NonStop NET/MASTER Tips and Techniques
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Introduction
This is an ongoing column with NonStop NET/MASTER tips and techniques.
Each column is also accessible from
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Biography
John New is a technical writer. He has written and updated various
Tandem manuals. He currently writes hard-copy, online, and web documents
for a variety of software products.

NonStop NET/MASTER Tips and Techniques
Some Initial RMS Customization Tips

This column presents some tips on how to initially customize NonStop
NET/MASTER Rule Management Services (RMS) after installation.

Background Information

RMS is a NonStop NET/MASTER Management Services (MS) application. RMS
uses rules to perform its functions, such as automating operations. A
rule, which is triggered by criteria such as a certain message, is a set
of instructions to RMS to perform certain tasks. A ruleset is a set, or
collection, of rules. RMS is distributed with two standard rulesets
(BASERULE and STATSCAP). An active message handler runs with a ruleset,
and processes messages according to the rules in the ruleset.

After you install RMS and if you intend to use the BASERULE ruleset, it
is recommended that you customize three rules to suit the requirements
of your system: ZCPUDOWN, ZCPUUP, and ZTACLFAIL.

The ZCPUDOWN rule is triggered by event message 101 from the CPU
subsystem. This rule automatically dumps the memory of a failed CPU and
reloads the CPU. If the reload fails, RMS retries the reload every 60
seconds. The ZCPUUP rule is triggered by event message 100 from the CPU
subsystem. This rule automatically rebalances CPUs after reloading a
failed CPU. The ZTACLFAIL rule is triggered by event message 1 from the
TACL subsystem. This rule restarts a TACL process that was stopped
because of I/O errors.

Before customizing the BASERULE ruleset, it is prudent to first copy the
ruleset, then make changes to the new ruleset.

Copying the BASERULE Ruleset

After logging on to NonStop NET/MASTER MS, follow these steps to copy
the BASERULE ruleset:

1.   From the NonStop NET/MASTER MS Primary Menu, type R in the Select
      Option field and press the Enter key. The RMS : Primary Menu
      appears.
2.   Type 5 in the Select Option field and press the Enter key. The
      RMS : Ruleset Maintenance panel appears.
3.   Type 2 in the Select Option field, type BASERULE in the Ruleset
      field, and press the Enter key. The RMS : Ruleset Copy panel
      appears.
4.   Type the name of the new ruleset (for example, BASECUST) in the
      Copy from BASERULE to field and press the F3 function key.
      Confirmation messages appear as the ruleset is copied. When
      finished, the RMS : Ruleset Maintenance panel reappears.

Customizing the ZCPUDOWN Rule

By default, the ZCPUDOWN rule uses the $SYSTEM volume for CPU dump
files. This volume name is used by default because every Tandem system
has a volume called $SYSTEM.

It is a good idea to customize the ZCPUDOWN rule to use another volume
for dump files or to create no dump files for at least three reasons.
First, the performance of $SYSTEM is critical for production systems;
using $SYSTEM for dump files may severely degrade system performance.
Second, many program files are usually located on $SYSTEM (for example,
FUP and TACL); these programs may require swap space, but if $SYSTEM is
filled with dump files, space may not be available; as a result,
applications may fail. Third, there may not be enough space for the
dump file itself; the dump file could be as large as the memory of the
CPU, for example, up to 128MB.

There are two customization alternatives for the ZCPUDOWN rule in
relation to CPU dump files. First, you can change the volume on which
CPU dumps reside. Second, you can prevent the rule from attempting to
create a CPU dump before attempting to reload the CPU.

After logging on to NonStop NET/MASTER MS, follow these steps to
customize ZCPUDOWN:

1.   From the NonStop NET/MASTER MS Primary Menu, type R in the Select
      Option field and press the Enter key. The RMS : Primary Menu
      appears.

2.   Type 6 in the Select Option field and press the Enter key. The
      RMS : Rule Maintenance panel appears.

3.   Type 1 in the Select Option field, type BASECUST in the Ruleset
      field, and press the Enter key. The RMS : Message Action Rules
      Maintenance panel appears.

