GALAXY-20 has been changed to include the following new features:

- Alias Printers Support
- Adding the /CLUSTER-NODE switch to additional OPR commands
- The selective routing and receiving of remote OPR messages

These additions are described below.

1.0 ALIAS PRINTERS SUPPORT

It is now possible to refer to printers by aliases rather than by their physical specifications. The following commands have been added to support this feature:

- DEFINE ALIAS alias {alias | physical printer specification | null} {/CLUSTER-NODE:cluster-node-name or "*"}
- SHOW ALIAS {alias | CLUSTER | DQS | LAT | LOCAL | physical printer specification | null } {/CLUSTER-NODE: cluster-node-name or "*"}

1.1 The DEFINE ALIAS Command

The DEFINE ALIAS command allows an operator to uniquely DEFINE, reDEFINE or unDEFINE alias names to local, DQS, LAT, and CLUSTER printers. Once an alias is defined for a printer, that printer may be specified solely by its alias. An example of the DEFINE ALIAS command is:

```
OPR>DEFINE ALIAS FOO ? one of the following predefined alias names:
   BAR     BIN     FOO
   or unit number
   or one of the following:
  CLUSTER  DQS       LAT
   or /CLUSTER-NODE:
   or confirm with carriage return
```

1.1.1 Defining An Alias To A Printer Specification

The following command maps the alias FOO to the CLUSTER printer specification of CLUSTER 1 NODE GIDNEY:

```
OPR>DEFINE ALIAS FOO CLUSTER 1 NODE GIDNEY
```

1.1.2 Redefining An Alias

The following reDEFINEs the alias FOO to alias BAR:

```
OPR>DEFINE ALIAS BAR FOO
```

This command changes the alias name from FOO to BAR. (I.e., BAR is now mapped to the CLUSTER Printer 1 on node GIDNEY.) Note: If BAR is a previously defined alias, then its previous definition is removed since there can only be one alias name associated with a printer specification.

To Undefine the alias BAR:

```
OPR>DEFINE ALIAS BAR
```

This command will unmap FOO's mapping to the CLUSTER Printer 1 for node GIDNEY.

NOTE

- It is possible to define an alias for a printer that has not yet been STARTed or SET.
- Alias names are only known in GALAXY context, i.e., they are not known at the EXEC level.

1.1.3 Recommendations For System Manager

It is recommended that all alias to physical printer specification mappings be defined at GALAXY startup by including the appropriate DEFINE ALIAS commands in 7-SYSTEM.CMD

To avoid confusion, it is also recommended that all nodes in a cluster maintain identical alias to printer mappings.

1.2 The SHOW ALIAS Command

The SHOW ALIAS command will display the alias to printer specification mappings which have been previously defined. The syntax of the command will include the following:

```
OPR>SHOW ALIAS
```

This shows all the current alias name to physical specification mappings.

OPR>SHOW ALIAS {CLUSTER | DQS | LAT | LOCAL}

This shows all the current alias name to physical name mappings for the specified printer type.

OPR>SHOW ALIAS FOO

This shows the printer specification which has been mapped to FOO.

The SHOW ALIAS display will have the following format:

```
OPR>SHOW ALIAS
14:34:30           -- Alias Printer Mappings --

Local printers
   Alias  Unit
  ------  ----
     FOO     0
     BAR     2

DQS printers
 Alias                DQS queue name             Node
------      --------------------------------   ------
XEROX1                            TOPS$LN03    GALLO
XEROX2                             LVD$LN03      MED
XEROX3                            SI$BENSON   MRSVAX

LAT PORT printers
 Alias              Port name    Server
------       ----------------    ------
 PLAT1            24004_LN03A      LAT1
 PLAT2            24004_LN03B     LAT70
 PLAT3                  LN03      LAT71

LAT SERVER printers
Alias              Service name       Server
-----              ------------       ------
 SLAT                    LN03_4        LAT_1
```

2.0 ADDING THE /CLUSTER-NODE SWITCH TO ADDITIONAL OPR COMMANDS

The following commands now have the /CLUSTER-NODE: switch which allows them to be executed on a remote node in the cluster:

ABORT

ALIGN PRINTER

BACKSPACE PRINTER

CANCEL

CLOSE LOG

CONTINUE

DEFINE ALIAS

DISABLE (except for DISABLE OUTPUT-DISPLAY)

DISMOUNT

ENABLE (except for ENABLE OUTPUT-DISPLAY)

FORWARDSPACE

HOLD

IDENTIFY

MODIFY

MOUNT

NEXT

RELEASE

REPORT

REQUEUE

RESPOND

ROUTE

SEND

SET (excluding SET ONLINE)

SHOW (excluding SHOW CONTROL-FILE and SHOW TIME)

SHUTDOWN (excluding SHUTDOWN NODE)

START (excluding START NODE)

STOP

SUPPRESS

SWITCH

UNDEFINE

3.0 THE SELECTIVE ROUTING AND RECEIVING OF REMOTE OPR MESSAGES

It is now possible to selectively route messages from one node in a cluster to another node in that cluster. Furthermore, an operator can selectively enable or disable to receive messages that are routed from a remote node in the cluster to that operator's node.

