

Reflex 80:20 Utilities Guide



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Version Control

Document Tracking

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Document History

| Date | Version | Details |
|----------|---------|---|
| 14/03/07 | 1.0h | Updated to include an additional EMS event reference for AGENTTMF. Typographic fixes. Included "Document Tracking" and "History " tables. |
| 19/03/07 | 1.0h | Additional references included for audittrails waiting to be dumped. |
| 20/12/07 | 1.0j | Updated Agent-jobslots for changed EMS events and functional description. |

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Overview

This document provides a guide to various utilities issued with Reflex 80:20.

Products will be issued by Insider Technologies Limited as and when they are developed.

Each product within this document will contain the following information:

- Product Description
- Installation guide
- Configuration guide
- EMS event examples

Disclaimer

It is to be noted that the TACL macros provided as part of the Reflex 80:20 'Utilities' suite, are issued by ITL, under the proviso that any changes made by the client will not be supported by Insider Technologies Limited.

MultiBatch Macro - "BATMACRO"

Product description

This TACL macro can cater for several types of scenarios, whereby users can execute equivalent MultiBatch BCOM commands via Reflex 80:20 Status Monitor 'STEP' objects.

The following BCOM commands are catered for:

- START UNIT
- ABORT UNIT
- RESTART UNIT
- HOLD UNIT
- RELEASE UNIT
- ALTER STEP TO 'COMPLETE' STATUS (FLAGS %070101)

The TACL macro – '**BATMACRO**' – is configured within different Reflex 80:20 TASKS and the TASKS then associated with the MultiBatch STEP (type/subtype) definitions. Users can then execute equivalent BCOM commands via Status Monitor 'Autodiscovered' MultiBatch STEP objects.

Installation guide

1. Download the MultiBatch macro – **BATMACRO** – to the Reflex 80:20 object subvol (or user's MultiBatch object subvol), using the ASCII option (BATMACRO is a Tandem edit type file).
2. Configure Reflex 80:20 TASK programs.
3. Two Reflex 80:20 TASK parameters are utilised within the TASK Program:

- **BATCH-ACTION**

The above **parameter** can assume any of the following **values**:

- **START** (Performs BCOM 'Start Unit' command)
- **ABORT** (Performs 'Abort Unit' command)
- **RESTART** (Performs 'Restart Unit' command) *
- **HOLD** (Performs 'Hold Unit' command)
- **RELEASE** (Performs 'Release Unit' command)
- **COMPLETE** (Performs 'Alter Step xxxx.xx.xx FLAGS %070101' command)

* For this version of the macro, RESTART will only function if CHECKSTART is set to 'N'.

- **ENTITY-NAME**

This parameter assumes a **value** of **~subject~** which equates to the UNIT id being extracted from the Status Monitor object, e.g. JOBA.AA.01.

The **SAME** macro – BATMACRO – is configured within different TASK Programs to cater for the above BATCH-ACTION requirements; the BATCH-ACTION parameter value changes accordingly.

Examples of TASK program names are as follows:

- "MBABORT"
- "MBCOMP"
- "MBHOLD"
- "MBREST"
- "MBRLSE"
- "MBSTART"

MultiBatch Macro - "BATMACRO"

Configuration Guide

1. Configure Reflex 80:20 TASKS, changing location of macro, hometerm id, etc.
2. An example program configuration is provided below, for the **ABORT** function:

- **PROGRAM 'DEFINITION' - MBABORT**

The screenshot shows the 'ITLTECH Task Master - Program Definition' window with the 'Definition' tab selected. The 'Program Details' section includes:

- Program Name: MBABORT
- Object Code: \$SYSTEM.SYSTEM.TACL
- Process Name: \$ABMB
- Enforce: No

The 'Parameters' section includes:

- In File: \ITLTECH.\$OPS.MBATOBJ.BATMACRO
- Out File: \$\$.#BAT.ABORT
- Terminal File: \$ZHOME
- CPU: 0 : 1
- Memory: 64
- Priority: 100

The 'Run Options' section includes:

- Startup Params: (empty)
- Parent Name: (empty)
- Program Type: Free
- Failure Task: (empty)
- Run HIGHPIN:
- Description: TACL macro to Abort MultiBatch Units.

- **PROGRAM 'PARAMETERS' - MBABORT**

The screenshot shows the 'ITLTECH Task Master - Program Definition' window with the 'Parameters' tab selected. The 'Program Details' section is identical to the previous screenshot:

- Program Name: MBABORT
- Object Code: \$SYSTEM.SYSTEM.TACL
- Process Name: \$ABMB
- Enforce: No

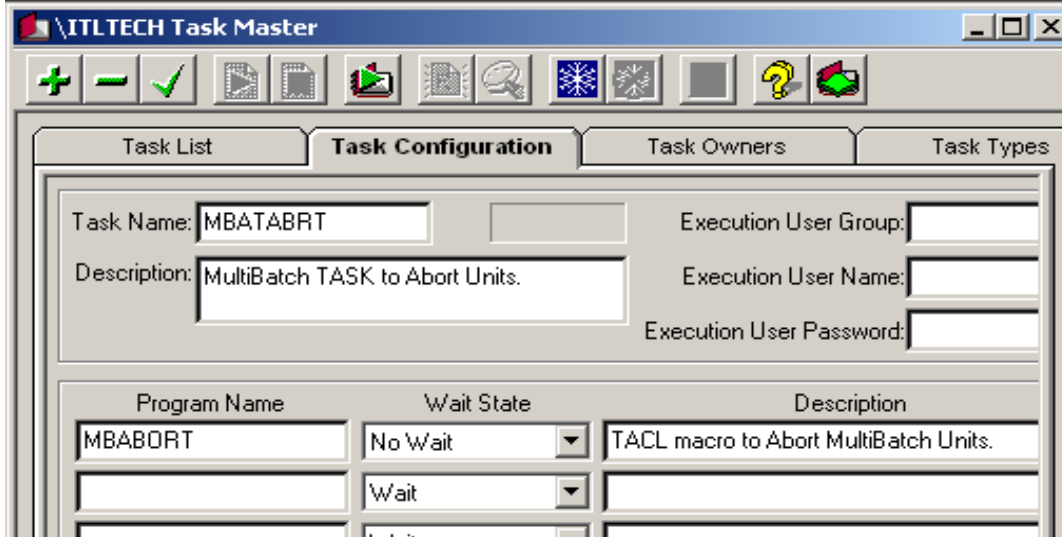
The 'Parameter Assignments' section is a table with two rows:

| Parameter Name | Parameter Value |
|----------------|-----------------|
| BATCH-ACTION | ABORT |
| ENTITY-NAME | ~subject~ |

MultiBatch Macro - "BATMACRO"

The BATCH-ACTION parameter value is changed for each TASK program. For example, TASK program 'MBSTART' would utilise a BATCH-ACTION parameter **value** of START.

