



# Control-M for z/OS for A-AUTO 9.0.00 Conversion Guide



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  - Product version (release number)
  - License number and password (trial or permanent)
- Operating system and environment information
  - Machine type
  - Operating system type, version, and service pack or other maintenance level such as PUT or PTF

- System hardware configuration
- Serial numbers
- Related software (database, application, and communication) including type, version, and service pack or maintenance level
- Sequence of events leading to the issue
- Commands and options that you used
- Messages received (and the time and date that you received them)
  - Product error messages
  - Messages from the operating system, such as `file system full`
  - Messages from related software

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# About This Guide

This conversion guide reviews basic concepts relevant in converting from A-AUTO to CONTROL-M, and provides step-by-step instructions on how to use the CONTROL-M conversion tool.

This guide is divided into the following chapters:

## **Chapter 1 – Conceptual Overview**

Overview of basic concepts describing the conversion from A-AUTO to CONTROL-M

## **Chapter 2 – Conversion Process Flow**

Description and details of the conversion process batch jobs are provided

## **Chapter 3 – Conversion Steps**

Step-by-step procedure for installing and operating the conversion tool

## **Chapter 4 – Conversion Details**

Definitions of relevant A-AUTO data parameters in relation to corresponding CONTROL-M parameters, and a description of unique CONTROL-M parameters that can be automatically set in the CONTROL-M scheduling tables

## **Appendix A – Downloading and installing the CONTROL-M Conversion tool**

Description of the CONTROL-M Conversion tools, and the procedure for downloading and installing them.

## **Appendix B – Conversion Parameters**

Various parameters for the conversion process

### **Appendix C – Messages**

Messages and codes of the conversion process

### **Appendix D – Planning the Conversion**

Advance planning before carrying out the conversion

### **Appendix E – A-AUTO Conversion for Fujitsu sites**

Step-by-step procedure for A-AUTO conversion at Fujitsu sites

### **Appendix F – Problem Reporting**

Instructions on reporting problems to BMC Software Customer Support

## **Conventions Used in This Guide**

Notational conventions that may be used in this guide are explained below.

### **Standard Keyboard Keys**

Keys that appear on the standard keyboard are identified in boldface, for example, **Enter**, **Shift**, **Ctrl+S** (a key combination), or **Ctrl S** (a key sequence).

---

### **— WARNING —**

---

The commands, instructions, procedures, and syntax illustrated in this guide presume that the keyboards at your site are mapped in accordance with the EBCDIC character set. Certain special characters are referred to in this documentation, and you must ensure that your keyboard enables you to generate accurate EBCDIC hex codes. This is particularly true on keyboards that have been adapted to show local or national symbols. You should verify that

**\$** is mapped to x'5B'

**#** is mapped to x'7B'

**@** is mapped to x'7C'

If you have any questions about whether your keyboard is properly mapped, contact your system administrator.

---

## Preconfigured PFKeys

Many commands are preconfigured to specific keys or key combinations. This is particularly true with regard to numbered PF keys, or pairs of numbered PFKeys. For example, the END command is preconfigured to, and indicated as, **PF03/PF15**. To execute the END command, press either the **PF03** key or the **PF15** key.

Instructions to enter commands may include

- only the name of the command, such as, enter the END command
- only the PF keys, such as, press **PF03/PF15**
- or both, such as, press **PF03/PF15**, or enter the END command

## Command Lines and Option Fields

Most screens contain a command line, which is primarily used to identify a single field where commands, or options, or both, are to be entered. These fields are usually designated **COMMAND**, but they are occasionally identified as **COMMAND/OPT** or **COMMAND/OPTION**.

Option field headings appear in many screens. These headings sometimes appear in the screen examples as **OPTION**, or **OPT**, or **O**.

## Names of Commands, Fields, Files, Functions, Jobs, Libraries, Members, Missions, Options, Parameters, Reports, Subparameters, and Users

The names of commands, fields, functions, jobs, libraries, members, missions, options, parameters, reports, subparameters, users, and most files, are shown in standard UPPERCASE font.

## User Entries

In situations where you are instructed to enter characters using the keyboard, the specific characters to be entered are shown in this **UPPERCASE BOLD** text, for example, type **EXITNAME**.

## Syntax statements

In syntax, the following additional conventions apply:

- A vertical bar ( | ) separating items indicates that you must choose one item. In the following example, you would choose *a*, *b*, or *c*:

a | b | c

- An ellipsis ( . . . ) indicates that you can repeat the preceding item or items as many times as necessary.
- Square brackets ( [ ] ) around an item indicate that the item is optional. If square brackets ( [ ] ) are around a group of items, this indicates that the item is optional, and you may choose to implement any single item in the group. Square brackets can open ( [ ) and close ( ] ) on the same line of text, or may begin on one line of text and end, with the choices being stacked, one or more lines later.
- Braces ( { } ) around a group of items indicates that the item is mandatory, and you must choose to implement a single item in the group. Braces can open ( { ) and close ( } ) on the same line of text, or may begin on one line of text and end, with the choices being stacked, one or more lines later.

### Screen Characters

All syntax, operating system terms, and literal examples are presented in this typeface. This includes JCL calls, code examples, control statements, and system messages. Examples of this are:

- calls, such as

---

```
CALL 'CBLTDLI'
```

---

- code examples, such as

---

```
FOR TABLE owner.name USE option, . . . ;
```

---

- control statements, such as

---

```
//PRDSYSIN DD * USERLOAD PRD(2) PRINT
```

---

- system messages, both stand-alone, such as You are not logged on to database database\_name, and those embedded in text, such as the message You are not logged on to database database\_name, are displayed on the screen.

## Variables

Variables are identified with *italic* text. Examples of this are:

- In syntax or message text, such as  
Specify database *database\_name*
- In regular text, such as  
replace database *database\_name1* with database *database\_name2* for the current session
- In a version number, such as  
EXTENDED BUFFER MANAGER for IMS 4.1.*xx*

## Special elements

This book includes special elements called *notes* and *warnings*:

---

### — **NOTE** —

Notes provide additional information about the current subject.

---

---

### — **WARNING** —

Warnings alert you to situations that can cause problems, such as loss of data, if you do not follow instructions carefully.

---





# Conceptual Overview

This chapter includes the following topics:

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# Overview

This conceptual overview is intended for production control personnel who are familiar with A-AUTO terminology. Experience with CONTROL-M is recommended, but not required.

The A-AUTO to CONTROL-M conversion tool is provided by BMC Software to assist in the creation of the primary product elements for CONTROL-M. It is designed to expedite the conversion process by automatically translating the most commonly built A-AUTO scheduling elements into functionally equivalent processes in CONTROL-M. For more information on the A-AUTO conversion tool, see [“CONTROL-M A-AUTO conversion tool” on page 21](#).

The primary conversion units are the A-AUTO network definition and the CONTROL-M scheduling table. A brief overview of these units, and the logic used by the conversion tool to create CONTROL-M scheduling tables from A-AUTO network definitions, is provided on the following pages.

In A-AUTO, defining a network is a process that requires the use of the following definition screens.

**Table 1 Definition Screens Used by A-AUTO**

A-AUTO Screen	Definition Process
Network Information Screen	Network specifications
Job Information Screen	All jobs, and their dependencies, in a network
Schedule Master Screen	Network scheduling information
Data-ID Screen	All data IDs for related networks

---

**NOTE**

Under CONTROL-M, all comparable definitions are handled using the following screens—the Job Scheduling Definition screen (Screen 2), the IOA Conditions/Resources screen (Screen 4) and the IOA Calendar Definition screen (Screen 8).

---

In this chapter, each of the components of the A-AUTO network definition is discussed in relation to the management of the corresponding components under CONTROL-M.

# Network and Job Definition

In A-AUTO, networks are defined using the Network Information screen. Information relevant to a specific network, such as input attributes, priority, system qualifier, preceding networks, and so on, is specified in this screen. Each network definition is an entity in the Network Master file. All definitions created using the Network Information screen apply to all jobs in the network.

In CONTROL-M, jobs, including scheduling criteria and other parameters, are defined individually, using the Job Scheduling Definition screen. This results in increased versatility in, and greater independence among, job definitions.

Related job scheduling definitions are stored in members called group scheduling tables. Each group scheduling table contains a group entity and one or more related jobs.

Scheduling tables are stored in partitioned datasets called scheduling table libraries. The number of scheduling table libraries that can be used at a site is unlimited. This feature of CONTROL-M enables you to decentralize your production control.

The conversion tool converts each A-AUTO network definition into a CONTROL-M group scheduling table in which each job in the network is defined.

## Job Dependencies

In A-AUTO, the Job Information screen is used to define all jobs related to a certain network, and to establish the execution order of the jobs.

In CONTROL-M, job dependency, meaning job flow, is controlled by means of “prerequisite conditions.” A prerequisite condition is a descriptive name given to a specific situation, event or condition. A prerequisite condition can be defined as an IN condition or an OUT condition for the job.

An IN condition for a job is a prerequisite condition that must exist, in a file called the IOA Conditions file, before the job can be executed.

An OUT condition for a job is a prerequisite condition that is (generally) added to the IOA Conditions file upon completion of the job.

Job dependencies can be established by defining a prerequisite condition as an IN condition of one job, and an OUT condition of another job.

The conversion tool automatically converts A-AUTO job sequences into IN and OUT prerequisite condition definitions in order to establish in CONTROL-M the same network tree structure as existed in A-AUTO. For more information, see [Chapter 4, “Conversion Details.”](#)

In relation to prerequisite conditions, there are other significant points:

- Depending on the outcome of the job execution, different prerequisite conditions can be added.
- While most prerequisite conditions are added automatically upon job completion, prerequisite conditions can also be added manually. For examples, see [“4. INPUT-ATTR” on page 46](#), [“5. MONITOR ON” on page 47](#), and [“6. HOLD-ATTR” on page 47](#).
- Jobs can also delete prerequisite conditions that are no longer required.

## Scheduling

In A-AUTO, after networks are defined (as described in [“Network and Job Definition” on page 19](#), and [“Job Dependencies” on page 19](#)), scheduling information, such as every day or once a month, is specified using the Schedule Master screen. The specified schedule is associated with the specified network. All network jobs get the same scheduling information.

An A-AUTO scheduled network can be defined with several different types of scheduling information. For each piece of scheduling information, such as different scheduling dates or execution environments, a duplicate key must be specified.

In CONTROL-M, the conversion defines a Group Entity in the Group scheduling table with a schedule tag containing the Basic Scheduling parameters that correspond to the schedule criteria in the A-AUTO schedule master screen. In addition, the conversion tool creates one scheduling tag for each duplicate key in the A-AUTO network. The name of the scheduling tag is composed of the network name, concatenated with the duplicate key name. For example, if there is a network called NETWORK that has two duplicate keys (DUP1 and DUP2), three schedule tags in the group entity are created, named NETWORK, NETWORK\_DUP1 and NETWORK\_DUP2.

## Data-ID

In A-AUTO, the Data-ID is the mechanism by which one can specify a network's dependency on a data arrival event. The Data-ID field in the Network Information screen can be used to specify that a network must wait for a specific Data-ID.

In CONTROL-M, manual in conditions are used for defining dependencies on any external events, such as data arrival.

