MultiBatch 10

Installation Guide

Intelligent workload management for HPE NonStop.

Published: November 2022
Edition: J-series or L-series RVUs

INSIDER TECHNOLOGIES

Version Control

Document Tracking

MultiBatch Version:	10.0
Issue Date:	NOV 2022

Document History

Date	Version	Details
NOV 2022	1.0	Initial Version

Company Information

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1. Introduction

This document provides details of the MultiBatch installation macro which automates the restore, customisation and creation of the necessary MultiBatch files.

Following a successful installation, a 'Quick Start' chapter on configuring a schedule is provided.

2. Shipped Files

This document will refer to <NNN>.

This is the MultiBatch release number; for example, 100 represents version 10.0.

The MultiBatch installation consists of two PAK files:

1. INMB<NNN> - the MultiBatch installation macro (SYSINST).
2. MB<NNN> - the MultiBatch software.

MultiBatch is available for either J-series or L-series.

The PAK files should be downloaded to your NonStop node as binary files using FTP or IXF and each file FUP altered to CODE 800 (also applies to NonStop X platforms).

MB<NNN> PAK file contains two subvolumes:

- MBDA<NNN> - the MultiBatch database.
- MBOB<NNN> - the MultiBatch object code.

Note: For the purposes of this documentation, the PAK files will be installed on subvolume MBATINST. This will be known as the installation subvolume.

You will also require a licence PAK file, it will be named MBLIC. This contains licence files with content specific to your site.

3. User ID Information

Before the installation is started, it is advisable to have the correct User Id information available.

Note: There are some basic rules that must be obeyed but outside of the following guidelines, users can select which User Ids are used to own and access the MultiBatch software:

- The MultiBatch software should not execute as SUPER.SUPER.
- The MultiBatch software should not execute as a group manager if the software is to be accessed by a user in that group, e.g. software executes as MBAT.MANAGER and a user logs on as MBAT.OPS.
- The MultiBatch software should not execute as a specific user if the software is to be accessed by that same user, e.g. software executes as MBAT.OPS and a user wishes to logon as MBAT.OPS.

Suggested User Id structures include the software being owned and executed by MBAT.OWNER and a range of users created to access the software, e.g. MBAT.OPS, MBAT.CONFIG.

Before the MultiBatch installation, ensure that:

- The owner of the MultiBatch software has Safeguard read / write access to the nominated MultiBatch volume.
- The owner of the MultiBatch software has read / write access to the nominated EMS collectors. This can be checked by executing the EMSCINFO <collector- name> command, e.g. EMSCINFO $0 and then checking the SECURITY setting. Use EMSCCTRL to alter the setting if required.

Note: For the purposes of this documentation the software will be installed, owned and started by MBAT.OWNER.

4. UNPAK and Load the Installation Macro

UNPAK the Installation Macro

VOLUME to the installation subvolume MBATINST.

UNPAK the installation macro file by running the following command:

```
UNPAK INMB<NNN>,*.*.*,LISTALL, OPEN, AUDITED, MAP NAMES &
($*.*.* TO $<YOUR-DISK>.MBATINST.*) , MYID
```

A file called SYSINST will be restored.

Loading the Installation Macro

Logon to a TACL session as MBAT.OWNER. VOLUME to the installation subvolume MBATINST.

If your terminal emulator provides such a facility, it may be worth logging the installation output to a local file on your PC.

Load up the Installation macro by keying:

```
LOAD / KEEP 1 / SYSINST
```

When the macro has been loaded, the following text will be displayed:

```
CODE                        RETRIEVE^SETTINGS

CREATE^CONFIG^FILES         DISPLAY^SETTINGS

EXECUTE^HEALTH^CHECK        ALTER^SETTINGS

RESTORE^SYSTEM^PAK          RESTORE^LICENSE^PAK

EXECUTE^INSTALL             INSTALL^CONFIGURATION^FILES

ACCELERATE^OBJECTS          INSTALL^SYSTEM
```

You will only need to execute one of these macros - INSTALL^SYSTEM. The other macros will be executed by INSTALL^SYSTEM on your behalf.

