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 http://www.greshamsoftwarelabs.com.au/ (Gresham Software Labs). Please send all comments and suggestions to John New at jnew@greshamsoftwarelabs.com.au.

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.

Easy Ways to Change Message Appearance

NonStop NET/MASTER provides numerous options to filter and process Event Management Service (EMS) messages, messages from remote systems, and messages generated locally. Filtering means detecting messages that match criteria you specify and either deleting them or letting them flow through to their usual destination. Processing includes detecting messages that match your criteria and changing various attributes, such as message appearance, based on that criteria.

This article describes ways you can change message color, highlighting, and intensity using commands, NCL, and Rule Management Services (RMS). Changing these message attributes can help you to more easily distinguish between different types of messages, which in turn can help you to more rapidly solve problems reported by those messages.

Color, Highlighting, and Intensity Options

NonStop NET/MASTER provides considerable flexibility for you to change message color, highlighting, and intensity using commands and NCL constructs. For example, where commands and constructs allow, you can change:

- Message text color and background text color from none to blue, green, pink, red, turquoise, white, or yellow

- Highlighting from none to blinking, reverse video, or underlined

- Intensity from normal to low or high

Using Commands to Change Message Appearance

Various commands let you change message color, highlighting, and intensity. You can enter commands from the Operator Control Services (OCS) command input line or from an NCL procedure that you can write yourself.

- The SYSPARMS EMSBKGCOLOR, SYSPARMS EMSCOLOR and SYSPARMS EMSHLITE commands let you change the color and highlighting of all EMS messages that arrive at a NonStop NET/MASTER system.

  For example, the following combination of SYSPARMS commands means that all EMS messages appear with a blue background, white text, and in reverse video:

  SYSPARMS EMSBKGCOLOR=BLUE
  SYSPARMS EMSCOLOR=WHITE
  SYSPARMS EMSHLITE=REVERSE

- When you use the LINK DEFINE command to define a link between a local and remote NonStop NET/MASTER system, you can use the BKGCOLOR, COLOR, and HLITE keywords to specify the color and highlighting in which to display messages from the remote system.

  For example, defining a link with the following commands means that all messages from the remote system appear with a turquoise background, pink text, and blinking:

  LINK DEFINE=LINK1 BKGCOLOR=TURQUOISE COLOR=PINK HLITE=BLINK

- When you log on to a remote system using the SIGNON command, you can use the BKGCOLOR, COLOR, and HLITE keywords to override the color and highlighting options specified by the LINK DEFINE command for your remote logon session:

  For example, you could use the following command to override default remote message appearance and display messages with a yellow background, red text, and in reverse video:

  SIGNON LINK1 BKGCOLOR=YELLOW COLOR=RED HLITE=REVERSE

- When you are using OCS, messages typically scroll by on your terminal console. You can change the color, highlighting, and intensity of message text by either writing and installing a MSGPROC NCL procedure or by using RMS. (You can use the PROFILE command to change other aspects of your OCS profile.)

Using NCL to Change Message Appearance

Two useful NCL constructs (among others) used to change message appearance are EMSCONT (used only in the EMSPROC NCL procedure) and MSGCONT (used only in the MSGPROC NCL procedure).

The purpose of EMSPROC is to intercept, filter, and process all EMS messages received by NonStop NET/MASTER from the associated EMS distributor. Only one EMSPROC executes in a system; therefore, it has a global affect on EMS message flow.

The purpose of MSGPROC is to intercept, filter, and process all messages destined for the OCS window (or operator's console) from which the MSGPROC was started. Because MSGPROC changes message appearance just before a message is displayed on an operator's console, it has only a local affect on message appearance. Only the operator at the console sees the changes in the message; the same message may be displayed differently at other consoles.

There may be many different MSGPROCs running concurrently. Every user, or group of users, or type of user may have their own custom MSGPROC.

One use for MSGPROC is to filter out all messages targetted for an operator's console except those originating from a specific subsystem. This allows you to set up consoles for individual subsystems (tape, batch, and so on). The tape operator, for example, may log on to a specific terminal. If an appropriate MSGPROC is started automatically when the tape operator enters OCS, only tape messages and solicited messages (such as commands and responses) will be displayed at that operator's console.

The following example shows an EMSPROC (called EMSFILT) that filters out unwanted events, in this case EMS messages EMS0512 and GIO0100. All other EMS messages continue unchanged.

```
emsfilt: PROCEDURE
   /* EMSPROC to suppress unwanted events */
   DO FOREVER
      /* Read next EMS message */
      EMSREAD VARS=(&msgid)
      SELECT &msgid STRICT
         WHEN EMS0512
            EMSDEL
         WHEN GIO0100
            EMSDEL
         OTHERWISE
            EMSCONT
      END /*select*/
   END /*do forever */
END emsfilt
```

Having filtered out unwanted EMS event messages, the following example shows a MSGPROC (called TAPEMSGP) that changes tape message color to white, deletes all other EMS messages destined for the operator's console from which the MSGPROC was started, and leaves other messages unchanged. To determine whether a message is from the TAPE subsystem, it looks for a subsystem name of TAPE in the SPI token ZSPI_TKN_SSID.

```
tapemsgp: PROCEDURE
   /* MSGPROC to display TAPE events and NNM messages only */
   DO FOREVER
      /* Read next message */
      MSGREAD
      IF &$msg.msgattr.class.emsmsg == 1 THEN
         DO
         /* Get the owner and subsystem name from the SSID */
         PARSE VARS=(&owner,&subsys),
            DELIM='.' DATA=&$msg.spi.tandem.zspi_tkn_ssid
         IF &owner == TANDEM AND &subsys == TAPE THEN
            MSGCONT COLOR=WHITE
         ELSE
            MSGDEL
         END /* do */
      ELSE
         MSGCONT
   END /*do forever */
END tapemsgp
```

To have this MSGPROC start automatically when the tape operator enters OCS, the system administrator would specify the MSGPROC name (TAPEMSGP) in the Message Procedure field in the operator's user ID record (the field is on page 5, OCS Details).