The conversion tool creates the relevant dependency by adding a manual condition to the Start dummy job in the relevant CONTROL-M scheduling table. This is discussed in [“1. NETWORK NAME” on page 45](#). The format of the manual IN condition is:

---

```
DATAID-dataid
```

---

## CONTROL-M A-AUTO conversion tool

The conversion consists of a sequence of batch jobs. Although these jobs run independently of A-AUTO and CONTROL-M, CONTROL-M must be installed in order to perform the conversion.

The conversion performs the following functions:

- creates the CONTROL-M Scheduling Table and Documentation libraries, based on A-AUTO reports
- creates the CONTROL-M calendar library based on A-AUTO Calendar reports
- converts A-AUTO instructions in JCL libraries to CONTROL-M format
- enables the customer to automatically set unique CONTROL-M parameters in the resulting CONTROL-M scheduling tables
- issues messages about problems and errors found in the A-AUTO definitions

The conversion tool is delivered in source format. If special requirements exist, the conversion tool can be tailored locally.



## Conversion Process Flow

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# Overview

This chapter describes the components and flow of the conversion process from the perspective of jobs, programs and datasets.

A familiarity with the conversion process flow helps in understanding the conversion logic and the installation and operation steps discussed in [Chapter 3, “Conversion Steps.”](#)

---

**NOTE**

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BMC Software recommends that you read [Appendix D, “Planning The Conversion”](#) before beginning the conversion process, The preparatory steps described in that appendix will assist the conversion process to run smoothly.

---

The process is comprised of the following primary jobs:

**Table 2 Primary Jobs in the Conversion Process**

Job	Description
JOB1	Convert information from A-AUTO reports
JOB2	Create the CONTROL-M JCL libraries
JOB3	Create the CONTROL-M Scheduling Table library

## JOB1 Convert Information From A-AUTO Reports

### Description

JOB1 extracts information from several A-AUTO reports and converts it to the relevant CONTROL-M components as follows:

- Program CTMATOMN reads the A-AUTO Network Registration List report (NM020) and the Dataset Flag Status report (DF020), and creates the Job Scheduling Definition file (OUTLST) and a System Qualifiers file.



- Program CTMATOSC reads the A-AUTO Schedule Registration List report (SM020), and adds to the Job Scheduling Definition file and the DADAILY List file. The DADAILY List file contains the list of names of all scheduling tables that are created by the Conversion tool. These tables correspond to networks in A-AUTO in which the EXECID field is not equal to zero.
- Program CTMATOCL reads the A-AUTO Calendar Inquiry List report (HT020) and the Reference Master Maintenance Information report (KM010), and creates a CONTROL-M Calendar library.
- Program CTMATOAE reads the A-AUTO Parameter Master Listing report, and creates a CONTROL-M AutoEdit library whose members are the A-AUTO jobnames. The contents of each member are CONTROL-M AutoEdit instructions for each KEY-NAME, of the form

---

```

%%IF %%KEY EQ KEY-NAME-1
    data-line-1
    data-line-2
    ....
%%ELSE
%%IF %%KEY EQ KEY-NAME-2
    data-line-1
    data-line-2
    ....
%%ELSE
    ....
%%ENDIF
    ....
%%ENDIF

```

---



---

**NOTE**

---

There may be multiple keys in the case of each job.

---

Following %%IF, the data, or JCL, statements are built based on the A-AUTO Parameter Master Listing data lines. For more information, see [Chapter 4, “Conversion Details.”](#)

Source code for these programs resides in the conversion source library and can be locally tailored.

## Input

1. A-AUTO Network Registration List report (NM020)
2. A-AUTO Dataset Flag Status report (DF020)

3. A-AUTO Schedule Registration List report (SM020)
4. A-AUTO Parameter Master Listing report (PM010)
5. A-AUTO Calendar Inquiry List report (HT020)
6. A-AUTO Reference Master Maintenance Information report (KM010)

## Output

1. Job Scheduling Definition file  
Default name: CTM.AUTO.OUTLST  
File characteristics: sequential, record length 100, block size 23400
2. CONTROL-M AutoEdit library  
Default name: CTM.AUTO.AUTOEDIT  
File characteristics: PDS, record length 80, block size 3120
3. CONTROL-M Calendar library  
Default name: CTM.AUTO.CALENDAR  
File characteristics: PDS, record length 80, block size 3120
4. CONTROL-M Documentation library  
Default name: CTM.AUTO.DOC  
Library characteristics: PDS, record length 80, block size 9040
5. System Qualifiers file  
Default name: CTM.AUTO.SYSTEM  
File characteristics: sequential, record length 80, block size 9040
6. DADAILY List file  
Default name: CTM.AUTO.DADAILY  
File characteristics: sequential, record length 80, block size 800
7. Message file  
Default name: CTM.AUTO.DAMSG  
File characteristics: sequential, record length 133, block size 1330

# JOB2 Create the CONTROL-M JCL Libraries

## Description

JOB2 activates program CTMATOJC, which creates the CONTROL-M JCL libraries from the A-AUTO secondary and primary JCL libraries. Source code for this program resides in the conversion source library and can be locally tailored.

## Parameter

The A-AUTO JCL libraries are specified in the JCL of JOB2 by specification of DD names in the format ATOJCL $nn$ , where  $nn$  is any two-digit number. An  $nn$  value of 00 indicates a secondary library. As many as 99 primary libraries can be specified by coding suffixes from 01 through 99 in the DD name.

By default, or if PARM=00 is coded on the EXEC statement for this job, the program starts processing from the secondary library. To begin conversion processing from a primary JCL library, bypassing the secondary library, the value for  $nn$  in the JCL PARM field of the EXEC statement must be greater than 00, and must correspond to the first primary JCL library DD name suffix in the JCL stream.

## Input

**Table 3 A-AUTO JCL Library Creation**

Input	Description
1.	System Qualifiers file (CTM.AUTO.SYSTEM, created by JOB1)
2.	A-AUTO JCL libraries to be converted: <ul style="list-style-type: none"> <li>■ DDNAME: ATOJCL00 (Secondary library)</li> <li>■ DDNAME: ATOJCL01 (Primary library)</li> <li>■ Any additional primary libraries using DD NAME ATOJCL<math>nn</math>, where <math>nn=02, 03, \dots</math></li> </ul>

## Output

1. CONTROL-M JCL Libraries:
  - DDNAME: CTMJCL00 (Secondary library)  
Default name: CTM.JCLLIB.OVERRIDE  
File characteristics: PDS, record length 80, block size 3120
  - DDNAME: CTMJCL01 (Primary library)  
Default name: CTM.JCLLIB.PRIMARY
  - Additional primary libraries using DD NAME CTMJCL $nn$  (where  $nn=0\dots$ )  
corresponding to the A-AUTO input libraries.
2. Job Scheduling Definition file  
Default name: CTM.AUTO.OUTLSTJC  
File characteristics: sequential, record length 100, block size 23400
3. File containing system prefix AutoEdit Variables  
Default name: CTM.AUTO.SYSNAMES  
File characteristics: sequential, record length 80, block size 800.
4. File containing AutoEdit JCL Variables which specify the dataset names of the CONTROL-M JCL Libraries created by this step  
Default name: CTM.AUTO.LIBNAMES  
File characteristics: sequential, record length 80, block size 800.
5. Conversion messages written to the Message file (CTM.AUTO.DAMSG; for more information, refer to the description of JOB1).

## JOB3 Create the CONTROL-M Scheduling Table Library

### Description

JOB3 activates program CTM4BLTA, which merges the Job Scheduling Definition files created in JOB1 and JOB2, and formats the merged file as an input parameter file. This input parameter file is used by the CONTROL-M utility CTMBLT to create the CONTROL-M Scheduling Table library.

## Input

1. File CTM.AUTO.OUTLST (created in JOB1)
2. File CTM.AUTO.OUTLSTJC (created in JOB2)

## Output

1. Scheduling Table Definition file containing the input control statements for utility CTMBLT  
Default name: CTM.AUTO.INPRM  
File characteristics: sequential, record length 80, block size 8000
2. Conversion messages written to the Message file (CTM.AUTO.DAMSG; see JOB1)
3. CONTROL-M Scheduling Table library  
Default name: CTM.AUTO.SCHEDULE  
File characteristics: PDS, record length 80, block size 9040



## Conversion Steps

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# Overview

---

**NOTE**

---

If you have not yet downloaded and installed the CONTROL-M conversion tools, do so now according to the instructions in [Appendix A, “Downloading and installing the CONTROL-M conversion tools”](#).

---

Installation and operation of the conversion tool consists of a series of steps.

BMC Software recommends that you first review the contents of [Appendix D, “Planning The Conversion,”](#) then read through the remainder of this chapter before performing the steps. It is important to follow the outlined sequence of the steps to ensure a successful conversion.

The following is a summary checklist of the steps:

- 1 Create the conversion source and load libraries
- 2 Check and modify parameters in the DEFAULTS member and perform preliminary customization
- 3 Tailor and run the ASMLINK member
- 4 Tailor and run the JOB1 member
- 5 Tailor and run the JOB2 member
- 6 Tailor and run the JOB3 member
- 7 Perform final adjustments
- 8 Check the conversion results



## Step 1 - Create the conversion source and load libraries

1. Run job \$\$INIT in the IOA CONV library to create the A-AUTO conversion source library and allocate the conversion load library.
2. Tailor the following parameters in the member in accordance with your local conventions:

**Table 4 Parameters to be Adjusted**

Parameter	Description
Job statement	
INLIB	IOA CONV library name
OUTLIB	A-AUTO conversion source library name
LOADLIB	A-AUTO conversion load library name
UNIT	Unit name of DASD device
VOLSER	Volser of DASD device
PRODUCT	AAUTO

3. Submit the job for execution. The job must finish with a completion code of 0.

## Step 2 - Check and Modify Parameters in the DEFAULTS Member and Perform Preliminary Customization

1. Check each of the CONTROL-M parameters specified in member DEFAULTS in the conversion source library, and modify as you think necessary to suit local requirements at your site. [Appendix A, "Downloading and installing the CONTROL-M conversion tools"](#) contains a detailed description of each parameter.
2. The conversion program replaces the A-AUTO AUTO-DELETE option with a utility program that deletes the JCL member from the JCL secondary library. In certain instances, this utility program must be placed in the JCL stream following the last JCL statement in the member. In this case, the JCL conversion program, CTMATOJC, creates a job statement prior to including the utility program, using AutoEdit commands. This job statement can be customized according to local JCL conventions by editing program CTMATOJC in the conversion source library at label JOBCRD. For more information, see ["30. AUTO-DELETE" on page 59](#).

## Step 3 - Tailor and Run the ASMLINK Member

The ASMLINK member assembles and link-edits all conversion programs using the tailored option member in the previous step.

1. Tailor the JCL of this member in accordance with your local conventions:
  - Job statement
  - Standard IBM Macros library (MAC, MAC1 parameters)
  - Conversion source library name (SRCLIB parameter)
  - Conversion load library name (LOADLIB parameter)
  - IOA LOAD library name (IOALOAD parameter)
  - IOA Macro library name (IOAMAC parameter)
  - Unit name of DASD device (UNIT parameter)
2. Submit the job for execution.
3. Check the SYSOUT for completion codes and error messages. No condition code should be higher than 4. IBM message IEW0461 can be ignored.

---

— **NOTE** —

---

Re-execute this step whenever changes are made to member DEFAULTS or whenever any fix is applied to the source modules.