5. Start the Installation Macro

To invoke the MultiBatch installation macro, enter the following at your TACL prompt:

```
INSTALL^SYSTEM
```

If this is the first time that the macro has been executed from this subvolume then the macro creates an edit format file - INLOCAL - and writes default MultiBatch configuration information to it. You can alter this information in subsequent installation steps.

```
INLOCAL Settings file does not exist... Creating INLOCAL....

INLOCAL Settings file Created
```

If this file already exists, then the macro displays the name of your INLOCAL file.

```
Using $<DISK>.MBATINST.INLOCAL
```

If you are logged on as SUPER.SUPER, then the following message is displayed.

```
The MultiBatch installation macro cannot be executed as SUPER.SUPER Installation
macro aborting.....
```

6. The INLOCAL File

The INLOCAL file contains the configuration settings for your MultiBatch system which are displayed in a table; see below.

It is essential that you check the content of this file to your satisfaction because the values in this file will be applied to other configuration files during the installation process.

If you are familiar with the content of the INLOCAL file, then you can modify the content via EDIT / TEDIT.

Inexperienced MultiBatch users can use the installation macro to alter the content of this file. Select option (2) from the Installation main menu to achieve this.

INLOCAL File values

Record Name	Default value	Description
SYST-OBJECT	MBATOBJ	Subvolume containing the MultiBatch object code files.
SYST-DATA	MBATDAT	Subvolume containing the MultiBatch database.
PAKFILE	MB<NNN>	A PAK file containing the MultiBatch object code and database Enscribe files.
PAKLICE	MBLIC	A PAK file containing the MultiBatch licence file.
SAVESUBVOL	MBATSAV	If the installation macro detects any files that already exist, they will be copied to this subvolume before being replaced. If the file already exists on this "save" subvolume then it will be deleted.
PATHWAYNAME	$MBPWY	The name of the MultiBatch PATHWAY process.
STREAMER	$MBSTR	This is the name of the EMS logging process, STREAMER. This process issues tokenised MultiBatch events.
CLOCKMON	$MBCLK	This is the name of the clock-monitor process, CLOCKMON. This process checks that nominated jobs start at the appointed time
WATCHER	$MBWAT	This is the name of the EMS tracking process for WATCHER. This process retrieves MultiBatch EMS events and updates a status database with completion and failure statistics.
CALENDAR	$MBCAL	This is the name of the Event Timer Calendar process. This process monitors a calendar of start times for nominated jobs and requests a start when the appointed time arrives.
TRIGGER	$MBTRG	This is the name of the Event Timer Trigger process. This process accepts the Calendars request to start a nominated jobs and then tracks that job for completion or failure.
HOMETERM	$VHS	This is the name of the home terminal process that can be used to log batch application output.
PREFIX	MB	The prefix for the MultiBatch ServerClass' process names.

7. The Installation Menu

When the installation macro is started using INSTALL^SYSTEM, the following menu will be displayed.

```
------------ Installation Macro ------------

------------ Installation Steps

( 1) Create Configuration and Work files

( 2) View and Alter installation location settings

( 3) Restore the PAK file

( 4) Run the INSTALL program

( 5) Install and alter the Configuration Files

( 6) Accelerate Object code

( 7) Restore the Licence PAK file

( X) Exit the installation

.....No Steps executed

Please Select the installation step_
```

Each time you start this macro then the penultimate line will state `".....No Steps executed"`,
even if you have successfully completed steps during previous use of the macro.

Within the same macro session, the penultimate line will state `".....Previous Step=nn"` if you have executed a step.

You can interrupt the installation by exiting the session (option X) and resuming the installation at a later date. Your configuration options will be saved.

The following pages relate to each of the above menu options, e.g. when selecting option `"Create Configuration and Work files"`, then a page is provided on what this option is doing.

8. Create Configuration and Work Files

This section of the installation macro will create the base configuration files on your installation subvolume.

The following messages will be displayed first time through. If the files that you are creating already exist, then extra messages will be displayed detailing files that have been deleted and renamed.

```
.
. Creating the Configuration Files....
. Creating the PATHWAY Configuration file: PWLOAD
. Creating the PATHWAY Configuration file: PWCONF - Please Wait !
.
. Creating the RESCHDST Start Up OBEY file: RUNRST
.
. Creating the Streamer Start Up Obey file: RUNSTRM
.
. Creating the WATCHER Start up OBEY file: RUNWAT
.
. Creating the CLOCKMON start up OBEY file: RUNCLOCK
.
. Creating the Calendar/Trigger Start up OBEY file: CALTRIG
.
. Creating the Local Definitions file: INSTLOCS
.
. Creating the UTCSV start up file: RUNUTCSV
.
. Creating the SYNC IN TRANSLATE file : BMONDEFS
.
. Configuration File Creation Complete
.
Input C to continue the installation     or
.X to exit the installation Select C/X?
```

Option C sends you back to the Installation menu, option X resumes your TACL session.

