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.

Discovering the Hidden Secrets of EMS Messages

This article provides some tips for Network Control Language (NCL) programmers and NonStop NET/MASTER operators. It briefly discusses how NonStop NET/MASTER intercepts and forwards Event Management Service (EMS) event messages. It describes how to define a function key to analyze and display the contents of any message.

Using the tips in this article, you'll discover that there may be undocumented tokens in EMS event messages that could otherwise go unnoticed.

Intercepting and Forwarding EMS Event Messages

This article assumes that you have a NonStop NET/MASTER system running that is already set up to forward EMS events to an Operator Control Services (OCS) window.

If you have configured NonStop NET/MASTER to receive EMS events from an EMS distributor, EMS messages arrive at the NonStop NET/MASTER EMS interface. If an EMSPROC NCL procedure is active, the procedure intercepts the messages. Typically, the procedure is designed to read and analyze each message, then either forward or delete the message.

EMS messages can be forwarded on to various destinations. These include other NCL procedures for more processing, the NonStop NET/MASTER activity log, and to OCS operators. When messages are forwarded on to OCS operators, the messages can be displayed on an operator's terminal in an OCS window.

Displaying SPI Tokens in an EMS Event Message

To show that EMS event messages can include undocumented tokens, we'll set up a custom function key that will enable you to analyze selected EMS event messages as they pass by on your OCS window.

The following steps describe how to define a function key that uses two NCL procedures to analyze and display the contents of any message in an OCS window. After following these steps, you will be able to place the cursor next to any message in an OCS window and simply press the function key to display the parts and values in the message. The information is displayed in the OCS window.

Using this technique, it is very easy to determine the SPI token names and values of any EMS message that is displayed in an OCS window. This includes both documented and undocumented SPI tokens.

1 Enter OCS (this is Option 2 from the NonStop NET/MASTER Primary Menu).

2 Define the SHIFT/F1 function key as an ACTION function that calls an NCL procedure called DUMPMSG (or define another unused function key if SHIFT/F1 is already defined). To define the function key, enter the following command from the OCS command input line:

```
fk sf1 act,dumpmsg
```

3 Type the following two NCL procedures and save the source files in your own user NCL procedure library or in the customized NCL procedure library (ZNNMNCS). Call the first NCL procedure DUMPMSG and the second NCL procedure PRINTMDO (or use other names that are appropriate for your organization).

To create the NCL procedures, use the following two commands from the OCS command input line (the EDIT command invokes Tedit):

```
edit dumpmsg
edit printmdo
```

The DUMPMSG NCL procedure reads in a selected message, displays a BEGIN message, passes the variable containing the message (&x.) to PRINTMDO, and displays an END message:

```
dumpmsg: procedure
  control noendmsg
  assign mdo=&x. map=$msg from mdo=&$prm.
  say "=== BEGIN MESSAGE DUMP ==="
  call printmdo share &x.
  say "=== END MESSAGE DUMP ==="
end dumpmsg
```

The PRINTMDO NCL procedure analyzes the message and displays every part of the message in an OCS window:

```
printmdo: procedure
  call print_it( 0, "" ) share &x.
  print_it: procedure
    &nspaces = &1
    &piece = &2
    &spaces = copies( ' ', &nspaces )
    if &piece \== '' then
        &piecedot = &piece'.'
    assign opt=mdoelements args from mdo=&x.&piece
    do &i = 1 to &sys.varcnt
      &y = &piecedot || &&i
      say &spaces || ELEMENT &&i is &x.&y
      call print_it( &nspaces + 2, &y ) share &x.
    end /* do */
    assign opt=mdofields args from mdo=&x.&piece
    do &i = 1 to &sys.varcnt
      &y = &piecedot || &&i
      say &spaces || FIELD &&i is &x.&y
      call print_it( &nspaces + 2, &y ) share &x.
    end /* do */
  end print_it
end printmdo
```

Now you can display the contents of any message in the OCS window by using the UP and DOWN arrow keys to position the cursor next to a message and then pressing the SHIFT/F1 function key.

After you press the function key, the letter A (for action) appears to the left of the OCS prompt (=>). After a few seconds, the parts and values of the message scroll past on the OCS window. Use the PAGEUP and PAGEDOWN keys to scroll backward and forward through the message.

Some Considerations

To make the DUMPMSG and PRINTMDO NCL procedures available to all users, save them in the customized NCL procedure library (ZNNMNCS).

To enable all users to display the contents of messages by using a function key, define a global function key in a customized INIT NCL procedure and call that procedure from the distributed INIT NCL procedure. The global function key is created during NonStop NET/MASTER startup. Use the following statement in the customized procedure to define the function key:

```
cmd "fk sf1 act,dumpmsg"
```

If a function key is not defined for all users, you (an individual user) can set up your OCS profile so that a local function key is defined whenever you enter OCS. If you have an NCL procedure that is executed whenever you enter OCS, use the following statement in the procedure:

```
cmd "fk sf1 act,dumpmsg"
```

Your OCS profile determines whether you are authorized to receive unsolicited and EMS messages. Use the PROFILE command from OCS to display information about your OCS profile. The values that show whether you can receive unsolicited and EMS message are UNSOL and EMS, respectively.

To start the receiving of events from an EMS distributor to NonStop NET/MASTER, use the EMSDIST START command.

Conclusion

Using the techniques described in this article, you can view the contents of any message that is displayed in an OCS window by simply selecting the message and pressing a function key. If you select an EMS message, the display will show all SPI tokens in the message, including those that are undocumented.