---

## Step 4 - Tailor and Run the JOB1 Member

1. Tailor the following specifications in member JOB1 in the conversion source library in accordance with your local conventions:
  - Job statement
  - Conversion load library name (in STEP0, DD statement CTMLOAD)
  - IOA LOAD library name (in STEP0, DD statement IOALOAD)
  - IOA PARM library name (in STEP0, DD statement IOAPARM)
  - IOA IOAENV library name (in STEP0, DD statement IOAENV)
  - Network Registration List Report file name (NM020) (in STEP0, DD statement DANM020)

- IOA LOG file (in STEP0, DD statement IOALOG)
  - Dataset Flag Status Report file name (DF020) (in STEP0, DD statement DADF020)
  - Schedule Registration List Report file name (SM020) (in STEP0, DD statement DASM020)
  - Calendar Inquiry List Report file name (HT020) (in STEP0, DD statement DAHT020)
  - Reference Master Maintenance Information Report file name (KM010) (in STEP0, DD statement DAKM010)
  - Parameter Master List Report file name (PM010) (in STEP0, DD statement DAPM010)
  - Name and placement of the CONTROL-M Calendar library (in STEP0, DD statement CALENDAR)
  - Name and placement of the CONTROL-M Documentation library (in STEP0, DD statement DADOC)
  - Name and placement of the Job Scheduling Definition file (in STEP0, DD statement DAOUTLST)
  - Name and placement of the CONTROL-M AutoEdit library (in STEP0, DD statement PARM)
  - Name and placement of the System Qualifiers file, a table containing a system-prefix for each job (in STEP0, DD statement DASYSTEM)
  - Name and placement of the DADAILY file (in STEP0, DD statement DADAILY)
  - Name and placement of the DAPRDCL file, an internal file containing parameters used by utility CTMBCL to create calendars (in STEP0, DD statement DAPRDCL)
  - Name and placement of the Message file (in STEP0, DD statement DAMSG)
2. Submit the job for execution.
  3. Check the SYSOUT for completion code and error messages. If problems or errors are encountered, correct them manually in A-AUTO, or directly on the appropriate report, and rerun this job. A condition code of 12 or above causes the job to terminate.

## Step 5 - Tailor and Run the JOB2 Member

Before performing this step, be sure to check and modify the System Qualifiers file CTM.AUTO.SYSTEM created in Step 4.

1. Tailor the following specifications in member JOB2 in the conversion source library in accordance with your local conventions:
  - Job statement
  - Conversion load library name (in STEP0, DD statement CTMLOAD)
  - Name of the System Qualifiers file (in STEP0, DD statement DASYSTEM; created by JOB1)
  - Name and placement of a file to contain system-prefix AutoEdit variables (in STEP0, DD statement SYSNAMES)
  - Name and placement of a file to contain the CONTROL-M JCL library dataset name AutoEdit variables (in STEP0, DD statement LIBNAMES)
  - Name and placement of the Job Scheduling Definition file (in STEP0, DD statement DAOUTLST)
  - Name of the Message file (in STEP0, DD statement DAMSG)
  - A-AUTO JCL Secondary library file name (in STEP0, DD statement ATOJCL00)
  - A-AUTO JCL Primary library file name (in STEP0, DD statement ATOJCL01)
  - Any additional A-AUTO primary libraries (in STEP0, DD statements ATOJCL $nn$ , where  $nn=02, 03, \dots, 99$ )
  - Name and placement of the CONTROL-M JCL Secondary library (in STEP0, DD statement CTMJCL00)
  - Name and placement of the CONTROL-M JCL Primary library (in STEP0, DD statement CTMJCL01)
  - Any additional CONTROL-M primary libraries (in STEP0, DD statements CTMJCL $nn$ , where  $nn=02, 03, \dots, 99$ ) corresponding to the additional A-AUTO libraries
  - The JCL library from which the program is to begin the conversion process (in STEP2, the PARM parameter of the EXEC statement)
2. Submit the job for execution.

3. Check the SYSOUT for completion code and error messages. If problems or errors are encountered, correct them manually in A-AUTO JCL libraries and rerun this job. A condition code of 12 or above causes the job to terminate.

## Step 6 - Tailor and Run the JOB3 Member

Before performing this step, be sure to check and modify files CTM.AUTO.OUTLST and CTM.AUTO.OUTLSTJC created in Step 5.

1. Tailor the following specifications in member JOB3 in the conversion source library in accordance with your local conventions:
  - Job statement
  - The IOA LOAD library name (in STEP0, DD statement IOALOAD)
  - Conversion load library name (in STEP0, DD statement CTMLOAD)
  - IOA PARM library name (in STEP0, DD statement IOAPARM)
  - IOA IOAENV library name (in STEP0, DD statement IOAENV)
  - IOA LOG file (in STEP0, DD statement IOALOG)
  - Name of the Job Scheduling Definition file created in JOB1 (in STEP0, DD statement DAOUTLST)
  - Name of the Job Scheduling Definition file created in JOB2 (in STEP0, DD statement DAOUTLJC)
  - Name and placement of the Scheduling Table Definition file (in STEP0, DD statement DAINPRM)
  - Name and placement of the CONTROL-M Scheduling Table library (in STEP0, DD statement DASCHD)
  - Name of the Message file (in STEP0, DD statement DAMSG)
2. Submit the job for execution.
3. Check the SYSOUT file for completion code and error messages. If errors are encountered, correct them and rerun this job. A condition code of 12 or above causes the job to terminate.

## Step 7 - Perform Final Adjustments

1. Add new scheduling tables to the New Day procedure

Use the list of scheduling tables created by JOB1, which correspond to networks with EXEC-ID not equal to 0, on DD statement DADAILY to specify the new scheduling tables in DD statement DAJOB of the CONTROL-M New Day procedure.

2. Add new JCL libraries to DD Statement DALIB

During conversion, scheduling tables are created with parameter MEMLIB set to GENERAL, which indicates that the name of the JCL library is located in DD statement DALIB. Therefore, the names of all CONTROL-M JCL libraries created during conversion must be added to DD statement DALIB of the CONTROL-M procedure.

3. Copy members to CONTROL-M libraries

Update the SYSNAMES and LIBNAMES files created in Step 5, then create corresponding members SYSNAMES and LIBNAMES in the library specified in DD statement DAGLOBAL, which is defined in the CONTROL-M Monitor procedure.

Copy member LASTDAYM from the conversion source library into the library specified in DAGLOBAL DD statement of the CONTROL-M procedure.

Copy member \$DELETE from the conversion source library to the CONTROL-M AutoEdit library that was created in Step 4.

## Step 8 - Check the Conversion Results

1. Enter the CONTROL-M Table List screen (using Screen 2) and order one of the scheduling tables that was just created.

You can also use the GRAPHIC JOB FLOW option (Screen 2.G) to view the job flow of any A-AUTO network as it appears in CONTROL-M, and the PLAN option (Screen 2.P) to view the calendar schedule for any given job or group.

---

**NOTE**

If you experience error message IOAE33E (Insufficient Storage) when trying to view a job scheduling table online, simply split the job scheduling table into multiple tables.

---

2. Execute CONTROL-M utilities CTMRFLW, CTMRPLN, CTMROGR, CTMXRF, and so on, and compare the reports of the conversion results with the A-AUTO network structure.





## Conversion Details

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---

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# Overview

The conversion tool converts A-AUTO parameter definitions (corresponding to fields in A-AUTO screens and reports) into CONTROL-M job scheduling definition parameters (corresponding to the fields of the CONTROL-M Job Scheduling Definition screen). This chapter describes the conversion of relevant A-AUTO parameter definitions to corresponding CONTROL-M parameters.

In addition, this chapter also describes unique CONTROL-M parameters that can be specified for the conversion.

## Parameter Conversion

The following conversion table lists A-AUTO parameters that are converted to CONTROL-M parameters.

---

**NOTE**

In the following tables, Item number (Item No.) refers to the topic number in this chapter.

---

**Table 5 A-AUTO Network Master Screen or Report**

A-AUTO Parameter	CONTROL-M Job Scheduling Definition Parameter	Item No.
NETWORK NAME	TABLE NAME, GROUP	1
NETWORK EXPANDED NAME	DESC	2
SPECIFICATIONS	DOCMEM	3
INPUT-ATTR	IN condition (manual)	4
MONITOR ON	IN condition (manual)	5
HOLD-ATTR	IN condition (manual)	6
PARA-OPE-ATTR	IN condition	7
PRIORITY	PRIORITY	8
START TIME	TIME FROM	9
SYSTEM-QUALIFIER	AUTOEDIT variable	10
PRECEDING NETWORKS	IN condition	11

**Table 6 A-AUTO Job Information Screen or Report**

<b>A-AUTO Parameter</b>	<b>CONTROL-M Job Scheduling Definition Parameter</b>	<b>Item No.</b>
JNO	IN or OUT condition	12
JOBNAME	MEMNAME	13
D-ID	MEMLIB=DUMMY	14
PRECEDING JOB NOS	IN condition	15
RERUN	ON PGMSTEP	16
MAX-CD	ON PGMSTEP	17

**Table 7 A-AUTO Schedule Master Screen or Report**

<b>A-AUTO Parameter</b>	<b>CONTROL-M Job Scheduling Definition Parameter</b>	<b>Item No.</b>
HOLIDAY-ID	DCAL (CONFICAL)	18
SHIFT-PATTERN	SHIFT	19
EXECUTION PERIOD	MONTHS	20
EXEC-ID	Daily list	40
REFERENCE CODE	CALENDAR	21
DUPLICATE-KEY	Schedule Tag	31
LIMIT-DAY	Scheduling criteria	32
PROCESS PATTERN	Scheduling criteria	22
PROCESS CYCLE	Scheduling criteria	23
STANDARD PROCESSING DATE (SCHEDULE DATES)	Scheduling criteria	24

**Table 8 A-AUTO Data Wait Master Screen or Report**

<b>A-AUTO Parameter</b>	<b>CONTROL-M Job Scheduling Definition Parameter</b>	<b>Item No.</b>
DATA-ID	IN condition (manual)	25

**Table 9 A-AUTO JCL Control Statements Screen or Report (part 1 of 2)**

<b>A-AUTO Parameter</b>	<b>CONTROL-M Job Scheduling Definition Parameter</b>	<b>Item No.</b>
AUTOPARM	AUTO-EDIT	26
AUTORES	CONTROL / RESOURCE	27
AUTODEQ	ADD CONDITION	28

**Table 9 A-AUTO JCL Control Statements Screen or Report (part 2 of 2)**

A-AUTO Parameter	CONTROL-M Job Scheduling Definition Parameter	Item No.
NET, FROM, TO	JCL concatenation	29
AUTO-DELETE	IEHPROGM <i>step</i>	30

**Table 10 A-AUTO Parameter Master Screen or Report**

A-AUTO Parameter	CONTROL-M Job Scheduling Definition Parameter	Item No.
DATA	AutoEdit member	33
DATE-GENERATION	AutoEdit date variables	34
BASE-DAY	%%xDATE	35
BASE-PATTERN	%%CALCDATE	36
SHIFT-PATTERN/HOLIDAY-ID		37
CARD-NUMBER/DATA-LENGTH/DATA-POSITION		38

## 1. NETWORK NAME

In A-AUTO, the unit used for controlling execution of jobs by the monitor is the network. The network consists of one or more jobs.