Using RMS to Change Message Appearance

Using RMS, you can easily change message appearance without using commands or NCL. RMS lets you define rulesets with message actions rules that detect messages and, among other things, alter the appearance of those messages according to criteria you define.

To create a ruleset (called TAPEMSGR) with two rules (TAPECOLOR and NOEMSMSGS) that does the same job as the MSGPROC described above, do the following:

1 From the NonStop NET/MASTER Primary Menu, type R to start RMS.

2 Create the ruleset TAPEMSGR:

a From the RMS Primary Menu, type 5 to choose Ruleset Maintenance.

b From the RMS Ruleset Maintenance menu, type the ruleset name (TAPEMSGR), and then type 1 to choose Create Ruleset.

c From the RMS Control Options Definition panels, make the following changes to the default ruleset settings:

Page Number	Page Name	Field	Value	Meaning
1	Suppression	Delivery Philosophy	NEGATIVE	Suppresses all messages except those explicitly specified
3	Run Parms	Message Suppression	Y	Allows the ruleset to suppress messages
		Message Modification	Y	Allows the ruleset to modify messages
		Process Solicited Msgs	Y	Allows the ruleset to process solicited messages

d Press the F3 function key to exit to the RMS Primary Menu.

3 Create two rules for the ruleset (TAPECOLOR and NOEMSMSGS).

a From the RMS Primary Menu, type 6 to choose Rule Maintenance.

b From the RMS Rule Maintenance menu, type 1 to choose Message Action Rules Maintenance. Make sure the ruleset name is TAPEMSGR.

c From the RMS Message Action Rules Maintenance menu, type 1 to choose Add Using Defaults.

d From the following pages, change just the following fields with the indicated values:

Page Number	Page Name	Field	Value	Meaning
1	Message Validation	Message Action ID	TAPECOLOR	Rule name
		SS ID	TANDEM.TAPE.D40	Rule is triggered if message has this subsystem ID. You could use an asterisk (*) instead of a version but this reduces efficiency.
		Process name	*.*	Rule is triggered from any process from any node
4	Message Modification	Deliver	Y	Rule delivers the message
		Color	W	Rule changes message text color to white

e Press the F3 function key to exit to the Message Action Rules Maintenance menu.

f From the RMS Message Action Rules Maintenance menu, type 1 to choose Add Using Defaults.

g From the following pages, change just the following fields with the indicated values:

Page Number	Page Name	Field	Value	Meaning
1	Message Validation	Message Action ID	NOEMSMSGS	Rule name
		MDO Element Name	MSGATTR.CLASS.EMSMSG	Rule is triggered if this MDO element has a Boolean value of 0 (that is, it is not an EMS message)
		MDO Element Value	0	
4	Message Modification	Deliver	Y	Rule delivers the

				message

    h   Press the F3 function key to exit to the NonStop NET/MASTER Primary Menu. Ignore any other screens that appear before the NonStop NET/MASTER Primary Menu.

To start the ruleset from OCS as a MSGPROC, do the following:

1   From the NonStop NET/MASTER Primary Menu, type 2 to enter OCS.

2   From the OCS command input line, type ZRMSMENN to start RMS.

3   From the RMS Primary menu, type 1 to choose Start RMS Message Handler.

4   From the RMS Start Message Handler Primary menu, type M, ensuring that the ruleset name is TAPEMSGR.

5   Press the F3 function key to exit to OCS.

To have the ruleset start automatically from OCS as a MSGPROC, do the following:

1   From the NonStop NET/MASTER Primary Menu, type M to enter User ID Management Services.

2   From the UMS Primary Menu, type U and the user ID.

3   From the OCS Details page (Page 5), type ZRMSMGHN in the Message Procedure field. This starts a message handler as a MSGPROC.

4   Press the F3 function key to save the record and exit.

5   From the NonStop NET/MASTER Primary Menu, type R to enter RMS.

6   From the RMS Primary Menu, type 4 to choose Default Ruleset Allocation.

7   From the RMS Default Ruleset Allocation menu, type 1 to choose Add Using Defaults.

8   In the Region Owner field, type the user ID. In the Default Ruleset field, type the ruleset TAPEMSGR.

9   Press the F3 function key to save the record and exit.

10   To initially activate this ruleset as a MSGPROC, the simplest method is to log off NonStop NET/MASTER, log on again, and then enter OCS. On each subsequent occasion you enter OCS, the ruleset will be activated as a MSGPROC.

Some Considerations

Use the EMSCOLL START and EMSDIST START commands to ensure that EMS events can flow to and from NonStop NET/MASTER.

Use the PROFILE EMS=YES command to ensure that you can receive EMS message in OCS.

If you are writing NCL procedures, it is a good idea to specify PROFILE NCLTEST=YES from OCS when testing.

Conclusion

Using NonStop NET/MASTER to change message appearance is very easy. You can do so using simple commands, by writing your own NCL procedures, or at a high level by using RMS.