- **TASK CONFIGURATION**



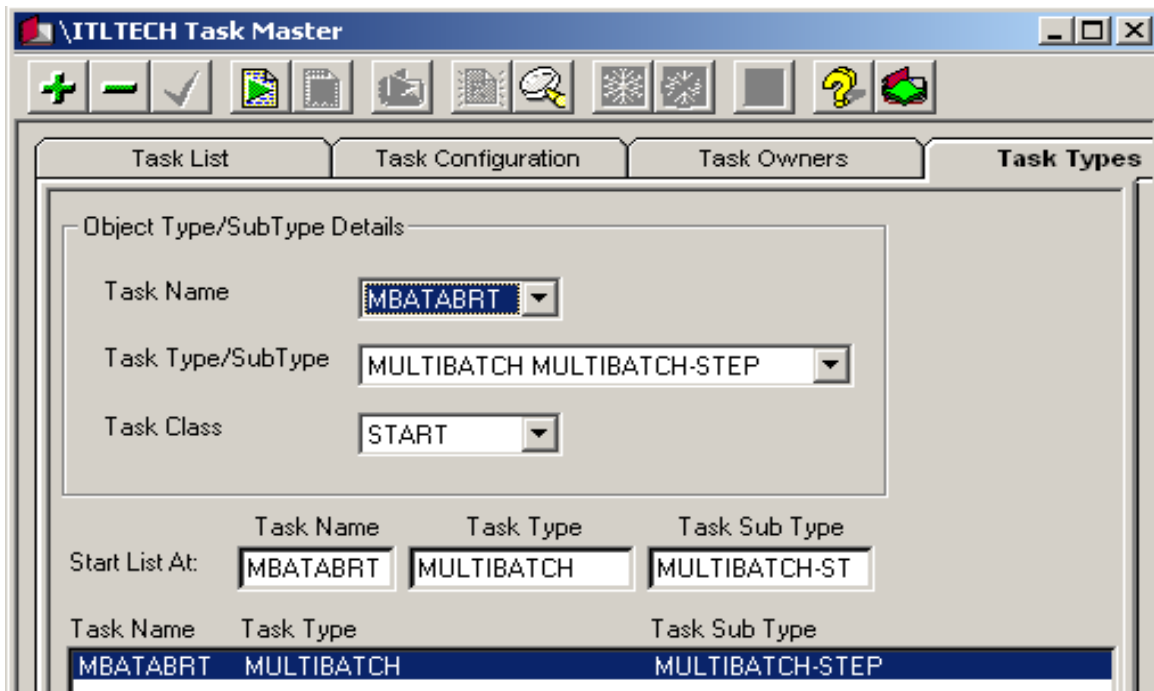
Note: Execution user id is dependent on whether the macros can access the BCOM and execute the various commands configured within.

If left blank, then the macros will execute as the logged on Reflex 80:20 GUI user id; the BCOM security configuration may or may not allow execution of these commands from this logged-on user id.

Users will need to identify the security requirements and configure the TASK CONFIGURATION entries to suit.

MultiBatch Macro - "BATMACRO"

- TASK TYPES**



The TASKS need to be configured against the MultiBatch "TYPE/SUBTYPES" to allow macros to be viewed via the MultiBatch objects in Status Monitor.

MultiBatch Macro - "BATMACRO"

- **STATUS MONITOR OBJECT – TASKS SELECTION**

Once the objects have been configured against the TYPE / SUBTYPE, users can then execute the commands (allowing for Reflex 80:20 Security):

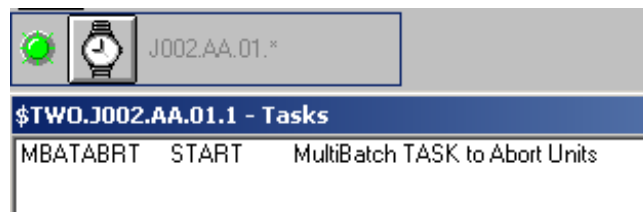
1. **SELECT TASKS UTILITY**

From the MultiBatch step object, right-click to display TASKS utility and select the 'List Available Tasks' icon:



2. **TASKS WINDOW DISPLAYED**

From the list displayed, double-click on the required TASK to execute:



EMS events

Example TASK EMS events are demonstrated below, for when a TASK has started and completed, with the relevant MultiBatch EMS event being issued. These events are already supplied with Reflex and MultiBatch.

Example of using a 'MBATREST' TASK to restart a failed unit is provided below:

1. **TASK STARTED**

```
\ITLTECH 10,17 09-05-2003 07:33:05 INSIDER^50^4 2370
TASKMASTER REFLEX 80:20 : TASKMASTER - Task MBATREST has been
started by Taskmaster. \ITLTECH.$RFTA:129752253 01
0331 0
```

2. **UNIT RESTARTED**

```
\ITLTECH 255,255 09-05-2003 07:33:08 MULTIBAT^1^0 0005
J001.AA.01.* J001.AA.01.*, restarted by operator: [$Y330 ,
00, Critical-Y, (255,255), \ITLTECH.$SYSTEM.SYSTEM.DELAY
]., \ITLTECH.$BIG 09/05/03, 07:33; Requesting CAID = 255,255
\ITLTECH.$MBDH:84495293 01 0109 \ITLTECH.$BIG 0
```

3. **TASK COMPLETE**

```
\ITLTECH 10,17 09-05-2003 07:33:16 INSIDER^50^4 2371
TASKMASTER REFLEX 80:20 : TASKMASTER - Task MBATREST has
been completed. \ITLTECH.$RFTA:129752253 01 0331
0
```

Spooler Monitoring - "JOBSLOTS"

Product description

The 'JOBSLOTS' monitoring utility allows a user to monitor the actual "number of jobs" in the spooler, as opposed to the Collector threshold, which complements the Reflex 80:20 Spooler Collector threshold monitoring.