The files that have been created contain strings such as "<DATALOC>". Values will be replaced with the values in your INLOCAL file by later installation steps.

9. View and Alter Installation Location Settings

This section of the installation macro allows you to review and alter the settings within the INLOCAL file.

The following information is displayed and in this example, the version 10.0 PAK file is referenced:

```
Current Location Settings
*************************

System: <NODE>
Volume: <DISK>.MBATINST
Userid: <GROUP.USER>

(1) The    object code subvolume      is MBATOBJ
(2) The    database subvolume         is MBATDAT
(3) The    PAK file                   is MB100
(4) The    PAK Licence file           is MBLIC
(5) The    Saved subvolume            is MBATSAV
(6) The    PATHMON process            is $MBPWY
(7) The    Streamer process           is $MBSTR
(8) The    Clock Monitor process      is $MBCLK
(9) The    Watcher process            is $MBWAT
(10)The    Calendar process           is $MBCAL
(11)The    Trigger process            is $MBTRG
(12)The    Home Terminal              is $VHS
(13)The    PATHWAY Process Prefix     is MB
Do you want to change any of these settings?
Input C to continue the installation or H to execute Health Check   or
.   R to review the setting          or T to execute a TACL command or
.   X to exit the installation       or number of value to be changed
Select C/H/R/T/X/Number ?
```

Option C sends you back to the Installation menu, option X resumes your TACL session.

Option R (Review) redisplays the settings and is useful once you have made changes.

Option T displays a further line: `TACL Command ?` You can now submit a command, which can be useful if you want to check a process name or subvolume without leaving the macro.

A line number allows you to alter a configuration setting e.g. 12

`Old Home Terminal: $VHS New ?` <you supply a new value e.g. $ZHOME>

`The new Home Terminal is: $ZHOME`

All input is upshifted. No data vetting is performed at this stage; this can be executed by the Health Check option. This allows an INLOCAL file built through the editor or this installation macro to be verified.

The final option is H - Health Check

For the MultiBatch process names, this check will determine whether the process names are valid names and whether they exist. Examples below.

```
MultiBatch PATHWAY Name         :$MBPWY     - Valid
MultiBatch Streamer             :$MBSTR     - Valid
Clock Monitor                   :$MBCLK     - Valid
Status Watcher                  :$MBWAT     - Valid
Event Timer Calendar            :$MBCAL     - Valid
Event Timer Trigger             :$MBTRG     - Valid
MultiBatch Home Terminal        :$ZHOME     - Valid($SYSTEM.SYS01.ZHOME)
```

For the MultiBatch subvolume test, this check will determine that the subvolume name is valid and that the subvolume is empty.

```
MultiBatch Object: MBATOBJ - Valid
MultiBatch Database: MBATDAT - Valid
MultiBatch Save Subvol: MBATSAV - Valid
```

The product and licence PAK files are checked for existence.

If the file code of either file is not 800, then FUP is started and the file code is altered.

```
MultiBatch product PAK :MB100 - File code not 800
Starting FUP..........
```

10. Restore the PAK File

This section of the installation macro utilises UNPAK to restore the contents of the product PAK file to your current disk based on the contents of your INLOCAL file.

The results are written to an edit file, PAKOUT, which is held on your installation subvolume. At the end of the restore, the results are summarised to your terminal, e.g.:

```
. Restoring the files from MB100 - results in PAKOUT - Please Wait !
.
. Summarising Restore results
TEXT EDITOR - T9601L01 - (20OCT14)
CURRENT FILE IS <DISK>.MBATINST.PAKOUT
6   Drives: (<NODE>.<PID>)
16  <DISK>.MBATDAT
159 <DISK>.MBATOBJ
267 Files restored = 145 Files not restored = 0.
. You will now need to FUP LICENSE MBATOBJ.BMONL and
.                                 MBATOBJ.SRVSTAT.
```

The macro reminds you that some of the MultiBatch code needs to be licensed using FUP. After the restore the following message is displayed.

```
Input C to continue the installation or
      X to exit the installation
Select C/X?
```

Option C sends you back to the Installation menu, option X resumes your TACL session.