In CONTROL-M, conversion jobs are grouped by defining all related jobs in a single CONTROL-M group scheduling table (member). The conversion tool assigns the A-AUTO NETWORK NAME to the new CONTROL-M group scheduling table name and assigns this name to the CONTROL-M GROUP parameter.

The Group entity of the scheduling definition is used to control the processing of the entire table by specifying IN and OUT conditions and various scheduling criteria.

- If the A-AUTO NETWORK has predecessors, appropriate IN conditions are added to the Group entity definition to ensure that processing of the jobs in the table does not begin until the tables corresponding to predecessor networks have been processed.
- The Group entity adds a prerequisite condition to identify the end of the group scheduling table. The format of the condition is:

```
tablename-OK
```

where *tablename* is the name of the CONTROL-M scheduling table. This condition enables the processing of dependent tables to begin.

## 2. NETWORK EXPANDED NAME

The A-AUTO network definition parameter NETWORK EXPANDED NAME can contain a 20-character description of the network.

The conversion tool uses the A-AUTO NETWORK EXPANDED NAME as the CONTROL-M job scheduling definition DESC parameter. Double-byte character set (DBCS) is supported in this field.

## 3. SPECIFICATIONS

The A-AUTO network definition parameter SPECIFICATIONS is a 50-character comment describing the network.

The conversion tool places the A-AUTO SPECIFICATIONS parameter value, when non-blank, into the CONTROL-M documentation library, in the member specified in the CONTROL-M DOCMEM parameter, which is the A-AUTO jobname.

## 4. INPUT-ATTR

The A-AUTO network definition parameter INPUT-ATTR specifies whether the network waits for the DATA-ID specified in the Dataset Flag Status report.

The conversion tool adds a manual IN condition to the CONTROL-M Start Job scheduling definition to prevent the automatic submission of the jobs in this scheduling table. The format of the condition is:

---

*tablename-dataid*

---

where:

- *tablename* is the name of the CONTROL-M scheduling table
- *dataid* is the DATA-ID specified in the Dataset Flag Status report.

## 5. MONITOR ON

The A-AUTO network definition parameter MONITOR ON specifies whether dependent networks automatically start executing when this network finishes normal execution, or whether those networks wait for a manual action from the operator before starting.

If the value in the MONITOR ON parameter is NO, the conversion tool adds a manual IN condition to the CONTROL-M Start Job scheduling definitions of tables converted from dependent networks, to prevent their automatic submission. The format of the condition is:

---

*tablename-dataid*

---

where:

- *tablename* is the name of the CONTROL-M scheduling table
- *dataid* is the DATA-ID specified in the Dataset Flag Status report of the current network.

The MONITOR ON parameter is ignored if the value NO is specified in the INPUT-ATTR field of the A-AUTO Network Master screen.

## 6. HOLD-ATTR

The A-AUTO network definition parameter HOLD-ATTR specifies whether the network enters the execution queue in Hold status.

If the value YES is specified in the HOLD-ATTR parameter, the conversion tool adds a manual IN condition to the CONTROL-M Start Job scheduling definition to indicate that the jobs in the scheduling table must be held. The format of the condition is:

---

HOLD-*tablename*

---

where *tablename* is the name of the CONTROL-M scheduling table.

## 7. PARA-OPE-ATTR

In A-AUTO, the execution sequence of jobs within the network is determined according to:

- the network definition parameter PARA-OPE-ATTR, which specifies whether the jobs within the network run in parallel, or whether they are executed in sequential order
- the order in which the jobs are defined in the network job list

In CONTROL-M, job sequence is specified using prerequisite conditions. Each job that finishes OK (according to its specification in the CONTROL-M job scheduling definition) adds a prerequisite condition to the IOA Conditions file. These prerequisite conditions serve as IN conditions for subsequent jobs in the sequence.

The conversion tool sets the condition name as:

---

*tablename-jobnumber-OK*

---

where:

- *tablename* is the name of the CONTROL-M scheduling table,
- *jobnumber* is the A-AUTO JNO parameter value.

The conversion tool uses the A-AUTO parameter PARA-OPE-ATTR to determine the execution sequence of the jobs in the current network.

## 8. PRIORITY

The A-AUTO network definition parameter PRIORITY can specify network execution priority. Network priority can be any value from 01 through 15, where 01 is the lowest priority and 15 is the highest priority.

The CONTROL-M job scheduling definition parameter PRIORITY specifies job scheduling priority as two alphanumeric characters.

The conversion tool assigns the value of the A-AUTO PRIORITY parameter to the PRIORITY parameter of the CONTROL-M Start Job scheduling definition.

## 9. START TIME

The A-AUTO network definition parameter START TIME specifies the start time for the network.



The CONTROL-M job scheduling definition parameter TIME FROM specifies the lower time limit for job submission. The conversion tool converts this parameter by assigning the value of the A-AUTO START TIME parameter to the TIME FROM parameter in the CONTROL-M Start Job scheduling definition.

## 10. SYSTEM-QUALIFIER

The A-AUTO network definition parameter SYSTEM-QUALIFIER specifies the CPU ID of the CPU designated to execute the network. If ANY is specified, the network runs on any CPU.

In CONTROL-M, CPU ID designation is performed by the AutoEdit facility. For more information on the AutoEdit facility, see the *CONTROL-M for z/OS User Guide*. In every job, the conversion tool adds a %%GLOBAL SYSNAMES statement, and inserts one of the following JES control statements before the first step, to indicate on which CPU ID the job is to run:

---

```
/*JOBPARM      S=%%xxxx      (for JES2)
```

---

or

---

```
//*MAIN SYSTEM=%%xxxx      (for JES3)
```

---

The system prefix is placed on the JES control statement of the job as an AutoEdit symbol (%%xxxx), which at execution time is resolved into a CPU ID from global member SYSNAMES.

## 11. PRECEDING NETWORKS

In A-AUTO, dependency on the ending of previous networks can be specified in the PRECEDING NETWORKS parameter. The names of up to six networks to be executed prior to the current network can be specified in the PRECEDING NETWORKS parameter.

In CONTROL-M, network dependencies are specified using prerequisite conditions.

The conversion tool adds an IN condition to the job scheduling definition of the CONTROL-M scheduling table Start Job, to indicate that the scheduling table must wait for the successful end of the preceding scheduling table (network).

The conversion tool sets the condition name as:

---

*tablename-OK*

---

where *tablename* is the name of the preceding CONTROL-M scheduling table.

## 12. JNO

The A-AUTO job definition JNO parameter is a 3-digit job number used either for ordering the job while in sequential operation, or to specify dependencies between jobs within the network.

The conversion tool uses the A-AUTO JNO to convert its job connections into CONTROL-M IN/OUT prerequisite conditions. For more information, see [“7. PARA-OPE-ATTR”](#).

## 13. JOBNAME

In A-AUTO, the job name, which is specified in the JOBNAME parameter of the Job Information screen, corresponds to the JCL member name.

In CONTROL-M, the JCL member name is specified in the job scheduling definition parameter MEMNAME, and the job name is determined at time of submission.

The conversion tool specifies the A-AUTO JOBNAME as the CONTROL-M MEMNAME parameter.

## 14. D-ID

The A-AUTO job definition parameter D-ID indicates whether the job is a dummy job.

If the value D is specified in the A-AUTO D-ID parameter, the conversion tool sets the MEMLIB parameter of the CONTROL-M job scheduling definition to DUMMY, which means that the job is a dummy job.

## 15. PRECEDING JOB NOS

In the PRECEDING JOB NOS parameter of the A-AUTO job definition, you can specify up to six job numbers to be executed prior to the current job.

In CONTROL-M, job dependencies are specified using prerequisite conditions.

To prevent the automatic submission of this job, the conversion tool adds one IN condition to the CONTROL-M job scheduling definition for each A-AUTO preceding job number. The format of the condition is:

---

```
tablename-jobno-OK
```

---

where:

- *tablename* is the name of the CONTROL-M scheduling table
- *jobno* is the number of the preceding job (specified in the A-AUTO PRECEDING JOB NOS parameter)

## 16. RERUN

The A-AUTO job definition parameter RERUN specifies what to do when a rerun action is required.

- If a network name is specified, the network is ordered for recovery and the remaining jobs from the original network are ignored.
- If a job name is specified, the recovery job is ordered. If the recovery job ends successfully, the remaining jobs from the original network are executed.

The CONTROL-M job scheduling definition enables the user to specify on which condition codes the DO actions are performed.

The conversion tool converts the A-AUTO RERUN specification to CONTROL-M job scheduling definition specifications that reflect the same rerun options that are performed by A-AUTO.

- The conversion tool converts a RERUN specification containing a network name to the following CONTROL-M specification:

---

```
ONPGM ANYSTEP CODES NOTOK
DO FORCEJOB
FORCE-TAB netname
FORCE-DATE ODAT
FORCE-LIB libname
```

---

where:

- *netname* is the name of the A-AUTO RERUN network
- *libname* is the default scheduling table library name, that is, the default value for parameter &SCDLIB, which is described in “&SCDLIB” on page 72.

- The conversion tool converts a specification with a job name to the following CONTROL-M specification:

---

```
ONPGM ANYSTEP CODES NOTOK
  DO SET VAR='%%jobname=RERUN'
ONPGM ANYSTEP CODES EXERR
  DO RERUN
MAXRERUN maxrerun
```

---

where:

- *jobname* is the current job name
- *maxrerun* is set as described under conversion parameter &MAXRRUN, which is described in “&MAXRRUN” on page 72.

and the JCL member of this job is changed so that when AutoEdit variable %%*jobname* is equal to RERUN, it submits the rerun job.

## 17. MAX CD

The A-AUTO job definition parameter MAX-CD specifies the maximum return code that can be returned with a successful execution.

The CONTROL-M job scheduling definition enables the user to check condition codes at the step level as well as job level. The CONTROL-M default is that a job is considered as having ended OK if no step has a condition code higher than 4.

The conversion tool converts the MAX-CD value to the following CONTROL-M specification:

---

```
ONPGM ANYSTEP CODES <Cmax-cd>
  DO OK
```

---

Depending on the default specified in member DEFAULTS, the conversion tool may add a SHOUT statement to the CONTROL-M job scheduling definition, to send a message if the job ends NOTOK.

## 18. HOLIDAY-ID

The A-AUTO schedule definition can contain a base calendar used to verify (resolve) the requested schedule days against the working days in the calendar. When a specific day is not a working day (for example, holiday, weekend), the schedule is determined based on the SHIFT-PATTERN parameter, which is described in the following item.

The CONTROL-M job scheduling definition has three optional calendar parameters:

- The DCAL and the WCAL calendar parameters are used to specify a calendar to be used in conjunction with the DAYS and WDAY parameter specifications.
- The CONFCAL calendar parameter is used to specify a calendar that is used to verify other basic scheduling criteria.

The conversion tool uses the A-AUTO HOLIDAY-ID as the CONTROL-M CONFCAL value.

## 19. SHIFT-PATTERN

The A-AUTO schedule definition SHIFT-PATTERN parameter indicates the action A-AUTO must take when verifying (resolving) the schedule parameters against the A-AUTO HOLIDAY-ID.