If the number of 'physical' jobs in the spooler exceeds a user-configured value in the Reflex 80:20 Admin (Parameters) facility, then an EMS alert is issued, stating that the 'threshold is broken'.

If the number of jobs falls below this value, then an EMS alert is issued stating that threshold has 'returned to normal'.

EMS alerts are also issued for when 'JOBSLOTS' monitoring is started or stopped and if certain files are missing, which would negate functionality.

Spooler Monitoring - "JOBSLOTS"

Installation guide

The following Tandem files are supplied:

| | |
|-----------------|---|
| JSSERVER | Edit file (Code 101) - Pathway Server configuration file (AGENT-JOBSLOTS). |
| SPOOLS | Edit file (Code 101) - Contains list of your spooler supervisor processes which are to be monitored. |
| AGENTJOB | Edit file (Code 101) - "TAcl Routine" to perform the Spooler monitoring. |
| JOBSLOTS | Edit file (Code 101) - Called in via the AGENT-JOBSLOTS Server and performs a LOAD / KEEP 1 / AGENTJOB. |
| EMSMMSG | Edit file (Code 101) - EMS event generator macro. |
| TRANSJS | Binary file (Code 0) - Reflex EMS event 'TRANSIT' file. |

1. Download the above files to the Reflex Object subvolume, e.g. RFLXOBJ and FUP SECURE as required.
2. Configure via the Reflex ADMIN / PARAMETERS facility, the following parameters:

| | |
|----------------------------|--|
| SPOOLER-JOBS-CONF | This value needs to be that which is configured in your Tandem Spooler 'coldload' file - specified in the system SPOOL startup parameters, e.g. 4095. * (See below). |
| SPOOLER-JOBS-THRESH | This value needs to be specified for when you want to be alerted if the number of jobs exceeds this value, e.g. if you specify 3000, then an EMS alert is issued when this value is exceeded. Additionally, a percentage value is included in the EMS event text. |
| SPOOLER-INTERVAL + | Polling period to monitor spooler. Value is specified in minutes (See below). |
| SPOOLER-FREQUENCY + | Controls frequency that the same spooler state is reported. (See below). Used in conjunction with SPOOLER-INTERVAL to control how often EMS alerts are produced. If spooler-jobs-threshold has been exceeded, then an EMS event is issued. If the same state is still occurring N seconds later (SPOOLER-INTERVAL value), then it will not be re-issued until SPOOLER-FREQUENCY x SPOOLER-INTERVAL has passed. |

* Example of SPOOLER-JOBS-CONF value provided below (obtained from 'SPLCOLD' file):

```
SPOOL / IN $SYSTEM.SPL.SPOOL, OUT $ZHOME, NAME $SPLS, PRI 150,
TERM $ZHOME, NOWAIT, CPU 1 / 0 , 4095, 4095, 255, 10, 10
```

+ See Reflex Technical guide for further information on "Spooler-Frequency" and "Spooler-Interval" utilisation.

Spooler Monitoring - "JOBSLOTS"

Installation Guide

3. Environmentalise the following files:
 - AGENTJOB - TACL Routine
 - JOBSLOTS - LOAD/KEEP 1/AGENTJOB
 - JSSERVER - Pathway Server
4. Add contents of the 'JSSERVER' Server configuration file to the Reflex PWCONF file.
5. EDIT the 'SPOOLS' file and include your spooler supervisor processes in a vertical order, e.g.:
\$SPLS
\$SPLD
6. The Reflex Action Groups for all appropriate EMS events, issued by the AGENTJOB routine, are supplied in a Reflex TRANSIT file: TRANSJS.

Contents of TRANSJS needs to be 'imported' into the Reflex 80:20 database, via the Reflex RFIMEX utility. See Reflex Technical Guide for instructions.
7. After the Server has been configured into your Pathway and Parameters have been included, the AGENT-JOBSLOTS server can then be started.

Note: If the Parameters in Reflex ADMIN / PARAMETERS facility are changed, then the Pathway Server AGENT-JOBSLOTS needs to be frozen, stopped and started.

The Server will only 'stop' when the next poll period occurs. If users wish to stop it immediately, then stop the Pathway Server process via TACL and also the DELAY process, which is specified in the AGENTJOB macro.

Spooler Monitoring - "JOBSLOTS"

EMS events

Example of the EMS events configured in the AGENTJOB routine is provided below. Users can change SSID, Event Number and Event Text if required.

- **Threshold 'broken' example**

```
07-12-20 15:41:02 \ITLTECH.$RLJS  INSIDER.51.0      005077 REFLEX 80:20 -
SPOOLAG - $SPLS-Spooler Job-Slots Check Started.
```

```
07-12-20 15:41:04 \ITLTECH.$RLJS *INSIDER.51.0    005075 REFLEX 80:20 -
SPOOLAG - $SPLS-Jobslots Over Reflex Threshold (430) 431 / 4095 = 10.52%
```

```
07-12-20 15:41:05 \ITLTECH.$RLJS  INSIDER.51.0      005079 REFLEX 80:20 -
SPOOLAG Next Check In 00005 Minutes.
```

The second event - 5075 - shows the following:

Reflex threshold value configured in SPOOLER-JOBS-THRESH parameter (**430**)

Actual number of jobs in the Spooler (**431**)

Reflex SPOOLER-JOBS-CONF parameter value, based on the system Spooler Job Configuration (**4095**)

10.52 % is calculating 431 as a percentage of the SPOOLER-JOBS-CONF value (**4095**).

- **Threshold 'normal' example**

When threshold is no longer breached, the following EMS events are issued:

```
07-12-20 15:46:07 \ITLTECH.$RLJS  INSIDER.51.0      005077 REFLEX 80:20 -
SPOOLAG - $SPLS-Spooler Job-Slots Check Started.
```

```
07-12-20 15:46:09 \ITLTECH.$RLJS  INSIDER.51.0    005080 REFLEX 80:20 -
SPOOLAG - $SPLS-Jobslots Under Reflex Threshold (430) 403 / 4095 = 9.84%
```

```
07-12-20 15:46:10 \ITLTECH.$RLJS  INSIDER.51.0      005079 REFLEX 80:20 -
SPOOLAG Next Check In 00005 Minutes.
```

The second event - 5080 - shows the following:

Reflex threshold value configured in SPOOLER-JOBS-THRESH parameter (**430**)

Actual number of jobs in the Spooler (**403**)

Reflex SPOOLER-JOBS-CONF parameter value, based on the system Spooler Job Configuration (**4095**)

9.84% is calculating 403 as a percentage of the SPOOLER-JOBS-CONF value (**4095**).

