Tuning Application Messaging

Application messaging provides integration among PeopleSoft and either PeopleSoft or other non-PeopleSoft applications including traditional legacy systems. While the integration between the PeopleSoft applications is provided by the functionality within the core PeopleSoft architecture, integration to non-PeopleSoft systems usually require an external agency to act as a vehicle. An example of such external agents is MQ series. PeopleSoft integrates with MQ series to provide integration to traditional legacy applications such as CICS.

The objective of this article is to identify the various tuning opportunities to make this system perform better. This article should not be expected to provide an overview of the messaging system itself. For a good discussion on the application messaging, please refer to the relevant Peoplebooks that provide exhaustive overview.

GETPAGES

In a typical database centric tuning approach, the I/O rate is very crucial. In DB2/Z-OS since the hardware and the operating system is expected to provide support to many applications, it is important that we understand the effect of Application Messaging, the overall GETPAGES and the cumulative effect on the number of GETPAGES.

The delivered application messaging system is programmed to scan the Application Messaging tables every 60 seconds. Usually there are about three processes that periodically scan the application tables to determine whether any outstanding work needs to be processed. These SQL statements are executed against fairly small tables. The number of GETPAGES could become excessive due to the frequency of the SQL statements, executed to poll the tables periodically to find whether there is an outstanding message that needs to be processed. In fact an untamed application messaging system will consume more MIPs from the processor complex.

If your application does not use any messaging services then turn these servers off completely. Due to the recent demand in enterprise wide portal and installations where multiple PeopleSoft databases exist, it may become necessary to implement messaging system. A common use of the messaging system is to maintain the user profiles centrally. An update made at one system may need to be reflected at the other system. In such cases it is not possible to turn off messaging system and it is extremely important to tune the system.

The only way to decrease the GETPAGEs is to tune the scan interval to adjust the value high enough so the GETPAGEs become more manageable. The more the number of active application server domains the more the number of GETPAGES and the less the throughput of the system.

Scan Interval

We need to understand the behavior of the application messaging system. Contrary to what many people think, the application messaging scan interval parameter applies to how frequently you scavenge the messages that were previously in errors or in some extreme cases when we publish messages directly by bypassing the PIA. Every time a Publish Peoplecode is triggered, a call is made to the Broker dispatcher informing the dispatcher process that there is a request waiting in the message queue. How many times you directly publish by bypassing the PIA?

A common misconception that exists in 99% of the PeopleSoft architecture is to design the Integration system in all the application servers and let each one of them scan at 5 minutes or 10 minutes interval. **It is certainly not required.**

A better design is to configure the domains with a scan interval of 3600 seconds to minimize the GETPAGEs and optionally configure a domain that would just scavenge those messages that had errors previously by scanning at a lesser rate of 10 minutes. By designing the system like this you save a lot of GETPAGES and you also improve the real storage management by providing the buffers to hold more useful pages.

Active Channels

Sometimes PeopleSoft delivers application message channels with an “Active” status. You may be unnecessarily publishing messages that you are not even subscribing. These channels have to be disabled and the application must be modified to stop publishing those messages.

Dedicated Messaging Servers

Sometimes you could improve the performance and utilization by designing a dedicated messaging server instead of using the delivered messaging servers. This will result in a better performance especially in cases where the messaging system use is medium to heavy. Note that this will increase the number of application server processes.

Service level agreement fallacy and fall-out

It is not un-common to run into situations where you had to negotiate a service level agreement with the end users to guarantee the message delivery within n minutes. The fallacy is to set the scan interval to “n” or less than “n”. This almost absolutely guarantees increased resource consumption. Unknowingly we end up a victim of this fallacy. The service level agreement of “n” minutes has no bearing on the scan interval. Instead one must devote entire attention to speedier processing of messages by concentrating on traditional tuning methodology within DB2 and the traditional tuning methodology within the PeopleSoft application server.

If you want to discuss more on this topic, feel free to talk directly to our Principal Consultant by calling 866-DB2-PSADMIN. He can also be reached at venkat@hewittandlarsen.com.