually exclusive job as with predecessor. Keep in mind that with MUTUALLY EXCLUSIVE jobs, if one job abends the other will still run.

-------------------
CA-7 JOB PREDECESSOR/SUCCESSOR MENU
-------------------

FUNCTION ==> 2

EXECUTION REQUIREMENTS DEFINED BY:

1 - DATA SET PREDECESSORS
2 - CPU JOB PREDECESSORS OR MUTUALLY EXCLUSIVE JOBS (CAN NOT RUN AT SAME TIME)
4 - INPUT NETWORK PREDECESSORS OR OUTPUT NETWORK SUCCESSORS
6 - USER MEMO-FORM PREDECESSORS
PROGRAM: SM60 MSG-INDX: 00 --
DB.3 -- 99.166 / 14:11:32
MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------ CA-7 CPU JOB PREDECESSORS ------------------------
FUNCTION: upd (FORMAT,LIST,UPD) PAGE 0001
PRED FOR JOB: JOB123 LIST-SCHID:
OPT SCHID LEADTM PRED-JOB NEXT-RUN
a 0 0 /JOBXYZ

OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
In the above example, JOBXYZ has been made mutually exclusive with JOB123. When CA-7 goes to submit this job it will first check to see whether JOB123 is in either the READY or ACTIVE queues. If so, then JOBXYZ will be held back until JOB123 either completes or abends.

Currently, the reverse is not true, if JOBXYZ was running and JOB123 came along it would run, which is why both jobs must be updated, i.e. JOB123 must also be made mutually exclusive to JOBXYZ, as follows:

------------------------  CA-7 CPU JOB PREDECESSORS  ------------------------
FUNCTION: upd   (FORMAT,LIST,UPD)            PAGE 0001
PRED FOR JOB: JOBXYZ     LIST-SCHID:
OPT SCHID LEADTM     PRED-JOB     NEXT-RUN
a   0  0     /JOB123

OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
Dataset Predecessors:

A job can be dependent on the creation of a dataset/s before being released to run, this is called a dataset predecessor. The standard at M&S is to use (where possible) a JOB PREDECESSOR instead, these are much easier for the operators to track.

For CA-7 to satisfy a dataset predecessor automatically, the datasets must be created by a JOB RUN UNDER CA-7 CONTROL. When a job goes through LOAD PROCESSING, any INPUT DATASETS the job has are automatically flagged as dataset requirements, this includes:

- STEPLIBS
- VSAM CATALOGS
- SORTLIBS
- ETC.

Datasets such as these are NEVER CREATED so these must be made PERManently available using the DSN screen. It is not such a bad idea to make all the datasets PERM (except datasets used to trigger).

To get to the CA-7 Dataset Predecessor panel you can use:

1. Topline command – ‘JOBCONN,DSN’
2. Topline command – ‘DB.3.1’
3. Topline command – DBM from any panel, then function 3, then function 1 from the CA-7 Job Predecessor/Successor Menu.

--- CA-7 JOB PREDECESSOR/SUCCESSOR MENU ---

FUNCTION ===> 1

EXECUTION REQUIREMENTS DEFINED BY:

1 - DATA SET PREDECESSORS
2 - CPU JOB PREDECESSORS OR
MUTUALLY EXCLUSIVE JOBS (CAN NOT RUN AT SAME TIME)
4 - INPUT NETWORK PREDECESSORS OR
OUTPUT NETWORK SUCCESSORS
6 - USER MEMO-FORM PREDECESSORS
7 - REPORT IDS CREATED
PROGRAM: SM60  MSG-INDX: 00  --  DB.3  --  99.166 / 15:31:44
MESSAGE: SPECIFY OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE

------------------------  CA-7 DATA SET PREDECESSORS  ------------------------
FUNCTION: LIST (FORMAT,LIST,UPD)  PAGE 0001
PRED FOR JOB: YSRWCP2  LIST-SCHID: NEXT
OPT SCHID  LEADTM  *------------------- DATASET NAME -------------------*  DSNBR PERM -RUN
  0  0000  SR.YT.PSREORG  106823  N  YES
  0  0000  SR.YT.SORTOUT  106824  N  YES
  0  0000  SR.YTST.CMDLIB  106801  N  YES

OPTIONS: A=ADD,D=DELETE,U=UPDATE,*=PROCESSED,?=ERROR
PROGRAM: SM61  MSG-INDX: 00  --  DB.3.1  --  99.166 / 15:35:21
MESSAGE: LIST FUNCTION SUCCESSFUL
Maintaining the datasets is very much like it is for maintaining predecessors, i.e. “D” for delete & “A” for ADD.
Date/Time Scheduling (Calendar Scheduling):

In order to schedule jobs by date and time you will use a Base Calendar (for more information see appendices). Once you’ve selected the appropriate Base Calendar, you must then define what days the job is to be scheduled and what SCHID/s the job is run under on those days.

Finally the last step is CALENDAR RESOLUTION. This process takes your schedule definition and the base calendar specified, and produces a matrix of the exact days the job will be run. CA-7 will scan this matrix when searching for jobs to schedule.