Spooler Monitoring - "JOBSLOTS"

EMS events

Example of the EMS events configured in the AGENTJOB routine is provided below. Users can change SSID, Event Number and Event Text if required.

- **If Pathway Server AGENT-JOBSLOTS is frozen / stopped, then the following EMS event is issued (after next poll).**

```
07-12-20 12:28:11 \ITLTECH.$RLJS  INSIDER.51.0      005078 REFLEX 80:20  
- SPOOLAG - Server AGENT-JOBSLOTS Stopped..
```

Note: Both the Server and the DELAY process configured in the AGENTJOB routine are stopped. (The server eventually dies after the next poll period – users will see the process as pending if they do a status, detail on the server; ultimately it stops when it next tries to poll).

- **If the 'PARACONF' file does not exist, then the following EMS event is issued:**

```
07-12-20 12:30:34 \ITLTECH.$RLJS *INSIDER.51.0      005078 Reflex 80:20  
SPOOLAG "$LIVE.RFLXDAT.PARACON" file does not exist ! Check contents of the  
AGENTJOB macro.
```

The filename specified in the AGENTJOB routine is included as the subject token and also included in the text message.

- **If the 'SPOOLS' file does not exist, then following EMS events are issued:**

```
07-12-20 12:32:53 \ITLTECH.$RLJS *INSIDER.51.0      005078 Reflex 80:20  
SPOOLAG "$LIVE.RFLXDAT.SPOOL" file does Not exist ! Check contents of the  
AGENTJOB macro.
```

The filename specified in the AGENTJOB routine is included as the subject token and also included in the text message.

TMF Monitoring - "AGENTTMF"

Product description

The "AGENT-TMF" Pathway Server allows for monitoring of the TMF environment: transaction status (including monitoring of 'long-running' and 'hung' transactions); tape status; auditdump status; etc.

Installation guide

The following Tandem files are supplied:

| | |
|-----------------|---|
| DUMPMASK | Edit file containing the mask of Audittrail dumps. The default is to assume that all audittrails are dumped. The use of the file is for configurations where some or all audittrails are not dumped and this file will prevent EMS events being generated for audittrails which are not dumped thus changing ICONS to RED. |
| RUNTMFA | Sample edit file to run in 'batch' mode for testing purposes. |
| TMFACONF | Pathway server – AGENT-TMF - configuration file. |
| TMFAGI | TMF Agent TAL object file. Used in AGENT-TMF Server. |

There are no Reflex 80:20 ADMIN PARAMETERS to be utilised. All parameters are configured within the Pathway Server.

The following AGENTTMF parameters are supplied:

| | |
|---------------------------------|--|
| TMF-MAX-TX-TIME | Maximum transaction time in minutes. The default is 60 minutes. This parameter overrides the settings of the TMF AUTOABORT parameter. |
| TMF-AUDITTRAIL-THRESHOLD | Percentage that an audit trail is allowed to be full. The default is 50%. |
| TMF-TAPES-THRESHOLD | Minimum number for scratch tapes. The default is 10. |
| POLL-INTERVAL | Interval in minutes, to poll TMF. The default is 30 minutes. |
| AUTOABORT-PERCENT | The percentage of the TMF autoabort value to use. The default is 80%. This is only valid if the Autoabort value is non zero and there is no TMF-MAX-TX-TIME parameter. |
| TMF-WAITING-AUDITTRAILS | The number of outstanding audit trail dumps identified before an alert is generated. The default is 1. |

TMF Monitoring - "AGENTTMF"

AGENT-TMF parameters (continued):

TMF-AGENT-MODE Can be set to PATHWAY or BATCH. **Used only in the 'RUNTMFA' file.**

TMF-SUPPRESS A mask to suppress the checking of various TMF aspects:-

| | | | | | | |
|---|---|---|---|---|---|------------------------------------|
| N | N | N | N | N | N | |
| | | | | | | _ Audittrails waiting to be dumped |
| | | | | | | _ Tapemedia |
| | | | | | | _ Datavols |
| | | | | | | _ Transactions |
| | | | | | | _ Auditdump |
| | | | | | | _ Audittrails |

Set any of these to "Y" to suppress the checking. The default is NNNNNN to check everything. **Used only in the 'TMFACONF' Server config file.**

Install the following files:

- DUMPMASK - ASCII (Tandem Code 101)
- RUNTMFA - ASCII (Tandem Code 101)
- TMFACONF - ASCII (Tandem Code 101)
- TMFAGI - BINARY (Tandem Code 100)

If required, modify the sample DUMP MASK file – 'DUMPMASK'.

TMF Monitoring - "AGENTTMF"

Configuration guide

'Stand alone' mode

Modify the RUNTMFA file to meet your requirements.

Either run it by itself, via TACL, or add it to the configuration of your Batch system.

The program can be invoked as a batch program where the interval would then be controlled by an external scheduler.

This method does have the drawback in that, as the program is started each time, it does not know about any previously set flags and events can be repeated which would not be the case when running as a Pathway server.

Sample RUNTMFA File – "OBEY RUNTMFA".

```
clear all
param TMF-MAX-TX-TIME           30
param TMF-AUDITTRAIL-THRESHOLD  5
param TMF-TAPES-THRESHOLD       5
param POLL-INTERVAL             15
param AUTOABORT-PERCENT         50
param TMF-WAITING-AUDITTRAILS   1
param TMF-AGENT-MODE            BATCH
assign dump-mask,<vol>.<subvol>.DUMPMASK
RUN TMFAGI / NAME <pid> /
```

Check EMS logs for output.

TMF Monitoring - "AGENTTMF"

EMS events

Some example EMS events issued by AGENT-TMF server are provided below.

Full list of EMS event ranges are provided later on.