11. Run the INSTALL Program

The INSTALL program executed in this section of the macro alters these default settings to the local values held in your INLOCAL file.

This activity is summarised to your terminal:

```
Creating the configuration files
Creating MBATDAT.INSTLOCS
FILES DUPLICATED: 1
Editing MBATDAT.INSTLOCS - Updating with your local values
Node...................<NODE>
VOLUME.................<DISK>
DATABASE..............MBATDAT
OBJECT................MBATOBJ
Clock Monitor PROCESS.$MBCLK
Running INSTALL.....
SYSOWNER updated (LASTFILE)

** Installation completed successfully ***
```

After the execution of SYSINST the following message is displayed:

```
Input C to continue the installation or
      X to exit the installation
Select C/X?
```

Option C sends you back to the Installation menu, option X resumes your TACL session.

12. Install and Alter the Configuration Files

In this section of the macro, the base MultiBatch configuration files created in step 1 of the installation are copied into place on your nominated subvolumes.

Where appropriate, some text substitution takes place and values such as <DATALOC> are replaced globally with the value set up in your INLOCAL database.

Progress is reported to your terminal.

```
Creating the configuration files
Processing the PATHWAY Configuration file: PWCONF
Creating MBATOBJ.PWCONF
FILES DUPLICATED: 1
Editing MBATOBJ.PWCONF
```

This sequence of messages is then repeated for the following files:

```
PWLOAD     PATHWAY cold load file.
RUNWAT     WATCHER startup file.
RUNCLOCK   CLOCKMON startup file.
RUNRST     Example obey file to run the RESCHDST utility.
RUNSTRM    STREAMER startup file.
CALTRIG    Event Timer CALENDAR and TRIGGER start up file.
RUNUTCSV   Example obey file to run the UTCSV utility.
BMONDEFS   Example SYNC IN TRANSLATE File
```

After the installation of the MultiBatch configuration files, the following message is displayed.

```
Input C to continue the installation or
      X to exit the installation
Select C/X?
```

Option C sends you back to the Installation menu, option X resumes your TACL session.

13. Accelerate Object Code

In this section of the macro, some of the MultiBatch object code files are accelerated to improve execution performance. The macro will use either the AXCEL, OCA or OCAX accelerator depending upon the platform that MultiBatch is being installed on.

Full results are written to an edit file, AXCELRES, located in your MultiBatch installation subvolume.

Progress is reported to your terminal.

```
Accelerating Objects....
Accelerating objects, results in AXCELRES
Please wait.....
STREAMER..... 1 of 2
WATCHER..... 2 of 2
Acceleration Results in file <DISK>.MBATINST.AXCELRES
Summarise Y/N?Y
```

A 'Y' value displays the following information:

```
Number of Acceleration Errors
.
TEXT EDITOR - T9601L01 - (20OCT14)
CURRENT FILE IS <DISK>.MBATINST.AXCELRES
18  0 Errors were detected
42  0 Errors were detected
```

Pressing <Enter> displays the following information:

```
Number of Acceleration Warnings
.
TEXT EDITOR - T9601L01 - (20OCT14)
CURRENT FILE IS <DISK>.MBATINST.AXCELRES
19  0 Warnings were issued
43  0 Warnings were issued
.
Full Acceleration Results in file $<DISK>.MBATINST.AXCELRES
```

After the summary of the accelerations, the following message is displayed:

```
Input C to continue the installation or
      X to exit the installation
Select C/X?
```

Option C sends you back to the Installation menu, option X resumes your TACL session.

14. Restore the License PAK File (Optional)

This section of the installation macro restores the contents of the licence PAK file to your current disk based on the contents of your INLOCAL file.

This step is optional; your licence file may be received as a text file rather than within a PAK file. In this situation the licence file (LICEFILE) must be installed in the MultiBatch database subvolume as a code 101 edit file.

The restore results are written to your terminal.

```
$<DISK>.MBATDAT
          CODE           EOF LAST MODIFIED    OWNER RWEP Type Rec Bl
LICEFILE   101          12288 22Jan2021 17:06 10,10 NUNU  K    506 4
Summary Information
Files restored = 1 Files not restored = 0
```

After the restore the following message is displayed.

```
Input C to continue the installation  or
      X to exit the installation
Select C/X?
```

Option C sends you back to the Installation menu, option X resumes your TACL session.