The CONTROL-M job scheduling definition parameter SHIFT is similar to the A-AUTO SHIFT-PATTERN parameter.

A-AUTO SHIFT-PATTERN action values are converted to CONTROL-M as follows:

1. SHIFT-PATTERN=0 indicates that no action is performed and the requested schedule day must be skipped. The conversion tool converts SHIFT-PATTERN=0 by leaving the CONTROL-M SHIFT parameter blank.
2. SHIFT-PATTERN=1 indicates that the requested schedule day must be shifted backward to the previous calendar working day. The conversion tool converts SHIFT-PATTERN=1 by specifying the < symbol in the SHIFT parameter in the CONTROL-M job scheduling definition.
3. SHIFT-PATTERN=2 indicates that the requested schedule day must be shifted forward to the next calendar working day. The conversion tool converts SHIFT-PATTERN=2 by specifying the > symbol in the SHIFT parameter in the CONTROL-M job scheduling definition.

4. SHIFT-PATTERN=9 indicates that the requested schedule day must be kept regardless of the calendar definition. The conversion tool converts SHIFT-PATTERN=9 by leaving the CONFCAL and SHIFT parameters blank in the CONTROL-M job scheduling definition.

## 20. EXECUTION PERIOD

The A-AUTO schedule definition parameter EXECUTION PERIOD specifies the period during which the network must be evaluated for possible scheduling. The meaning of the value specified in this parameter varies according to the PROCESS CYCLE, which is described in [“23. PROCESS CYCLE” on page 55](#):

1. If PROCESS CYCLE=A, the execution period is specified in days. The conversion tool converts the execution period to a DAYS=-*n* specification in the CONTROL-M job scheduling definition, where -*n* represents all days that are not included in the specified period.
2. If PROCESS CYCLE has a value other than A, the period is specified in months (01 through 12, representing January through December). The conversion tool converts the parameter by specifying the corresponding month values in the MONTHS parameter in the CONTROL-M job scheduling definition.

## 21. REFERENCE CODE

In A-AUTO, it is possible to define “end of month” differently for different situations requiring special treatment. This is achieved through the A-AUTO schedule definition parameter REFERENCE CODE, which establishes a period containing any number of days as a “month”. The REFERENCE CODE parameter can contain either a day specification or a table name. If a day is specified, that day is the last day for all “month” periods. If a table name is specified, the last day of each “month” is specified within a table that is defined in the Reference Master Maintenance Information List. These A-AUTO REFERENCE CODE tables correspond to periodic calendars in the CONTROL-M Calendar facility.

An example of such a reference table follows:

	01	02	03	04	05	06	07	08	09	10	11	12
A1	11	10	**	**	**	**	**	**	**	**	**	25

\*\* indicates that the month has not been set up

Networks that specify the A1 reference code utilize the following corresponding CONTROL-M periodic calendar:

Jan	26/12	-	11/01
Feb	12/01	-	10/02
Mar	11/02	-	31/03

---

— **NOTE** —

---

A blank reference code table entry indicates the end of the normal month.

---

The advantages of periodic calendars are:

1. The year can be divided into any number of working periods.
2. CONTROL-M periods do not have to be consecutive, and they can overlap.
3. A periodic calendar can span more than one year.

The conversion tool creates a periodic calendar for each REFERENCE CODE that is in use in the site. Calendar names are in the format TABLE $xx$ , where  $xx$  is either the day or the reference table code.

## 22. PROCESS PATTERN

The A-AUTO schedule definition parameter PROCESS PATTERN specifies the process cycle type:

- W - the process cycle is based on the calendar and REFERENCE CODE, which is discussed in Item 21, working days only
- H - the process cycle is based on the calendar; SHIFT-PATTERN, which is discussed in Item 19, is considered

The conversion tool converts this field by specifying the A-AUTO HOLIDAY-ID value in the CONTROL-M DCAL parameter, and DAYS=Dn (for W option) or DAYS=n (for H option).

## 23. PROCESS CYCLE

The A-AUTO schedule definition parameter PROCESS CYCLE specifies the intervals between job scheduling, for example, every day, or every week.

This value is converted by the conversion tool in conjunction with the STANDARD PROCESSING DATE and the LIMIT-DAY, described in “32. LIMIT-DAY”.

The values and meaning of the PROCESS CYCLE and how they are converted are outlined in the following table:

**Table 11 PROCESS CYCLE Values**

A-AUTO	CONTROL-M	Notes
A - Daily	DAYS=- <i>n</i> or DAYS=ALL	a
B - Weekly		b
C - Specific Dates		b
D - Monthly	MONTHS=ALL	c
E - 6 Month Cycle	MONTHS=( <i>m</i> , <i>m</i> +6)	c
F - 1 Year Cycle	MONTHS=( <i>m</i> )	c
G - 2 Month Cycle	MONTHS=( <i>m</i> , <i>m</i> +2, <i>m</i> +4, <i>m</i> +6, <i>m</i> +8, <i>m</i> +10)	c
H - 3 Month Cycle	MONTHS=( <i>m</i> , <i>m</i> +3, <i>m</i> +6, <i>m</i> +9)	c
I - 4 Month Cycle	MONTHS=( <i>m</i> , <i>m</i> +4, <i>m</i> +8)	c

**Notes:**

- The particular form of the DAYS parameter is determined by the value in the A-AUTO LIMIT-DAY field, described in “32. LIMIT-DAY”.
- These process cycles are converted based on the A-AUTO LIMIT-DAY (Item 32), STANDARD PROCESSING DATE (Item 24) and REFERENCE CODE (Item 21) fields.
- See note b above. *m* is obtained from the month portion of the *yymm* parameter in the STANDARD PROCESSING DATE field.

## 24. STANDARD PROCESSING DATE

The A-AUTO schedule definition STANDARD PROCESSING DATE fields specify scheduling cycles. For example, PROCESS CYCLE=D, STANDARD PROCESSING DATE=(01) 0006 indicates that scheduling of the network starts on the 1st of June, 2000, and then continues at one-month intervals.

A minus sign (-) preceding the *yymm* field (0006 above), indicates that scheduling is done on the *n*th day counting from the end of the month.

The method used to convert A-AUTO scheduling specifications containing working days in a period is described in the example below:



---

```

PROCESS PATTERN = W
PROCESS CYCLE = D
REFERENCE CODE = 15
STANDARD PROCESSING DATE = (03)

```

---

The above A-AUTO schedule specification means “schedule the network every 3rd working day in a period that starts on the 16th of each month and ends on the 15th of the next month.”

The conversion tool converts the A-AUTO REFERENCE DATE = 15 and STANDARD PROCESSING DATE = (03) fields by specifying a D3P\* periodic value in the CONTROL-M DAYS parameter. Since CONTROL-M periodic calendars do not differentiate between holidays and working days, the conversion tool creates a periodic calendar from which it excludes all the days marked as holidays in the HOLIDAY-ID calendar. This results in a periodic calendar containing only working days.

In the above example, if the REFERENCE CODE field were left blank, then the conversion would have specified DAYS=D3. If, in addition, the PROCESS PATTERN had been coded as ‘H’, then the conversion would have specified DAYS=3.

---

— **NOTE** —

---

A STANDARD PROCESSING DATE of 31 is interpreted as the last day of the month, and is converted as DAYS=L1.

---

## 25. DATA-ID

The DATA-ID defines the dependency on the arrival of a dataset. It is translated to a CONTROL-M manual IN condition.

## 26. AUTOPARM

The A-AUTO // \* @ AUTOPARM JCL statement specifies the keyname of a parameter. A-AUTO resolves the keyname to the value of the parameter taken from the Parameter Master file.

In CONTROL-M, the equivalent parameter resolution is achieved using the AutoEdit %%INCLIB statement.

The conversion tool replaces the AUTOPARM statement with the following two CONTROL-M AutoEdit statements:

---

```
%%SET %%KEY = key-name
%%INCLIB &inclib %%INCMEM job-name
```

---

where:

- *&inclib* is a library name defined in the DEFAULTS member of the conversion load library, containing the AutoEdit members created by conversion job JOB1 (program CTMATOAE)
- *job-name* is the member of library *&inclib* containing corresponding AutoEdit variables for KEY *key-name*

## 27. AUTORES

The A-AUTO //\*@ AUTORES JCL statement specifies the resources used by the job, and if the resource is a Quantitative resource, the quantity used.

In CONTROL-M, resource requirements are defined in the job scheduling definition. The conversion tool converts the AUTORES parameter by adding the following parameters to the CONTROL-M job scheduling definition:

---

```
RESOURCE=(resource-name,quantity) - for Quant resources
CONTROL=(resource-name,E) - for Control resources
(E indicates Exclusive mode)
```

---

The A-AUTO subparameter CONTINUE indicates that the Control resource is held for the following job or network, to be released by an AUTODEQ command or at the end of the network execution. If CONTINUE is specified, the conversion tool adds an IN condition in the following format:

---

```
RES-resource-name ODAT
```

---

In addition, the following JCL statements are inserted as the first step of the job, so that no other job can “use” this resource in parallel to this job.

---

```
//IOACOND EXEC PGM=IOACOND
DELETE COND RES-resource-name WDATE
```

---

## 28. AUTODEQ

The A-AUTO AUTODEQ JCL statement deallocates Control resources. This statement is automatically replaced by the conversion tool with the following two JCL statements:

```
//IOACOND EXEC PGM=IOACOND
ADD COND RES-resource-name WDATE
```

These statements add a condition to the CONTROL-M Resources file, which enables the scheduling of other jobs that require that condition.

## 29. NET, FROM, TO

In A-AUTO, the monitor can support a secondary JCL library to contain temporary JCL changes. In this case, the monitor reads the secondary JCL member first, and if NET, FROM, and TO parameters are defined and their criteria are met, the monitor executes the secondary JCL. Otherwise, the primary JCL is executed. The FROM date and TO date specify when this JCL must be used, and NET=*network-names* specifies the networks for which it must be used.

The conversion tool uses the CONTROL-M AutoEdit Facility to satisfy the above requirements. It converts both the primary and the secondary A-AUTO JCL libraries.

If a member in the A-AUTO secondary library contains NET, FROM or TO parameters, the conversion tool takes the member from both the primary and secondary A-AUTO libraries, and creates a single member in the CONTROL-M JCL library. During this process the conversion tool comments out all NET statements, and adds corresponding AutoEdit statements.

## 30. AUTO-DELETE

This A-AUTO statement is used either to delete the JCL member from the secondary library if the TO date has been passed, or to delete the JCL member after its first execution, regardless of the results of the execution, if there is no TO date.

The conversion tool converts this parameter as follows:

1. The conversion tool adds AutoEdit variables that specify the dsn, volser and member-name of the member to be deleted.
2. The conversion tool adds the following AutoEdit statement to the JCL:

```
%%INCLIB &inclib %%INCMEM &delmem
```

where *&delmem* is the name of the member in which following JCL resides. It is defined in the DEFAULTS member of the conversion source library. The default value for *&delmem* is \$DELETE.