- **Subject id** \$TMFA (This is based on the Pathway Server process name)
 - **SSID** INSIDER.200.1
- ```

\INSIDER 255,255 23-05-2003 11:59:53 INSIDER^200^1 0111
 $TMFA TMF Agent: Audittrail MAT is over threshold:current usage
 = 16% threshold = 5% \INSIDER.$TMFA:79979389 01 0305 0
\INSIDER 255,255 23-05-2003 11:59:53 INSIDER^200^1 0109
 $TMFA TMF Agent: AUDITDUMP for audittrail MAT disabled
 \INSIDER.$TMFA:79979389 01 0305 0
\INSIDER 255,255 23-05-2003 11:59:54 INSIDER^200^1 0115
 $TMFATMF Agent: Only 009 scratch tapes left
 \INSIDER.$TMFA:79979389 01 0305 0

```

The full range of EMS events issued by the TMFAGI program are provided below (All utilise SSID value - INSIDER.200.1, with subject id being based on the Pathway Server process name):

### TMF Events

| <b>Event details</b>                                                                                                           | <b>Event Number</b> |
|--------------------------------------------------------------------------------------------------------------------------------|---------------------|
| TMF RUNNING                                                                                                                    | <b>(100)</b>        |
| Text: TMF Agent: TMF is running again - monitoring resumed                                                                     |                     |
| TMF NOT RUNNING                                                                                                                | <b>(101)</b>        |
| Text: TMF Agent: TMF is not running - monitoring suspended                                                                     |                     |
| NO HUNG TRANSACTION                                                                                                            | <b>(102)</b>        |
| Text: TMF Agent: There are no longer any hung transactions                                                                     |                     |
| HUNG TRANSACTION                                                                                                               | <b>(103)</b>        |
| Text: TMF Agent: There is a transaction which is hung - investigate                                                            |                     |
| OR                                                                                                                             |                     |
| Text: TMF Agent detected hung transaction. ID <transid>, Process <process id> , Program no longer running                      |                     |
| OR                                                                                                                             |                     |
| Text: TMF Agent detected hung transaction. ID <transid>, Process <process id> , Guardian Program Filename <program filename>   |                     |
| OR                                                                                                                             |                     |
| Text: TMF Agent detected hung transaction. ID <transid>, Process <process id> , OSS Pathname <pathname>, ,No Arguments         |                     |
| OR                                                                                                                             |                     |
| Text: TMF Agent detected hung transaction. ID <transid>, Process <process id> , OSS Pathname <pathname>, Arguments <arguments> |                     |

## TMF Monitoring - "AGENTTMF"

### TMF Events (contd.)

| <b>Event details</b>                                                                    | <b>Event Number</b> |
|-----------------------------------------------------------------------------------------|---------------------|
| BEGINTRANS OK                                                                           | <b>(104)</b>        |
| Text: TMF Agent: Begin Transaction re-enabled                                           |                     |
| BEGIN TRANS DISABLED                                                                    | <b>(105)</b>        |
| Text: TMF Agent: Begin Transaction disabled                                             |                     |
| DISK STARTED                                                                            | <b>(106)</b>        |
| Text: TMF Agent: All DATAVOLS are now in state STARTED                                  |                     |
| DISK NOT STARTED                                                                        | <b>(107)</b>        |
| Text: TMF Agent: <volume name> is in state <state>                                      |                     |
| Where <state> can be one of:                                                            |                     |
| UNCONFIGURED                                                                            |                     |
| ADDING                                                                                  |                     |
| STARTING                                                                                |                     |
| STARTUPBEGUN                                                                            |                     |
| AWAITTRANSRESOLVE                                                                       |                     |
| QUEUEDFORRECOVERY                                                                       |                     |
| RECOVERING                                                                              |                     |
| STARTUPCOMPLETING                                                                       |                     |
| NOTSTARTED                                                                              |                     |
| DOWN                                                                                    |                     |
| DOWN CLEAN                                                                              |                     |
| DOWN DIRTY                                                                              |                     |
| SHUTTINGDOWN                                                                            |                     |
| DISABLING                                                                               |                     |
| DISABLED                                                                                |                     |
| DISABLED CLEAN                                                                          |                     |
| DISABLED DIRTY                                                                          |                     |
| WRONGDISKMOUNTED                                                                        |                     |
| UNKNOWN                                                                                 |                     |
| AUDITDUMP ENABLED                                                                       | <b>(108)</b>        |
| Text: TMF Agent: AUDITDUMP for audittrail xx enabled                                    |                     |
| AUDITDUMP DISABLED                                                                      | <b>(109)</b>        |
| Text: TMF Agent: AUDITDUMP for audittrail xx disabled                                   |                     |
| AUDITTRAIL UNDER THRESHOLD                                                              | <b>(110)</b>        |
| Text: TMF Agent: Audittrail xx is under threshold: current usage = xxx% threshold = xx% |                     |
| AUDITTRAIL OVER THRESHOLD                                                               | <b>(111)</b>        |
| Text: TMF Agent: Audittrail xx is over threshold: current usage = xxx% threshold = xx%  |                     |
| AUDITTRAIL NO LONGER USING OVERFLOW                                                     | <b>(112)</b>        |
| Text: TMF Agent: Audittrail xx is no longer using Overflow                              |                     |
| AUDITTRAIL USING OVERFLOW                                                               | <b>(113)</b>        |
| Text: TMF Agent: Audittrail xx is using Overflow                                        |                     |

