[LAT/SERVER] How To Troubleshoot A Stalled Print Queue
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OP/SYS: OpenVMS Alpha, All Versions
             OpenVMS VAX, All Versions

COMPONENT: Print Queue

SOURCE: Digital Equipment Corporation

SUBJECT:

This article describes how to troubleshoot a stalled print queue on a
terminal server using the Local Area Transport (LAT) symbiont
(LATSYM).

A stalled print queue indicates that the terminal driver is unable to
send data through the LTA device for more than 30 seconds. A stalled
queue is not considered an error condition. It is a temporary status
while the data is waiting to be sent. Normally, when the terminal
driver is able to respond to the request, the queue establishes a
connection and prints its job. Intervention is not generally needed
on the stalled queue.

DISCUSSION:

To troubleshoot a stalled print queue the following techniques
may be used:

    1. A stalled print queue is generally due to a problem with
       the device. The first step is to check the printer and make
       sure there is paper, there is no paper jam, the paper tray
       is seated properly, the printer is online, etc. Any condition
       that causes the printer to send an XOFF character causes
       the print queue to go to a 'stalled' state.

    2. Look at the server port to see if it is in an XOFF state. To
       do this, enter the following commands:

       On the OpenVMS system with the stalled queue enter:

           $ SHOW QUEUE <quename>   ! get the LTA device the queue is
                                     ! associated with
           $ RUN SYS$SYSTEM:LATCP   ! determine which server and port
                                     ! the printer is connected to
           LATCP> SHOW PORT LTAnnn   ! use the LTA number from the
                                     ! SHOW QUEUE command. This
                                     ! will show the name of the
                                     ! server and the port

       Connect to the server and enter the following:

           LOCAL> SHOW PORT n STATUS

In the output, there is field 'OUTPUT XOFF'. If it is 'YES',
the device sent an XOFF character to the server and
did not follow it with an XON character. This prevents
the data from moving from the server to the printer. To
change the status of the port, connect to the server and
enter the following:

        LOCAL> LOG PORT n

This changes the status of the port; however, the
underlying reason that the port never received the XON
character needs to be investigated.

3. Examine Queues for initialization problems.

   Printers that are connected to servers allow more than one
   node on the network access. To manage this multiple
   access scheme, one node at a time makes a connection to a
   printer. When the job completes, the connection is
   dissolved, so another connection can be made.

   If the correct symbiont (LATSYM) is not specified in the
   initialize queue command, the connection is not severed
   and the next job can not make a connection. The queue
   on the node that is trying to make the next connection
   goes into a 'stalled' state.

   To determine which node currently has a connection
   to the printer port, do the following:

        - Determine the server and port (see above for steps
          to do this).

        - Connect to the server.

        - Show the port information, using the command:

              LOCAL> SHOW PORT n STATUS

    Login to the node that has the connection to the port.
    Display the queues on that node with the command:

          SHOW QUEUE/FULL

    Look for queues that point to an LTA device that do not
    have the /PROCESSOR=LATSYM qualifier.

    By default, print queues use the PRTSMB print symbiont.
    A queue pointing to an LTA device must be initialized
    with the /PROCESSOR=LATSYM qualifier to override the
    default. PRTSMB does not release the device when a job
    completes.

    If a queue is found that points to an LTA device that
    does not have the /PROCESSOR=LATSYM characteristic, then
    this is probably the cause of other queues stalling.

    If all queues pointing to LTA devices are using LATSYM,
    then check all of them for actively printing a large
    job. If a queue is printing a large job, then other
    queues may stall until that job completes.

4. Check the operator logs on the OpenVMS system for the
   following error:

   > Message from user QUEUE_MANAGE on node
   > %QMAN-I-INVSMBMSG, invalid data in message from
   >   symbiont on queue queue_name is being ignored

   These errors cause the print queues to temporarily stall.
   For additional information, there is another article available
   by searching in the OPENVMS database with the search string:

   LATSYM QMAN-I-INVSMBMSG

5. If even after all the problems found above are corrected, the
   queue remains stalled, then it is possible that there are
   many other connection requests waiting to print. To determine
   if there are other connection requests queued ahead of yours,
   connect to the server and enter the following command:

   > LOCAL> SHOW QUEUE

   This command will display the current connection, and the
   other connection requests that are waiting.

   To remove connections to queues from the server, connect
   to the server and enter the command:

   > LOCAL> REMOVE QUEUE ALL

6. An additional scenario where the queue can stall is if an
   LTA device is set to BROADCAST, the device is not spooled,
   and a reply is sent to the LTA device (through either the
   REPLY/ALL or the REPLY/TERM=LTAnnn command).

   When examining the server port using the command 'LOCAL> SHOW
   PORT', there is a connection established to the correct NODE
   and LTA device. The output is not XOFFED. There are no
   entries in the server queue. This indicates that the queue
   should be working without a problem.

   In addition, when examining the port using the command
   'LATCP> SHOW PORT LTAnnn', there is an actual target and port
   name. This also indicates that the setup is correct.

   What occurs is that when the broadcast message is sent to the
   LTA device, it causes a connection to be established. Since
   reply messages are only intended for use with interactive
   terminals, no $DISCONNECT is sent. (If the disconnect is sent,
   interactive users lose their sessions.)

   To correct the problem, set the LTA device to NOBROADCAST:

   > $ SET TERMINAL/PERMANENT/NOBROADCAST LTAnnn

   NOTE: This also prevents OPCOM messages from being
          displayed in the middle of documents being
          printed.