---

```
//S1      EXEC PGM=IEHPRGM
//SYSPRINT DD  SYSOUT=*
//DD1    DD  UNIT=SYSALLDA,DISP=SHR,VOL=SER=%%VOLSER
//SYSIN   DD  *
%%RANGE  1  71      (TO PRESERVE 'X' CONTINUATION)
SCRATCH  VOL=SYSALLDA=%%VOLSER,MEMBER=%%MEMBER, X
          DSNAME=%%DSN
/*
```

---

If there is no TO parameter, the AutoEdit statements are placed immediately after the JES2 /\*JOBPARM (or JES3 /\*MAIN) statement, before the first EXEC statement. Otherwise, the AutoEdit statements are placed at the end of the member. In this case, if the JCL job stream ends with a JCL null statement, a JCL JOB statement is also added, prior to the %%INCLIB statement, in the format:

---

```
//%%MEMBER JOB,CONTROL-M,CLASS=A,MSGCLASS=X,MSGLEVEL=1
```

---

---

— **NOTE** —

If the member to be deleted is in use, for example, being used in ISPF Browse or Edit mode, the member is not deleted.

---

## 31. DUPLICATE-KEY

An A-AUTO scheduled network can be defined with several types of scheduling information. Multiple sets of scheduling criteria for each network are defined in A-AUTO by specifying a DUPLICATE-KEY.

The conversion supports DUPLICATE-KEYs by creating multiple schedule tags in the group entity of the scheduling table. For more information, see [“Scheduling” on page 20](#).

## 32. LIMIT-DAY

An A-AUTO scheduled network is evaluated for scheduling only during the period specified in the LIMIT-DAY field. If the A-AUTO SHIFT-PATTERN causes the day to be outside the LIMIT-DAY range the network is not scheduled. For more information on the A-AUTO SHIFT-PATTERN, see [“19. SHIFT-PATTERN” on page 53](#). A LIMIT-DAY value of 31 means the last day of the month (even if the month does not contain 31 days). Depending on the PROCESS CYCLE, which is described in [“23. PROCESS CYCLE” on page 55](#), the values specified in LIMIT-DAY have different meanings, as follows:

- A - the LIMIT-DAYS are treated as days
- B, C, D, G, H, I - the LIMIT-DAYS are treated as months
- E, F - the LIMIT-DAYS are ignored

When the LIMIT-DAYS refer to days, the conversion tool converts the days outside the range into excluded days by specifying DAYS *-n*. If every day of the month is in the range, DAYS ALL is specified.

When the LIMIT-DAYS refer to months, then the conversion turns on, that is, sets to Y, only the months in the range in the basic scheduling criteria.

## 33. DATA

The A-AUTO DATA field in the Parameter Master Listing identifies the data that must be inserted into the JCL member specified by the jobname parameter, wherever the `//*@` AUTOPARM statement appears in the JCL. For more information, see

- [“JOB1 Convert Information From A-AUTO Reports” on page 24](#)
- [“26. AUTOPARM” on page 57](#)
- the following items, Items 34 through 38.

## 34. DATE-GENERATION

When the A-AUTO DATE-GENERATION field = YES, the data field contains an embedded date. The date is converted to an appropriate CONTROL-M AutoEdit date according to the A-AUTO BASE-DAY field described below.

## 35. BASE-DAY

The A-AUTO BASE-DAY field is converted to CONTROL-M AutoEdit date variables as follows:

CPU	%%DATE
SCH	%%RDATE
AUT	%%RDATE
STA	%%ODATE

When a date field of the format YYMMDD is found in the DATA field an additional AutoEdit JCL comment statement is placed into the member prior to the appearance of the date. Its format is:

```
%%SET %%A = %%CALCDATE %%xDATE +/-nnnnnn
```

where:

- %%A is a user variable that replaces the YYMMDD in the data statement
- %%xDATE is %%DATE, %%ODATE or %%RDATE depending on BASE-DAY
- +/-nnnnnn is calculated from the BASE-PATTERN as described in the next item

The date in the data line is replaced by %%A%%. to preserve data positioning in the proper column and prevent insertion of extraneous blanks.

If the date format is YYDDD (Julian), the following %%SET statement is used:

```
%%SET %%A = %%xYEAR.%%xDAY
```

where:

- %%xYEAR is %%YEAR, %%OYEAR or %%RYEAR, depending on BASE-DAY
- %%xDAY is %%DAY, %%ODAY or %%RDAY, depending on BASE-DAY

The date in the data line is replaced by %%A%%. after all the data in the segment following the date, and all following segments, are shifted over one byte. This preserves the correct data positioning after the date is resolved.

## 36. BASE-PATTERN

The A-AUTO BASE-PATTERN field = +YYY+MMM+DDD is used to calculate an offset in the BASE-DAY calculation above, as follows:

---

```
+/-)YYY*365 (+/-)MMM*30 (+/-)DDD = +/- nnnnnn.
```

---

For Julian dates, the BASE-PATTERN must be all 0 (no calculations are allowed).

When the DDD field of the BASE-PATTERN = \*\*\* the date is resolved (after the YYY and MMM are calculated) to the last day of the month. This is done by inserting the following AutoEdit statements following the %%CALCDATE statement:

---

```
%%GLOBAL LASTDAYM
%%SET %%B = %%SUBSTR %%A 1 4
%%SET %%A = %%B.%%LAST_DAY_OF_MONTH_%%xMONTH
```

---

where %%xMONTH is either %%MONTH, %%OMONTH, or %%RMONTH.

BASE-PATTERN = \*\*\* is supported only for dates in the format YYMMDD. Non-numeric BASE-PATTERNS (except \*\*\*) are not supported.

Member LASTDAYM in the conversion source library contains a list of 12 predefined variables that specify the last date of each month, for example, %%LAST\_DAY\_OF\_MONTH\_01 = 31. This member must be copied to the DAGLOBAL DD of the CONTROL-M procedure, set out in [“Step 7 - Perform Final Adjustments”](#) on page 38.

## 37. HOLIDAY-ID and SHIFT-PATTERN

Non-blank HOLIDAY-ID and SHIFT-PATTERN fields in the Parameter Master Listing are not supported.

## 38. CARD-NUMBER, DATA-POSITION and DATA-LENGTH

In the Parameter Master Listing, when there are multiple DATA segments for each key, they are concatenated together to form one statement. The length of each data segment is derived from the DATA-LENGTH field, and the position of each data segment is derived from the DATA-POSITION field. The CARD-NUMBER field indicates to which DATA line, for the given key, the DATA segment belongs.

## 39. EXEC-ID

When the A-AUTO EXEC-ID is set to 0, the conversion tool does not include the network name on the Daily list created in JOB1, that is, the network is not to be automatically scheduled by the CONTROL-M New Day procedure.

## Unique CONTROL-M Parameters

Several unique CONTROL-M job scheduling definition parameters that do not have corresponding A-AUTO capabilities can be set by the conversion tool during creation of the CONTROL-M scheduling tables.

The DEFAULTS parameters member in the conversion source library contains the default settings for these parameters, and must be reviewed and modified to specify your local CONTROL-M preferences. For additional information regarding these parameters, see [Appendix A, “Downloading and installing the CONTROL-M conversion tools,”](#) and the *CONTROL-M for z/OS User Guide*.

## DO SYSOUT

This CONTROL-M parameter specifies how the job is handled.

At job completion, CONTROL-M analyzes the job output. To enable CONTROL-M to locate this output on the system spool, CONTROL-M modifies the JCL MSGCLASS parameter of the job at time of submission to the automatically held output class. After analyzing the sysout, CONTROL-M can be ordered to re-queue the sysout. For information regarding DO SYSOUT options, see the *CONTROL-M for z/OS User Guide*.

The conversion tool can be instructed to specify various actions using the CONTROL-M DO SYSOUT facility.

The &TOCLASS conversion parameter specifies the output class to which CONTROL-M re-queues the job output. For more information on this parameter, see [“&TOCLASS” on page 72](#).

The &RELEASE conversion parameter controls whether CONTROL-M releases the job output for printing on the system spool. The default is Y (Yes). For more information on this parameter, see [“&RELEASE” on page 72](#).

The &FROMC conversion parameter instructs CONTROL M which part of the held sysout must be rerouted to another class. For more information on this parameter, see [“&FROMC” on page 71](#).



## MAXWAIT

This CONTROL-M parameter specifies the number of extra days a job must wait in the Active Jobs file to be executed. If the job is not executed within that time, it is discarded. This two-digit parameter accepts values from 00 through 98, or 99.

This parameter value is specified in conversion parameter &MAXWAIT, which is described in “&MAXWAIT” on page 72. Default: 03.

## OWNER

This CONTROL-M parameter specifies the default owner name. This parameter is mainly used by the CONTROL-M internal security mechanism to determine those operations that each user is authorized to perform. The OWNER parameter can be from 1 through 8 characters.

This parameter value is specified in the &USERID conversion parameter. For more information on this parameter, see “&USERID” on page 73.

## SHOUT

Specifies messages to be sent (“shouted”) to different destinations when a job ends NOT OK (meaning, the job fails).

The &SHOUT conversion parameter specifies the SHOUT message text for failed jobs. Default is

---

```
%%JOBNAME J%%JOBID ENDED NOTOK!
```

---

where %%JOBNAME is an AutoEdit variable that is replaced with the failed job name.

A variety of addresses can be specified as CONTROL-M SHOUT message destinations. For more information, see the *CONTROL-M for z/OS User Guide*.

The &SHOUTD conversion parameter specifies the destination for SHOUT messages. For more information on this parameter, see “&SHOUTD” on page 72.



# Downloading and installing the CONTROL-M conversion tools

---

**NOTE**

---

Ensure that CONTROL-M for z/OS is installed before proceeding with this installation.

---

## 1 Prepare your system.

Do one of the following actions:

- Download the CONTROL-M Conversion tools from the EPD site at <https://webapps.bmc.com/signon/content/logon.jsp>.
- Copy the file from the product CD.

Transfer the image file to the mainframe as a binary file. For more information about the space requirements, see the Release Notes that accompany the CONTROL-M Conversion tools. The DCB information for the image file is as follows:

```
RECFM = FB, LRECL=1024,BLKSIZE=6144
```

## 2 Uncompress the image file.

The image file is compressed using the IBM TRSMAIN program. If you do not have TRSMAIN on your mainframe, instructions for downloading and installing it can be found at the following URL:

<http://techsupport.services.ibm.com/390/trsmain.html>

Once the image file has been uploaded to your mainframe, make the necessary changes in the following UNTERSE job to uncompress the image file.

---

*ppp,ss,dd* represents the space requirements for the UNTERSE file. For more information, refer to the Release Notes that accompany the CONTROL-M Conversion tools.

```
***** Top of Data *****
//UNTERSE JOB          <=== tailor job card to local standards
//*
//UNTERSES EXEC PGM=TRSMAN,PARM=UNPACK
//SYSPRINT DD  SYSOUT=*
//INFILE  DD  DISP=SHR,DSN=uploaded.image.file.from.step1  <===UPDATE
//OUTFILE DD  DISP=(NEW,CATLG,DELETE),
//          UNIT=disk_unit,VOL=SER=disk_volser,              <===UPDATE
//          DSN=basepref.CONVLIB,                            <===UPDATE
//          SPACE=(CYL,(ppp,ss,dd))                          <===UPDATE
***** Bottom of Data *****
```

In the preceding UNTERSE job, *basepref* represents your choice of prefix for the base libraries, which are described in the Installation and Customization Engine (ICE) chapter in the *INCONTROL for z/OS Installation Guide*. This parameter must be specified again later in the installation process.