## TMF Monitoring - "AGENTTMF"

### TMF Events (contd.)

| <b>Event details</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Event Number</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| nnn SCRATCH TAPES AVAILABLE<br>Text: TMF Agent: Now xxx scratch tapes available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>(114)</b>        |
| ONLY nnn SCRATCH TAPES LEFT - WARNING<br>Text: TMF Agent: Only xxx scratch tapes left                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>(115)</b>        |
| ONLY nnn SCRATCH TAPES LEFT - CRITICAL<br>Text: TMF Agent: Only xxx scratch tapes left                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>(116)</b>        |
| 'LONG RUNNING' TRANSACTION IDENTIFIED<br>Text: TMF Agent detected long running transaction. ID <transid>, Process <process id><br>, Program no longer running<br>OR<br>Text: TMF Agent detected long running transaction. ID <transid>, Process <process id><br>, Guardian Program Filename <program filename><br>OR<br>Text: TMF Agent detected long running transaction. ID <transid>, Process <process id><br>, OSS Pathname <pathname>, ,No Arguments<br>OR<br>Text: TMF Agent detected long running transaction. ID <transid>, Process <process id><br>, OSS Pathname <pathname>, Arguments <arguments> | <b>(117)</b>        |
| NO LONGER ANY 'LONG RUNNING' TRANSACTIONS<br>Text: TMF Agent: There are no longer any long running transactions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>(118)</b>        |
| AUDITTRAILS WAITING TO BE DUMPED<br>Text: TMF Agent: nnnn Audittrails are waiting to be dumped.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>(119)</b>        |
| ABORTING TRANSACTIONS<br>Text: TMF Agent detected aborting transactions. ID <transid>, Process <process id>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>(120)</b>        |
| AUDITTRAILS BACK TO NOMINAL LEVEL<br>Text: TMF Agent: Audittrails waiting to be dumped are back to nominal level of nnnn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>(121)</b>        |

## TMF Monitoring - "AGENTTMF"

### Parameter Events

| Event details                                                                                                                      | Event Number |
|------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Invalid TMF-TAPES-THRESHOLD Parameter<br>Text: TMF Agent: Invalid TMF-TAPES-THRESHOLD Parameter: <value> Must be between 1 and 500 | <b>(200)</b> |
| Invalid TMF-AUDITTRAIL-THRESHOLD<br>Text: TMF Agent: Invalid TMF-AUDITTRAIL-THRESHOLD Parameter: <value> Must be between 1 and 99  | <b>(201)</b> |
| Invalid TMF-MAX-TX-TIME Parameter<br>Text: TMF Agent: Invalid TMF-MAX-TX-TIME Parameter: <value> Must be between 1 and 357913"     | <b>(202)</b> |
| Invalid POLL-INTERVAL Parameter<br>Text: TMF Agent: Invalid POLL-INTERVAL Parameter: <value> Must be between 1 and 120             | <b>(203)</b> |
| Invalid AUTOABORT-PERCENT Parameter<br>Text: TMF Agent: Invalid AUTOABORT-PERCENT Parameter: <value> Must be between 1 and 99      | <b>(204)</b> |

### DUMP MASK File Events

| Event details                                                                                                     | Event Number |
|-------------------------------------------------------------------------------------------------------------------|--------------|
| DUMP MASK File <filename> does not exist<br>Text: TMF Agent: DUMP MASK File <filename> does not exist             | <b>(300)</b> |
| DUMP MASK File error <error> on <filename><br>Text: TMF Agent: DUMP MASK File error <error> on <filename>         | <b>(301)</b> |
| DUMP MASK Open error <error> on <filename><br>Text: TMF Agent: DUMP MASK Open error <error> on <filename>         | <b>(302)</b> |
| DUMP MASK Position error <error> on <filename><br>Text: TMF Agent: DUMP MASK Position error <error> on <filename> | <b>(303)</b> |
| DUMP MASK Read error <error> on <filename><br>Text: TMF Agent: DUMP MASK Read error <error> on <filename>         | <b>(304)</b> |

### SPI Events

| Event details                                                                                                              | Event Number |
|----------------------------------------------------------------------------------------------------------------------------|--------------|
| SPI ERROR<br>Text: TMF Agent: SPI error Command: <command>, Procedure: <procedure>, SPI Token: <token>, Error: <spi^error> | <b>(999)</b> |

## RDF Monitoring - "AGENTRDF"

### Product description

The 'AGENTRDF' macro is used to poll RDF (STATUS VOLUME) and check status of the UPDATER process, or processes. EMS alerts will be issued for the following scenarios:

- AGENTRDF started
- UPDATER processes falling behind
- UPDATER processes up to date
- UPDATER processes have stopped
- UPDATER processes have restarted
- RDF not responding
- Pathway Server AGENT-RDF stopped
- Pathway Server error

An UPDATER prefix needs to be specified in the AGENTRDF macro, to match your environment, e.g. \$UP. This value will be used to check status of ALL RDF UPDATER processes beginning with \$UP prefix.

### Installation guide

The following files are utilised:

|                 |                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RDFSERVR</b> | Pathway Server 'AGENT-RDF' configuration file, for installing into your Reflex 80:20 Pathway environment.<br><br><b>Note:</b> START SERVER command has been commented out; uncomment when server is required to run.                                                                                                                                                                             |
| <b>RDFCHEK</b>  | Edit file – performs a LOAD / KEEP 1 / AGENTRDF command, followed by RUN_AGENT_RDF.<br><br>RDFCHECK is executed as the 'IN' file, within AGENT-RDF Pathway Server.                                                                                                                                                                                                                               |
| <b>AGENTRDF</b> | RDF Status Check <b>TACL routine</b> , called in via the above RDFCHEK file. Various parameters / values require user customisation.                                                                                                                                                                                                                                                             |
| <b>EMSMSG</b>   | EMS Event Generator macro.<br><br>Example syntax for EMSMSG is (configured in the 'AGENTRDF' macro):<br>RUN \$D.ITLTKIT.EMSMSG INSIDER.1.0, 00100, RDFAGENT, , REFLEX 80:20 – RDFAGENT AGENT-RDF - Error - [errortext].<br><br>The following values can be changed:                                                                                                                              |
|                 | <ul style="list-style-type: none"> <li>• \$D – Volume location for EMSMSG</li> <li>• ITLTKIT – Subvol location for EMSMSG</li> <li>• INSIDER – Event owner id</li> <li>• 1.0 – Version id</li> <li>• 00100 – Event Number</li> <li>• C – Critical (If not critical, then specify,,)</li> <li>• RDFAGENT – Subject token</li> <li>• "REFLEX 80:20 - RDFAGENT AGENT-RDF.." - Event text</li> </ul> |

## RDF Monitoring - "AGENTRDF"

Typical installation would be:

1. Download the following files, using a suitable transfer protocol e.g. FTP and specifying 'ASCII' option (all are Tandem EDIT (101) type files):
  - RDFSERVER
  - RDFCHEK
  - AGENTRDF
  - EMSMSG
2. Modify the following files as follows:
  - RDFSERVER                      Change values to meet user requirements
  - AGENTRDF                        As above - see header of macro for further information
  - RDFCHEK                         Ensure this file is located in same subvol as AGENTRDF

