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VMS ENQLM Quota Requirement for DAL/VAX/Rdb

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TOPIC -----

I have problems while trying to use DAL with VAX/Rdb. I'm using DAL 1.2 (from DEC LanWORKS for Macintosh) with VAX/Rdb 3.1 under VMS 5.3. My connection (and associated processes) were killed when I try to use the IDAL utility with an account different than SYSTEM (or a copy of it). Some commands worked, (like DESCRIBE DATABASES) and some others (like SELECT) ended up with the connection terminated. I experimented and found that the solution was to set the ENQLM parameter for the user to a minimum value of 250.

I did not find any information about this in my documentation, and I know it's not a VAX/Rdb problem, because I can use VAX/Rdb SQL\$ utility with the same ENQLM value without any problem. I have been able to reproduce the same problem on two CPUs, one MicroVAX 2000, and one 3300.

DISCUSSION -----

As you might already know, on VMS, the Enqueue Quota (ENQLM) limits the number of locks a process (and its subprocesses) can own. VAX/Rdb uses RMS, which in turn uses the Lock Management Facility, to synchronize shared file access. One lock is used for every shared file, local buffer, global buffer section, and outstanding record lock. Users doing large amounts of file sharing should set the ENQLM to a large value. Typically, this number is recommended at 200. The DEFAULT account ENQLM is set at 100, so all accounts begin with a limit of 100 unless explicitly changed.

It is understandable why you need to increase ENQLM when selecting a large number of records from a database. Commands like DESCRIBE DATABASE do not require many locks and, therefore, worked with the low ENQLM. We don't know why Rdb SQL\$ utility worked except for the speculation that IDAL might add the extra locking.

DAL support engineering told us that although they do not specify account quota requirements, in the documentation, they recommend changing user accounts quota to the VAX/Rdb requirements. The following are from VAX

Rdb/VMS Installation Manual:

BYTLM (Byte Limit): at least 18,000 bytes

FILLM (Open File Quota): around 50 is an acceptable value

ENQLM (Enqueue Limit): at least 600 locks

The account should also have TMPMBX privilege.

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