4.   Type 2 in the Select Option field and press the Enter key.

5.   Use the Tab key to move the cursor next to ZCPUDOWN, type S to
      select the rule, and press the Enter key.

6.   Press the F8 (PageDown) function key four times. The RMS : System
      Action panel appears.

7.   Press the Tab key to move the cursor to the NCL Proc Name field,
      then do one of the following:

a. To change the dump volume from $SYSTEM, replace $SYSTEM with the new name, $<new-dump-vol> (where <new-dump-vol> represents a name of your choosing). The field should read ZRMSCPUN CPU &WORD5 $<new-dump-vol>;

b. To prevent the rule from attempting to create a dump volume, remove $SYSTEM. The field should read ZRMSCPUN CPU &WORD5.

Customizing the ZCPUUP Rule

The ZCPUUP rule uses the following command, which is specified in the Command Text field of the RMS : System Action panel, to rebalance CPUs after reloading a failed CPU:

        OPSYS SEND TACL PUP /IN $SYSTEM.STARTUP.PUPPRI/

The IN file $SYSTEM.STARTUP.PUPPRI is not distributed with RMS. Therefore, there are at least two ways that you can customize the ZCPUUP rule to suit your system requirements.

First, you can create your own IN file with PUP PRIMARY commands that optimally rebalance CPUs on your own system. This file could contain commands such as the following:

        PRIMARY $SYSTEM, 0
        PRIMARY $DATA, 0
        PRIMARY $DATA1, 1
        PRIMARY $DATA2, 1
        PRIMARY $DATA3, 2
        PRIMARY $DATA4, 2

Second, you can change the command issued by the rule from an OPSYS command to, for example, a TACL OBEY command to execute an obey file called MYFILE. The obey file could contain commands in addition to PUP PRIMARY commands that, for example, execute a PUP LISTDEV command, run a TACL macro to check that certain applications are still running, rebalance application software, or restart a failed application.

After logging on to NonStop NET/MASTER MS, follow the steps described above for "Customizing the ZCPUDOWN Rule," except for the following, to customize ZCPUUP:

5. Use the Tab key to move the cursor next to ZCPUUP, type S to select the rule, and press the Enter key.

7. Press the Tab key to move the cursor to the Command Text field, then do one of the following:

        a. If you have created an IN file with PUP PRIMARY commands, replace $SYSTEM.STARTUP.PUPPRI with the name of the file.

        b. If you have created a TACL obey file, replace $SYSTEM.STARTUP.PUPPRI with the TACL command, for example, OPSYS SEND TACL OBEY MYFILE.

Customizing the ZTACLFAIL Rule

The ZTACLFAIL rule uses the following command, which is specified in the NCL Proc Name field of the RMS : System Action panel, to restart the failed TACL process:

        ZRMSTCLN $SYSTEM.STARTUP.STRTTACL

The file $SYSTEM.STARTUP.STRTTACL is not distributed with RMS. Therefore, to customize this rule, you can either create a TACL startup file or specify the name of an existing TACL startup file; in either case, you would specify the name of the file in the NCL Proc Name field. This file could contain commands such as the following:

```
TACL /IN $ATPB.#TERM7, OUT ATPB.#TERM7, &
      NAME $TCB7, NOWAIT, PRI 150, CPU 0, &
      SWAP $DATA1/
TACL /IN $ATPB.#TERM8, OUT ATPB.#TERM8, &
      NAME $TCB8, NOWAIT, PRI 150, CPU 0, &
      SWAP $DATA1/
```

After logging on to NonStop NET/MASTER MS, follow the steps described above for "Customizing the ZCPUDOWN Rule," except for the following, to customize ZTACLFAIL:

5.   Use the Tab key to move the cursor next to ZTACLFAIL, type S to
       select the rule, and press the Enter key.

7.   Press the Tab key to move the cursor to the NCL Proc Name field,
       then replace $SYSTEM.STARTUP.STRTTACL with the name of the correct
       TACL startup file.