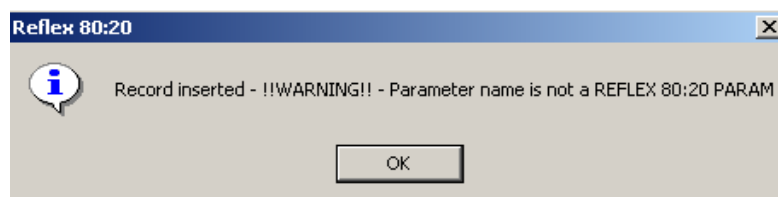
### Configuration guide

The following Reflex 80:20 PARAMETERS are configured in the Reflex ADMIN module:

|                        |                                                                       |
|------------------------|-----------------------------------------------------------------------|
| <b>RDF-INTERVAL</b>    | Value in minutes for AGENT-RDF to poll RDF<br>e.g. 5 = 5 minutes      |
| <b>RDF-TIME-THRESH</b> | Value in seconds for RDF Updater to fall behind<br>e.g. 3600 = 1 hour |

1. In the Reflex 80:20 GUI, add the above PARAMETERS via the ADMIN module. See information above for values and descriptions.
  - RDF-INTERVAL
  - RDF-TIME-THRESH

Upon insertion of each parameter, users will be provided with the following prompt, which can be ignored:



2. In the Reflex 80:20 PWCONF file, include contents of the 'RDFSERVER' server configuration file.

Optionally, the 'AGENT-RDF' server can be loaded into the current Reflex 80:20 Pathway via Pathcom command: Obey RDFSERVER.

## RDF Monitoring - "AGENTRDF"

### EMS events

Examples of EMS events issued by AGENT-RDF are provided below. Users can specify their own SSID and Event numbers in the AGENTRDF macro:

#### A. Starting Pathway Server AGENT-RDF:

```
14:25:46 26-02-2004 INSIDER^1^0 0800 RDFAGENT
REFLEX 80:20 - RDFAGENT - Started (Using RDF-TIME-THRESH
Param: 10 Seconds) 00 0065 90,10 \INSIDER
\INSIDER.$DSDF:335213693 0
```

#### B. Pathway Server AGENT-RDF STOPPED:

```
14:24:59 26-02-2004 INSIDER^1^0 0200 RDFAGENT REFLEX
80:20 - RDFAGENT - Server AGENT-RDF Stopped.. 01 0094
90,10 \INSIDER \INSIDER.$DSDF:334610813 0
```

#### C. RDF UPDATERS falling behind:

In this example, two **0400** events have been issued; one for each updater process.

```
11:18:23 25-02-2004 INSIDER^1^0 0400 $UP01 REFLEX 80:20 -
RDFAGENT - RDF Updater Is Behind For $D By 0: 9:29
Mins:Seconds 00 0117 90,10 \INSIDER \INSIDER.$DSDF:334595709
0
```

```
11:18:26 25-02-2004 INSIDER^1^0 0400 $UP02 REFLEX 80:20 -
RDFAGENT - RDF Updater Is Behind For $REL By 0: 0:13
Mins:Seconds 00 0117 90,10 \INSIDER \INSIDER.$DSDF:334595709
0
```

#### D. RDF UPDATERS Up To Date:

```
11:30:00 25-02-2004 INSIDER^1^0 0500 $UP01 REFLEX 80:20 -
RDFAGENT - RDF Updater Is Up To Date For $D. 00 0117 90,10
\INSIDER \INSIDER.$DSDF:334595709 0
```

#### E. RDF UPDATERS have stopped, e.g. in response to STOP UPDATE command:

```
11:43:54 25-02-2004 INSIDER^1^0 0910 $UP01 REFLEX 80:20 -
RDFAGENT - RDF UPDATE HAS STOPPED - UPDATER $UP01 00 0117
90,10 \INSIDER \INSIDER.$DSDF:334595709 0
```

```
11:43:55 25-02-2004 INSIDER^1^0 0910 $UP02 REFLEX 80:20 -
RDFAGENT - RDF UPDATE HAS STOPPED - UPDATER $UP02 00 0117
90,10 \INSIDER \INSIDER.$DSDF:334595709 0
```

#### F. RDF UPDATERS have started, e.g. in response to START UPDATE command:

```
11:48:23 25-02-2004 INSIDER^1^0 0920 $UP01 REFLEX 80:20 -
RDFAGENT - RDF UPDATE HAS RESTARTED - UPDATER $UP01 00 0117
90,10 \INSIDER \INSIDER.$DSDF:334595709 0
```

```
11:48:25 25-02-2004 INSIDER^1^0 0920 $UP02 REFLEX 80:20 -
RDFAGENT - RDF UPDATE HAS RESTARTED - UPDATER $UP02 00 0117
90,10 \INSIDER \INSIDER.$DSDF:334595709 0
```

#### G. RDF not responding, e.g. if Updater process is suspended:

```
14:07:18 26-02-2004 INSIDER^1^0 0900 RDFAGENT REFLEX 80:20 -
RDFAGENT - RDF NOT RESPONDING !!! 01 0094 90,10
\INSIDER \INSIDER.$DSDF:334610813 0
```

## RDF Monitoring - "AGENTRDF"

### H. Process Name in use – the DELAY process name specified in the AGENTRDF macro is already in use:

```
14:42:56 26-02-2004 INSIDER^1^0 0100 RDFAGENT REFLEX
80:20 - RDFAGENT - AGENT-RDF - Error - *ERROR* Process name
error: File in use. 01 0052 90,10 \INSIDER
 \INSIDER.$DSDF:335221117 0
```

### Operation

After activating the AGENT-RDF server, a DELAY process is started, which then provides the polling period. The DELAY process name is configured in the AGENTRDF macro, e.g.:

```
DELAY / PRI 4, TERM $AVT0 , NAME $RFDE / [rd1] mins == RDF-INTERVAL
```

If the AGENT-RDF server is frozen and then stopped, the underlying server and DELAY processes will not stop, until the next poll is complete.

Pathcom command: STATUS AGENT-RDF, DETAIL will display the server process being in a 'pending' state.