Submit the above job and review the output of the job. Ensure that the return code is 0.

### 3 Install the Conversion tools.

To install the Conversion tools, do the following:

- Select Customization from the ICE main menu.
- Specify product CTM.
- Select step 8 (Conversion installation).
- Select minor step 1 (Conversion installation).
- Submit the job.

This job consists of 5 steps:

#### A ADDDEF

This step adds SMP/E DDDEFs for the conversion target and distribution libraries.

#### B ALLOCT

This step allocates the conversion libraries.

- The target conversion library name is *ilprefa.CONV*.
- The distribution conversion library name is *spdpref.ACONV*.

---

### C RCVAPLC

This step performs the RECEIVE and APPLY CHECK operations for the conversion FMID and PTFs. The FMID and PTFs are located in the CONVINST member in the *basepref.CONVLIB* library.

### D APLACC

This step performs the APPLY and ACCEPT CHECK operations for the conversion FMID and PTFs.

### E ACCEPT

This step performs the ACCEPT operation for the conversion FMID and PTFs.

## 4 Find any relevant updates.

Look for Solution SLN000000197255 (List of APARs required for conversion to CONTROL-M) in the Knowledge Base on the BMC Customer Support Site for the latest fixes and instructions.



# Conversion Parameters

The DEFAULTS member contains general conversion parameters that must be modified according to your site requirements. Valid parameters:

**Table 12** DEFAULTS Parameters (part 1 of 3)

Parameter	Description
&CTR	CONTROL-M/Restart parameter. Valid values are: <ul style="list-style-type: none"> <li>■ Y - CONTROL-M/Restart is implemented with CONTROL-M. When specified, the PREVENT-NCT2 parameter is set to Y and a DO IFRERUN statement, beginning with the step in error, is inserted into the job scheduling definition. Default.</li> <li>■ N - CONTROL-M/Restart is not implemented with CONTROL-M. The conversion tool does not set any CONTROL-M/Restart statements.</li> </ul>
&DELMEM	Name of the JCL member used to replace the A-AUTO AUTO-DELETE facility. Default: \$DELETE
&DIRMAX	Maximum number of members contained in an A-AUTO JCL library. Default: 10000
&FROMC	Class from which held sysouts must be re-queued. Specify '' (blank) if all held sysouts must be requeued. Default: blank
&INCLIB	Library name of the CONTROL-M AutoEdit library containing the AutoEdit members created in JOB1.  Default: CTM.AUTO.PARM
&JES	JES version. Valid values are: <ul style="list-style-type: none"> <li>■ 2 - JES2 (Default)</li> <li>■ 3 - JES3</li> <li>■ F - Fujitsu</li> </ul>
&LINMAX	Maximum lines in a JCL member. Default: 5000

**Table 12 DEFAULTS Parameters (part 2 of 3)**

Parameter	Description
&MAXNET	Maximum number of networks in the Network Registration list. Default: 8000
&MAXRRUN	Maximum number of reruns to be performed for the job when rerun is required. Default: 002
&MAXWAIT	Number of extra days a job must wait in the Active Jobs file to be executed, after which the job is deleted. Default: 03
&REL	A-AUTO release number, specified as a one-digit number.  Default: 5
&RELEASE	Held sysout release indicates whether the sysouts of the jobs are released for print after they are analyzed by CONTROL-M. <ul style="list-style-type: none"> <li>■ Y (Yes) - Release sysouts for print. Default.</li> <li>■ N (No) - Do not release sysouts.</li> </ul>
&SCDLIB	CONTROL-M scheduling table library name. The scheduling table library name must be the same as the name specified in DD statement DAMEMLIB for JOB3.  Default: CTM.AUTO.SCHEDULE
&SHOUTT	SHOUT message when a job fails. Specify the text for SHOUT WHEN NOTOK.  Default: %%JOBNAME J%%JOBID ENDED NOTOK!, where %%JOBNAME is an AutoEdit variable that is replaced with name of the failed job. Specify ' ' (blank) to suppress the message.
&SHOUTD	Destination for SHOUT messages. The default is OPER, which sends regular messages to the console. For more information and additional options, see parameter SHOUT in the <i>CONTROL-M for z/OS User Guide</i> .
&TOCLASS	MSGCLASS re-queuing specifies the new output class to which CONTROL-M must re-queue the MSGCLASS sysouts of the job.  Specify ' ' (blank) if reroute is not required.  Specify * if the MSGCLASS sysouts of the job must be requeued to the original MSGCLASS of the job after being analyzed by CONTROL-M.  Default: *



---

**Table 12    DEFAULTS Parameters (part 3 of 3)**

<b>Parameter</b>	<b>Description</b>
&USERID	ID of the user who requests CONTROL-M services.  Default: CTM600
&YEAR	The first year to be used in creating periodic calendars from the Reference Master Information Report file (KM010).  Default: 1999



# Messages

This list contains messages produced by the components of the conversion tool, except those issued by the CTMBLT. Messages issued by the CTMBLT utility are described in the *INCONTROL for z/OS Messages Manual*.

A message code usually consists of the following parts:

---

CTMyyyaa-nnx

---

where CTM indicates that the message pertains to CONTROL-M, and where:

Item	Explanation
yyy	3-character identifier of the conversion tool component that produced the message. Examples: CA7, DRP
aa	2-character identifier for the component that produced the message
nn	2-character numeric identifier for the message
x	is a 1-character alphabetic identifier for the severity of the message Valid values are: <ul style="list-style-type: none"> <li>■ A - Action</li> <li>■ E - Error</li> <li>■ I - Information</li> <li>■ S - Severe</li> <li>■ W - Warning</li> </ul>

Message descriptions contain any or all of the following:

*Explanation:* Description of the cause of the message, and other related information.

*System action:* System action when this message is issued.

*User response:* Recommended actions to correct the problem.

---

<b>CTMATO-02S</b>	<p><b>INSUFFICIENT STORAGE. INCREASE REGION SIZE</b></p> <p><i>Explanation:</i> A memory acquisition MVS function failed. The job's REGION parameter specification is not large enough.</p> <p><i>User response:</i> Increase the value of the REGION parameter and rerun the job</p>
<b>CTMATO-03S</b>	<p><b>MORE THAN <i>number</i> LINES IN THE <i>member</i> MEMBER</b></p> <p><i>Explanation:</i> Member <i>member</i> contains more lines than the number indicated in the message (the allowable maximum).</p> <p><i>System action:</i> The program terminates with condition code 12.</p> <p><i>User response:</i> Member DEFAULTS in the conversion source library contains various defaults for the conversion tool. Increase the value specified for &amp;LINMAX, rerun job ASMLINK; then rerun the job.</p>
<b>CTMATO-10S</b>	<p><b>UNABLE TO WRITE MEMBER <i>member</i></b></p> <p><i>Explanation:</i> An attempt to write a member in the library failed.</p> <p>This message is accompanied by a CTMMEM message in the log, which explains the cause of the problem.</p> <p><i>System action:</i> The program terminates with condition code 12.</p> <p><i>User response:</i> Check the CTMMEM message in the SYSLOG, and correct the error accordingly; then rerun the job.</p>
<b>CTMATOAE-03E</b>	<p><b>UNSUPPORTED BASE-PATTERN OR HOLIDAY-ID OR SHIFT-PATTERN FIELD. KEY-NAME=<i>keyname</i></b></p> <p><i>Explanation:</i> An unsupported base pattern value (for example, a Julian date specified with a non zero base pattern), or a nonblank Holiday ID or shift pattern, was specified.</p> <p><i>User response:</i> Examine the key (<i>keyname</i>) in the Parameter Master Listing report (PM010) and the corresponding member created in the AutoEdit Library, to determine if any corrections must be made.</p>
<b>CTMATOAE-05S</b>	<p><b>PUTMEM FAILED WITH RC=<i>rc</i>, MEMBER <i>member</i></b></p> <p><i>Explanation:</i> A problem occurred while trying to write the indicated member to the AutoEdit library.</p> <p><i>User response:</i> Please notify your local INCONTROL representative.</p>
<b>CTMATOAE-07I</b>	<p><b>CREATED MEMBER <i>member</i>, LAST KEY-NAME <i>key</i>, NUMBER OF KEYS <i>keynum</i>, NUMBER OF ERRORS <i>errnum</i></b></p> <p><i>Explanation:</i> This information message indicates that the indicated member was successfully created in the AutoEdit library.</p>

---

This message also indicates the number of %%IF%%KEY statements (that is, number of keys) created (*keynum*), and the key-name of the last key (*key*). If any errors occurred in creating the member, the message also indicates the number of errors (*errnum*).

*User response:* If the message indicates errors, the user must check the appropriate member in the AutoEdit library for error messages.

**CTMATOAE-99I      AUTO-EDIT LIBRARY CREATED**

*Explanation:* This information message indicates that the AutoEdit library has been created.

**CTMATOJC-03I      STARTING CONVERSION OF JCL-LIBRARY**

*Explanation:* This information message indicates that the conversion of a JCL library is beginning.

This message is produced prior to beginning the conversion of each A-AUTO library specified by the ATOJCL $nn$  DD statements.

**CTMATOJC-04S      CTMMEM FUNCTION *function* FAILED WITH RC=*rc***

*Explanation:* The indicated function (GETMEM, PUTMEM, DIRECTOR, or FINISH) failed.

*User response:* If RC=48, increase the size of the &LINMAX parameter in the DEFAULTS member. Otherwise, notify your local INCONTROL representative.

**CTMATOJC-05E      JCL LIBRARY IS EMPTY, DD=*ddname***

*Explanation:* The JCL library pointed to by DD statement *ddname* has no members.

*User response:* Check whether DD statement *ddname* points to the correct A-AUTO library. If it does not, correct the statement. If it does, and the library is empty, remove DD statement *ddname* from the JCL stream in any future executions of the job.

**CTMATOJC-06I      MODIFICATIONS WERE DONE TO MEMBER *member***

*Explanation:* This information message indicates that member *member* was created, with modifications, in JCL library CTMJCL $nn$ .

**CTMATOJC-07I      END CONVERSION OF JCL LIBRARY; DD=ATOJCL $nn$ , DSN=*dataset***

*Explanation:* This information message indicates that the program has successfully finished converting the JCL library dataset pointed to by DD statement ATOJCL $nn$ .

---

**CTMATOJC-08E**     ***type member* COULD NOT BE FOUND IN JCL LIBRARIES**

*Explanation:* The indicated member of the indicated type could not be found in the JCL libraries.

For type MEMBER: When trying to process an A-AUTO @NET, @FROM or @TO statement, the indicated member could not be found in any of the primary JCL libraries (ATOJCL $nn$ , where  $nn$  is greater than 00) corresponding to the member in the secondary JCL library.

For type RERUN: A RERUN member specified in the System Qualifiers file could not be found in any of the JCL libraries (AUTOJCL $nn$ , where  $nn$  is greater than or equal to 00).

*User response:* For type MEMBER: Ensure that the member in the secondary JCL library that contains an A-AUTO @NET, @FROM and/or @TO statement has a corresponding member in at least one primary JCL library.

For type RERUN: Ensure that the RERUN member name created in the System Qualifiers file exists in at least one A-AUTO JCL library.

**CTMATOJC-09E**     **UNSUPPORTED/UNKNOWN FUNCTION *member, statement***

*Explanation:* An error was encountered while attempting to convert an A-AUTO JCL statement (*statement*) in member *member* in a JCL library.