The following commands have been added in support of this feature:

- ENABLE/DISABLE BROADCAST-MESSAGES message-type NODE cluster-node-name or * {/CLUSTER-NODE: cluster-node-name or *}
- SHOW BROADCAST-MESSAGES {NODE cluster-node-name or *} {/CLUSTER-NODE: cluster-node-name or *}
- ENABLE/DISABLE OUTPUT-DISPLAY message-type {NODE cluster-node-name or *}
- SHOW OPERATOR/ALL {/CLUSTER-NODE:cluster-node-name or *}

The ENABLE/DISABLE BROADCAST-MESSAGE commands enable or disable the sending of the specified messages to the indicated remote cluster node or to all remote nodes if "*" was specified.

The SHOW BROADCAST-MESSAGES command shows which messages have been enabled or disabled to be sent to the indicated remote cluster node or to all remote cluster nodes if "*" was specified or if the NODE keyword is missing.

The ENABLE/DISABLE OUTPUT-DISPLAY commands now include the NODE keyword. The NODE keyword indicates that the display of the specified messages from the indicated node, or all nodes if "*" was specified, are to be enabled or disabled.

The SHOW OPERATOR command now has the /ALL switch which indicates for each message type whether the display of that message type is enabled or disabled. If an operator has enabled or disabled message displays for messages from remote nodes in the cluster, these are also shown.

It should be noted that for a message to be displayed from a remote node in the cluster, the command ENABLE BROADCAST-MESSAGE for that message type must be given on that remote node. In addition, the operator on the local node must give the ENABLE OUTPUT-DISPLAY command for that message type indicating the remote node as the NODE keyword argument.

The intent of the broadcast messages feature is to allow an operator, logged-in to one node in a cluster, to see messages being generated on remote nodes in that cluster. For example, in a two-node cluster with nodes FOO and BAR, assume that an operator is logged in on node FOO and wishes to see all messages generated on node BAR. The following commands could be used:

```
OPR>ENABLE BROADCAST-MESSAGES ALL-MESSAGES NODE FOO /CLUSTER-NODE:BAR
OPR>
14:07:02  Received message from BAR::
14:06:48   --Broadcast message display modified--
OPR>ENABLE OUTPUT-DISPLAY ALL-MESSAGES NODE BAR
OPR>
14:07:44   --Output display for OPR modified--
OPR>SHOW BROADCAST-MESSAGES/CLUSTER-NODE:BAR
OPR>
14:08:29  Received message from BAR::
14:08:15           -- Broadcast Messages --

   FOO     Message type
   ------  ------------
     Ena   BATCH-MESSAGES
     Ena   CARD-PUNCH-MESSAGES
     Ena   CARD-READER-INTERPRETER-MESSAGES
     Ena   FILE-RETRIEVAL-MESSAGES
     Ena   MOUNT-MESSAGES
     Ena   PAPER-TAPE-PUNCH-MESSAGES
     Ena   PLOTTER-MESSAGES
     Ena   PRINTER-MESSAGES
     Ena   READER-MESSAGES
     Ena   USER-MESSAGES

     Ena   BUGCHK-MESSAGES
     Ena   BUGINF-MESSAGES
     Ena   DECNET-EVENT-MESSAGES
     Ena   DECNET-LINK-MESSAGES
     Ena   SYSTEM-MESSAGES

     Ena   LCP-MESSAGES
     Ena   NCP-MESSAGES

OPR>SHOW OPERATORS/ALL
OPR>
14:08:57           -- Operators --

    Node      Type   Terminal    Job             User
-----------  ------  --------    ---  ----------------------------
FOO          system       443     88  JROSSELL
   FOO     BAR     Message type
   ------  ------  ------------
     Ena     Ena   BATCH-MESSAGES
     Ena     Ena   CARD-PUNCH-MESSAGES
     Ena     Ena   CARD-READER-INTERPRETER-MESSAGES
     Ena     Ena   FILE-RETRIEVAL-MESSAGES
     Ena     Ena   MOUNT-MESSAGES
     Ena     Ena   PAPER-TAPE-PUNCH-MESSAGES
     Ena     Ena   PLOTTER-MESSAGES
     Ena     Ena   PRINTER-MESSAGES
     Ena     Ena   READER-MESSAGES
     Ena     Ena   USER-MESSAGES

     Ena     Ena   BUGCHK-MESSAGES
     Ena     Ena   BUGINF-MESSAGES
```

```
          Ena     Ena   DECNET-EVENT-MESSAGES
          Ena     Ena   DECNET-LINK-MESSAGES
          Ena     Ena   SYSTEM-MESSAGES

          Ena     Ena   LCP-MESSAGES
          Ena     Ena   NCP-MESSAGES

     **** SEMI-OPR is enabled ****
```