Both the server process and the delay process can be stopped manually if required.

## Tape Mount Monitoring - "MOUNTMON"

### Product description

This is a TAL program for Reflex to provide alerts against any outstanding tape mounts. It is designed to run as a Pathway server (MOUNT-MONITOR).

### Installation guide

The following Tandem files are supplied:

|                 |                                                                                                                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PATHADD</b>  | Pathway Server configuration file – MOUNT-MONITOR.                                                                                                                                                                                                                    |
| <b>MOUNTMON</b> | TAL object code, used within the above Pathway server.                                                                                                                                                                                                                |
| <b>MMONFILT</b> | MMONFILT filter object file is used to filter out all EMS events other than TANDEM.4.0 (tape events).<br><br>This will encompass all tape mount requests (ANSI, TMF, IBM etc.); all tape mount cancellations (both automatic and manual) and all tape mounted events. |

The following Reflex 80:20 PARAMETERS are utilised; configured in the Reflex ADMIN module:

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MMON-POLL-TIME</b>       | <p>The MMON-POLL-TIME parameter is used to determine how often MOUNTMON checks its record of outstanding mount requests.</p> <p>The parameter value should be specified in seconds. If the parameter is not configured in the Reflex GUI, then a default value of 120 seconds will be assumed.</p> <p>The MMON-POLL-TIME parameter should be added to the ADMIN / PARAMETERS module via the Reflex GUI.</p>                                                                                                  |
| <b>MMON-VUL-POLL-COUNT</b>  | <p>This parameter is used to determine the amount of time a tape mount request may be outstanding before MOUNTMON starts to generate VULNERABLE EMS events.</p> <p>This value, is used in conjunction with MMON-POLL-TIME as follows:</p> <p><i>MMON-POLL-TIME x MMON-VUL-POLL-COUNT</i></p> <p>For example, if MMON-POLL-TIME is set to 120 seconds and MMON-VUL-POLL-COUNT is set to 5, then if after 10 minutes (120 x 5) a tape mount request is still outstanding a VULNERABLE EMS alert is issued.</p> |
| <b>MMON-CRIT-POLL-COUNT</b> | <p>This parameter is used to determine the amount of time a tape mount request may be outstanding before MOUNTMON starts to generate CRITICAL EMS events.</p> <p>This value is used in conjunction with MMON-POLL-TIME as follows:</p> <p><i>MMON-POLL-TIME x MMON-CRIT-POLL-COUNT</i></p> <p>For example, if MMON-POLL-TIME is set to 120 seconds and MMON-CRIT-POLL-COUNT is set to 10, then if after 20 minutes (120 x 10) a tape mount request is still outstanding a CRITICAL EMS alert is issued.</p>  |

## Tape Mount Monitoring - "MOUNTMON"

Typical installation would be:

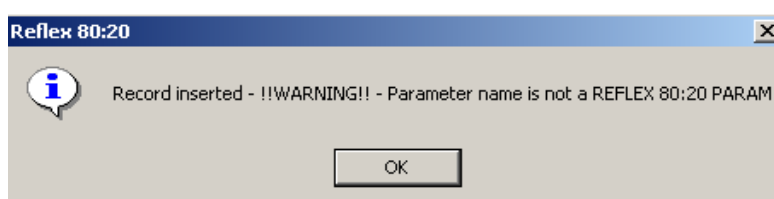
1. Download the following files:
  - **PATHADD** ASCII (Tandem Code 101)
  - **MOUNTMON** Binary (Tandem Code 100)
  - **MMONFILT** Binary (Tandem Code 100)
2. EDIT / TEDIT the following file:
  - **PATHADD** Change values to meet user requirements

### Configuration guide

1. The following Reflex 80:20 PARAMETERS are utilised; configured within the Reflex ADMIN module:

|                             |                                                                                                                                                                                                                                               |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MMON-POLL-TIME</b>       | The parameter value should be specified in seconds. Recommended 'default' value is 120 seconds.                                                                                                                                               |
| <b>MMON-VUL-POLL-COUNT</b>  | Specify a value in which to monitor for outstanding tape requests. This will be used to calculate how long a tape request has been outstanding, based on $MMON-POLL-TIME \times MMON-VUL-POLL-COUNT$ . A vulnerable EMS event will be issued. |
| <b>MMON-CRIT-POLL-COUNT</b> | Specify a value in which to monitor for outstanding tape requests. This will be used to calculate how long a tape request has been outstanding, based on $MMON-POLL-TIME \times MMON-CRIT-POLL-COUNT$ . A critical EMS event will be issued.  |

Upon insertion of the parameter, users will be provided with the following prompt, which can be ignored:



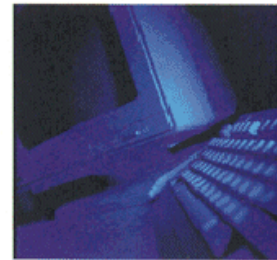
2. EDIT / TEDIT the PATHADD server configuration file to meet your requirements.
3. In the Reflex 80:20 PWCONF file, include contents of the 'PATHADD' server configuration file.  
 Additionally, the 'MOUNT-MONITOR' server can be loaded into the current Reflex 80:20 Pathway via "Obey PATHADD".
4. Ensure your MMONFILT filter file is in the same sub-volume as the MOUNTMON object code.

## Tape Mount Monitoring - "MOUNTMON"

### EMS events

The following EMS events are issued by the MOUNTMON object:

| <b><u>SSID</u></b> | <b><u>Event</u></b> |                                                                                                                                                                  |
|--------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ITLTASK.4.0</b> | <b>0</b>            | These are information events that are generated by MOUNTMON at start-up and during mount request checks as and when a mount request has been detected.           |
| <b>ITLTASK.4.0</b> | <b>1</b>            | This event is generated when a mount request has been outstanding longer than a period of time determined by multiplying MMON-VUL-POLL-COUNT by MMON-POLL-TIME.  |
| <b>ITLTASK.4.0</b> | <b>2</b>            | This event is generated when a mount request has been outstanding longer than a period of time determined by multiplying MMON-CRIT-POLL-COUNT by MMON-POLL-TIME. |
| <b>ITLTASK.4.0</b> | <b>3</b>            | This event is generated when a mount request is satisfied and removed from the internal monitoring stack.                                                        |



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