15. Final Tasks

Before starting the MultiBatch software, complete the following manual checks and alterations. Ensure that you have licensed the BMONL and SRVSTAT program files.

The supplied obey files will implicitly utilise $0 as its OUT file. If an Alternate Collector is to be used, please see the MultiBatch Technical Guide for further details.

```
VOLUME <MultiBatch Object Subvolume>
```

1) Start the MultiBatch Pathway:

```
OBEY PWLOAD
```

2) Start the MultiBatch STREAMER process:

```
OBEY RUNSTRM
```

3) Start the MultiBatch WATCHER process:

```
OBEY RUNWAT
```

4) Start the MultiBatch CLOCKMON process:

```
OBEY RUNCLOCK
```

5) Start the Event Timer CALENDAR and TRIGGER processes:

```
OBEY CALTRIG
```

16. Quick Start Configuration

Following the successful installation of MultiBatch and activation of the software, a user can follow the steps below to create a basic configuration, helping the user to assimilate the essential components of MultiBatch.
To access the MultiBatch interface, use the following steps:

- PATHCOM <MultiBatch Pathmon Name>
- Via PATHCOM, execute command RUN M10.

	Steps	Technical Guide	Comments
1	UTADDUSR	Chapter 2.3 Add First user	UTADDUSR will create the first MultiBatch user id with the associated ALLFACIL Security Class (Security Profile (SPR)), along with making this user the Owner of ALL BMONs.
2	PATHWAY	Chapter 2.4 Start Up and Logon	Logon to the MultiBatch Pathway via the 'RUN M10' command. This will present the user with the PSW screen from where the MultiBatch Guardian User and password is submitted.
3	CBM	Chapter 3.3 Configure BMON (CBM)	Ensure the LOG1 field is populated, preferably with the STREAMER process name. This ensures tokenized EMS events are issued.
4	CJB	Chapter 3.4 Configure JOB (CJB)	The user can optionally configure a job Start Time, Dependencies and Scheduling.
5	CSE	Chapter 3.5 Configure SEGMENT (CSE)	The user if they wish can configure Segment Dependencies and Scheduling. However, for a basic configuration to test the processes involved, utilize Job Dependencies and Scheduling.
6	CST	Chapter 3.6 Configure STEP (CST)	Within the CST facility, the user can configure object file, run time params, assigns, defines and parameters
7	PRC	Chapter 4.9 Prepare Phase (PRM)	This chapter describes the use of the PRC facility in order to create a LOADLIST file which contains the selected components and the BUILD file to create the BMON process
8	SBMON	Obey file to shutdown BMON, run STBUILD, then start the BMON process, followed by a build of the BMON process	Within the MultiBatch Object subvolume, an example SBMON file exists. Environmentalise this obey file to run the sequence of steps opposite.
9	EMS	Chapter 5.2 Primary / Alt Collector	By default, MultiBatch issues EMS events to $0. If the user wishes to use an alternate collector, see this chapter for instructions on how to achieve this.
10	SOV	Chapter 5.7 Status Monitoring (SOM)	Using the SOM menu, the user can monitor the status of the schedule via the various Status Monitoring screens, e.g. SOV, SOC.

17. Back Out Instructions

The following instructions can be used to back out and delete the MultiBatch software that has been implemented as a result of this installation exercise.

MultiBatch Location

VOLUME to the Installation subvolume, e.g. MBATINST.

To identify the subvolumes where the software has been installed, list out the contents of the INLOCAL installation file.

```
>>.File.contains.the.locations.of.software.and.databases.<<
SYST-OBJECT>MBATOBJ
SYST-DATA>>>MBATDAT
PAKFILE>>>>>MB100
SAVESUBVOL>>MBATSAV
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
```

Stop the Existing Software

Shutdown the MultiBatch Pathway:

```
PATHCOM <MultiBatch Pathmon Name>
= SHUTDOWN2, MODE IM
```

Exit Pathcom and stop the remaining MultiBatch processes:

```
STATUS *, PROG <MultiBatch Object Subvolume>.* , STOP
```

Delete the MultiBatch Object Code

```
VOLUME <MultiBatch Object Subvolume>
FUP PURGE *
```

Delete the MultiBatch Database

```
VOLUME <MultiBatch Database Subvolume>
FUP PURGE *
```

Delete the MultiBatch Saved Code

```
VOLUME <MultiBatch Save Subvol>
FUP PURGE *
```