To get to these screens you can use either:
1. Topline command – ‘SCHD,JOB’
2. Topline command – ‘DB.2.1 (the panel ID)’
3. Topline command – ‘DBM’, then function 2 from the CA-7 Database Maintenance Menu, then function 1 (CPU Job) from the scheduling menu.

DATA BASE DEFINITION FOR:

1. CPU JOB
2. SCHEDULING
3. JOB PREDECESSOR/SUCCESSOR
4. WORKLOAD DOCUMENTATION
5. INPUT/OUTPUT NETWORK
6. DATA SET

OTHER FUNCTIONS AVAILABLE:

7. JCL LIBRARY MAINTENANCE
8. TEXT EDITOR
9. CLEAR THE TEXT EDITOR ACTIVE AREA
PROGRAM: SDM0  MSG-INDX:  00  --
DB    --  99.167 / 10:01:25

MESSAGE: SPECIFY DESIRED OPTION OR ENTER A COMMAND ON THE TOP LINE

-----------------------------------  CA-7 SCHEDULING MENU  -----------------------------------
FUNCTION ===>              1

DATE/TIME SCHEDULING FOR:
  1  - CPU JOB
  2  - INPUT NETWORK
  3  - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
  4  - JOB TRIGGERING OTHER CPU JOB(S)
  5  - INPUT NETWORK TRIGGERING CPU JOB(S)
  6  - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
  7  - MODIFICATION TO RESOLVED SCHEDULE DATES
  8  - BASE CALENDAR MAINTENANCE
In this example, we’re creating a NEW schedule (edit) for job H5KPTEST and will use SCALyy05 (05) Base Calendar. If the schedule already existed and I wanted to change it I would use the ‘FE’ function instead of EDIT. When you “fetch” a schedule, however, you don’t need to specify the Base Calendar, as this information is stored in the database.

FUNCTION:   (ADD,DELETE,EXIT,FORMAT,LIST,REPL,SAVE,SR,SS)

JOB:   H5KPTEST   SCHID:   SCAL:   ROLL:   INDEX:
The screen above looks a lot more complicated than it actually is, however, I would suggest that when date/time scheduling you refer to the “CA-7 User Guide – version 3.0”. The main reason being that it requires a bit more in depth knowledge of CA-7 (reg: SCHIDS, INDEXES, DUE OUT TIMES, etc), but is still quite straight forward to understand and apply.

This also applies to Calendar Resolution.

9.1 MODIFICATION TO RESOLVED SCHEDULE DATES

Due to the constraints of the scanning screens, you may not always be able to schedule a job on exactly the right date. This will depend on the requirements of the job/s.

For example, a job needs to be scheduled on the third Tuesday of every month. However, only if there has been 3 Fridays beforehand in that month. Ultimately, this means that potentially you could schedule the job to run monthly on the 3rd week of the month on a Tuesday, but you may have inconsistencies in the scheduling. So in this example, you’d have to move the week back 1 further to accommodate for the extra Friday. Modifying a resolved schedule manually does this.

(see next page)

To get to the screen which does this, Type DB.2 (the Scheduling menu)
DATE/TIME SCHEDULING FOR:
1 - CPU JOB
2 - INPUT NETWORK
3 - OUTPUT NETWORK

TRIGGER SCHEDULING FOR:
4 - JOB TRIGGERING OTHER CPU JOB(S)
5 - INPUT NETWORK TRIGGERING CPU JOB(S)
6 - DATA SET TRIGGERING CPU JOB(S)

OTHER FUNCTIONS AVAILABLE:
7 - MODIFICATION TO RESOLVED SCHEDULE DATES
8 - BASE CALENDAR MAINTENANCE

PROGRAM: SM70    MSG-INDX: 00    -- DB.2    -- 01.254 / 11:24:45
MESSAGE: ENTER OPTION, TRANSFER OR ENTER A COMMAND ON THE TOP LINE
Option 7 is the one you need

---------------------- CA-7 MODIFICATION TO RESOLVED SCHEDULE DATES ----------------------
FUNCTION: LIST    (FORMAT, LIST, UPD)

JOB: PGDDUMMY    NETWORK:
MODSTAT:
SCHID: 101    YEAR: 2001

1 1 2 2 3 3

....5....0 ....5....0 ....5....0 1
JUL 0000000000 0000000000 0000000000 0

AUG 0000000000 0000000000 0000000000 0

SEP 0000000000 0000000000 0000000000
As you can see from the above screen, for SCHID 101, this job is scheduled to run on the 15\textsuperscript{th} of January (left-hand side). This is indicated by the “1” on the January line.

To change the day it runs, this screen functions like many of the others. By overtyping the 0’s or 1’s AND having the FUNCTION field at the top of the screen on UPD. Bear in mind that the job is relative to the SCHID. So in this case, this is only for SCHID = 101, despite the fact that the job runs at other times of year, but under different SCHIDS.