*System action:* The text of the problematic statement (*statement*) is displayed, and a '\$' is inserted into the statement at the approximate position that the error occurred.

*User response:* Correct the error and rerun the job

**CTMATOJC-11E**     **MAXIMUM NUMBER OF SYSTEM PREFIXES EXCEEDED**

*Explanation:* The allowable maximum of 100 unique system prefixes has been exceeded.

Each CPU has a unique prefix. This message indicates that the site has over 100 CPUs.

*User response:* Check the system file to make sure that there is no mistake. If your site actually does have more than 100 CPUs, notify your local INCONTROL representative.

**CTMATOMN-03I**     **THERE ARE NO JOBS IN NETWORK *network***

*Explanation:* This information message indicates that the definition for the indicated network has no jobs related to it in the A-AUTO Network Registration List Report file (DD statement DANM020).

---

**CTMATOMN-04E**    **SOME JOBS WERE “LOST” FOR NETWORK *network***

*Explanation:* In the A-AUTO Network Registration List Report file, DD statement DANM020, the definition for the indicated network contains a conflict between the network's number of jobs parameter and the number of jobs defined.

*System action:* The program continues processing.

*User response:* Verify, and correct if necessary, the A-AUTO network definition. If you correct or modify the network definition, rerun the job.

**CTMATOSC-00I**    **MESSAGES FOR *ntwrk* NETWORK**

*Explanation:* During the conversion process, at least one A-AUTO feature in network *ntwrk* could not be converted.

This information message serves as a header message for message CTMATOSC-05W, which details the problems encountered in converting an A-AUTO feature.

**CTMATOSC-05W**    **UNSUPPORTED OPTION: *text***

*Explanation:* The conversion tool does not support the A-AUTO feature specified in text.

This message accompanies message CTMATOSC-00I, and identifies the cause of the conversion error for the network identified in message CTMATOSC-00I. This message is displayed each time a problem is encountered.

*System action:* The network containing the unsupported option is not fully converted.

*User response:* The user must manually complete the network conversion, if necessary.

**CTMATORC-08E**    **MEMBER TABLE<sub>xx</sub> DOES NOT EXIST**

*Explanation:* The program attempted to read the calendar TABLE<sub>xx</sub> but was unable to do so. This calendar is required in creating a CONTROL-M periodic calendar. For further information, see [“24. STANDARD PROCESSING DATE” on page 56](#).

*System action:* Processing continues.





# Planning The Conversion

To assist the smooth running of the conversion process, BMC Software recommends that you carry out a number of steps before starting the conversion itself. These steps are set out in this appendix.

This appendix outlines the key Business Integrated Scheduling (BIS) functions and environmental metrics required to determine the initial level of effort associated with the migration of business processing to CONTROL-M.

## 1: Organize the Conversion Team

1. Identify those who will be involved in the conversion process. They should participate in planning the conversion and implementing the steps in this appendix before beginning the conversion.

Include in this list those who support the current environment and who require training or retraining and/or mentoring, such as operators, production control administrators, product administrators, production analysts, application support and programming personnel, security administrators, and so on.

2. Ensure that the conversion team has sufficient knowledge of
  - the features and operation of
    - A-AUTO
    - CONTROL-M
    - the conversion utilities
  - your existing scheduling information and its operation procedures
  - your site rules on dataset organization, naming conventions, and so on
  - your expectations from the conversion project

3. Identify the exact release or version number of A-AUTO that you are currently using.
4. Identify the operating system and platforms to be supported by CONTROL-M in the target environment. In relation to each platform, identify the release level, number of systems, and physical location.

## 2: Analyze Your Hardware

Consider the configuration of the system currently in use at your site, and whether you are making the best use of your hardware resources.

Obtain sufficient information to respond to the issues raised in this section. Record the answers carefully, because they will be of importance during and after the conversion to CONTROL-M.

- What resources, such as tape drives, initiators, and so on, do you use at your site?
- What MVS images, that is, CPUs, LPARs, and/or Sysplexes, will be available to CONTROL-M when running production jobs?
- How are your MVS images connected? Is the connection by
  - coupling facility
  - shared spool
  - NJE
  - some other method

Are the systems managed separately or collectively? Is there job flow between systems?

- Do you currently have multi-system dependencies, either on the same platform type, or using different platforms? If so,
  - how many?
  - how are they managed?

## 3: Consider Current Practices

Consider the current practices at your site. The relevant issues include at least the questions set out in this section. Do not hesitate to ask others for information they may be able to provide. Take all software and hardware platforms into account when answering. Record the answers carefully, because they will be of importance during and after the conversion to CONTROL-M.

1. How is production scheduling currently handled on your computers?
2. Who currently uses your system?
  - Is there a single production department or are there several?
  - Who are the end users of the system?
3. Consider the typical application flows at your site. The following are useful questions to ask:
  - Which are the three key applications, in terms of size, complexity, or value to your business?
  - How are those applications scheduled?
  - How are their internal dependencies managed?
  - Are there currently any performance bottlenecks or constraints in scheduling implementation?
4. List any products you use to support production scheduling, such as console automation, job restart products, and so on.
  - What function does each such product perform?
  - Will CONTROL-M replace that function?

If you think that CONTROL-M will not make some product redundant, obtain as much information as possible about that product, to enable you to decide how the product will interface with CONTROL-M.

5. List all your applications, interfaces, user or system exits, reports, and similar material, that
  - operators, system programmers, and other third parties have customized, and
  - form part of the implementation of your current production scheduling

Include interfaces used to submit jobs from an internal front-end process, as well as any interface used to issue commands and/or perform tasks using batch utility programs.

Consider whether you can use CONTROL-M to implement these functions and/or features.

6. Do you manually schedule any jobs or their logical successors on demand, instead of allowing the system to schedule jobs? If you do,
  - list each job and record the way you deal with it
  - consider whether CONTROL-M can be used to schedule these jobs automatically
7. Do your jobs run automatically, on rigid scheduling, or do you frequently modify job schedules and/or dependencies to meet needs as they arise?
8. Consider your job concurrency requirements, and the way you meet those requirements. Examples of questions to ask are the following:
  - Do you use job triggering, so that the completion of one job causes another job to be submitted or ordered?
  - Do you use job dependencies, meaning that one job (the “waiting job”) does not start until another has finished, even though the waiting job is submitted or ordered in some other way?
  - Do you use negative job dependencies, meaning that if a job fails, another job starts?
9. How do you manage such resources as tape drives, initiators, and so on?
10. Consider the following questions about the jobs your systems currently perform:
  - How many jobs do you currently have defined?
  - How many jobs are run on a daily, weekly, or monthly basis?
  - How many jobs run on peak days, for example, end of year processing?
  - How many jobs run “on request”, that is, demand jobs (see Question 6)?
  - Are your existing job definitions satisfactory in every respect?
  - Do you use all your existing job definitions, or are many now obsolete?
  - How many jobs use JCL automation features? Identify the type of automation used.
  - How many jobs are scheduled using dataset triggering?
  - How many jobs require manual intervention prior to submission?

11. How many jobs use JCL automation features? Identify the type of automation used.
12. How many jobs are scheduled using dataset triggering?
13. How many jobs require manual intervention prior to submission?

## 4: Read the Conversion Guide

Read through this conversion guide. While doing so, consider the following points.

1. Identify any “special” situations. These can arise where
  - the conversion will not be performed automatically
  - your existing system is otherwise incompatible with CONTROL-M, for example, where calendar generation may serve as a substitute for some scheduling parameters

Are the proposed solutions acceptable in all cases? If not, identify alternative solutions, such as the use of the supplied user exits.
2. Is there any aspect of the way you use A-AUTO that may not be reflected in the reports and parameter files used by the conversion program?
3. Prepare the names to be used for libraries, table names, job names, conditions, resources, and so on, in the output of the conversion, in order to reflect the way you want the CONTROL-M environment to appear to users.
4. Consider whether at this stage you are converting the entire production environment, or just one application? If you are only converting one application, determine
  - how typical it is of the work done at your site
  - what are the principal differences between this application and other applications
5. Consider whether you can yet identify any other pitfalls ahead, and if so, how to avoid the problems they appear to present.



# A-AUTO Conversion for Fujitsu Sites

This document reviews the steps for performing a conversion from A-AUTO at sites running under a Fujitsu operating system. As the aim is to simplify the maintenance of the conversion tool without creating a special version of the conversion tool, we recommend performing the conversion under an MVS operating system, using as input the customer's A-AUTO reports and JCL libraries.

## Conversion Input

Following are the actions to be performed at the customer's site for creating the input data to the conversion tool.

- 1 Create the following A-AUTO reports at the customer's site, based on the customer's A-AUTO production database:
  - A-AUTO Network Registration List report (NM020)
  - A-AUTO Dataset Flag Status report (DF020)
  - A-AUTO Schedule Registration List report (SM020)
  - A-AUTO Parameter Master Listing report (PM010)
  - A-AUTO Calendar Inquiry List report (HT020)
  - A-AUTO Reference Master Maintenance Information report (KM010)
- 2 Copy all customer's A-AUTO JCL libraries. Note that any changes done to these libraries after they are copied are not included in the conversion output.

# Customization

Support for the AUTO-DELETE statement is described in [“30. AUTO-DELETE” on page 59](#). To enable this facility to operate in Fujitsu sites, edit member \$DELETE in the conversion source library, and change the name of the PGM from IEHPROGM to JSGPROGM.

## Conversion Output

- 1 To perform the conversion, follow Steps 1 through 6 as described in [Chapter 3, “Conversion Steps.”](#)

During the conversion process, the conversion tool creates the following CONTROL-M libraries and output files, which must be copied to the customer’s site:

- Calendar library
  - JCL libraries
  - AutoEdit library
  - Scheduling Table library
- 2 The following files must be taken to the customer’s site in order to perform the next steps of the conversion:
    - Daily list
    - Sysnames file
    - Libnames file
  - 3 The following files include information on the conversion process and results:
    - Message file
    - Job Scheduling Definition Error File
  - 4 At the customer’s site, perform [“Step 7 - Perform Final Adjustments” on page 38](#) and [“Step 8 - Check the Conversion Results” on page 38](#).



# Problem Reporting

Please supply all the information requested below when reporting a problem related to the conversion tool:

- the version number of CONTROL-M (for example, 6.1.00) and the MVS operating system, such as z/OS 1.1
- the release number of A-AUTO (for example, 6) from which you are converting
- the latest PTF applied to the conversion tool
- a copy of the DEFAULTS member
- the full text of all Job Log messages, in addition to all error messages in the error files, DAPRINT, SYSPRINT, and so on)

If an abend has occurred, send the symptom dump to BMC Software Customer Support and have a full dump (SYSUDUMP) available for use by Customer Support staff.

Whenever a change is made to the DEFAULTS member, or a source fix is applied, you should re-perform [Chapter 3, “Step 1 - Create the conversion source and load libraries,”](#) [“Step 2 - Check and Modify Parameters in the DEFAULTS Member and Perform Preliminary Customization,”](#) and [“Step 3 - Tailor and Run the ASMLINK Member”](#).



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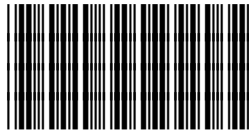
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## Notes



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