



Whitepaper

Do You Know Where Your MQ Messages Are?

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Do You Know Where Your MQ Messages Are?

By Christian Wolfhagenⁱ

WebSphere®ⁱⁱ MQ based middleware has come of age and is now used as the basis for both integration of legacy applications and development of new applications using several design models. The strength of MQ is its asynchronous aspect together with its multi-operating system support. Yet MQ's strength can also present significant management and administration challenges.

A simple message could be quite critical to your business. It might be the receipt of a SWIFT transfer of funds by a financial institution from another SWIFT participant. Or it could be the transmission of a shipping order to a major supplier. However, the message might not arrive when it should. The message could exist somewhere in your computer network, perhaps one of millions. Or it might not exist anymore, having been already processed. Would you like to know how to quickly access and read the MQ message logs so you can ascertain what happened to a message in a matter of minutes rather than in a couple of hours? Do you know what path a message took or what queue manager it is currently on? Will you be able to prevent future delays?

Moreover, the message may span multiple systems and platforms. Will you be able to track a message over different operating systems and interfaces? And how will you correlate events that occur on different platforms and systems?

To solve these problems, MQ applications or systems administrators would typically begin looking for the message in the MQ queues. But finding the right queue is not always a trivial task. All too often, the administrator is forced to look in all possible queues: application, transmission and dead letter queues. Making matters worse, he or she will be forced to use different interfaces for the different operating systems involved. What is needed is a way for the MQ logs' content and information to be filtered based on user-definable criteria so that a message can be quickly selected, reported on and tracked, thereby meeting message delivery service level agreements.

The administrator will also want to review the detailed information about the history of a particular message that is contained in the MQ recovery logs. Unfortunately, the tools that come with WebSphere MQ to process log information are not practical enough to be used for this purpose. They are difficult to read and interpret, leading to delays in problem resolution. This deficiency is why most sites log the data from within the application or from an MQI wrapper. However, this technique can result in significant overhead and response time delays for users, as well as creating a programming and maintenance concern for many years to come.

A better way to manage MQ message flow: Introducing Cressida ReQuest™

Why use MQI wrappers at all?

Instead of having your applications or MQI wrapper log tracking information, you can use Cressida's ReQuest to analyze the WebSphere MQ recovery logs. ReQuest utilizes the recovery logs that the queue manager has already created. It provides a powerful and flexible interface to access the information contained in the MQ recovery logs. Since the analysis can be done on another machine and at any time you choose, there will be no overhead associated with your applications.

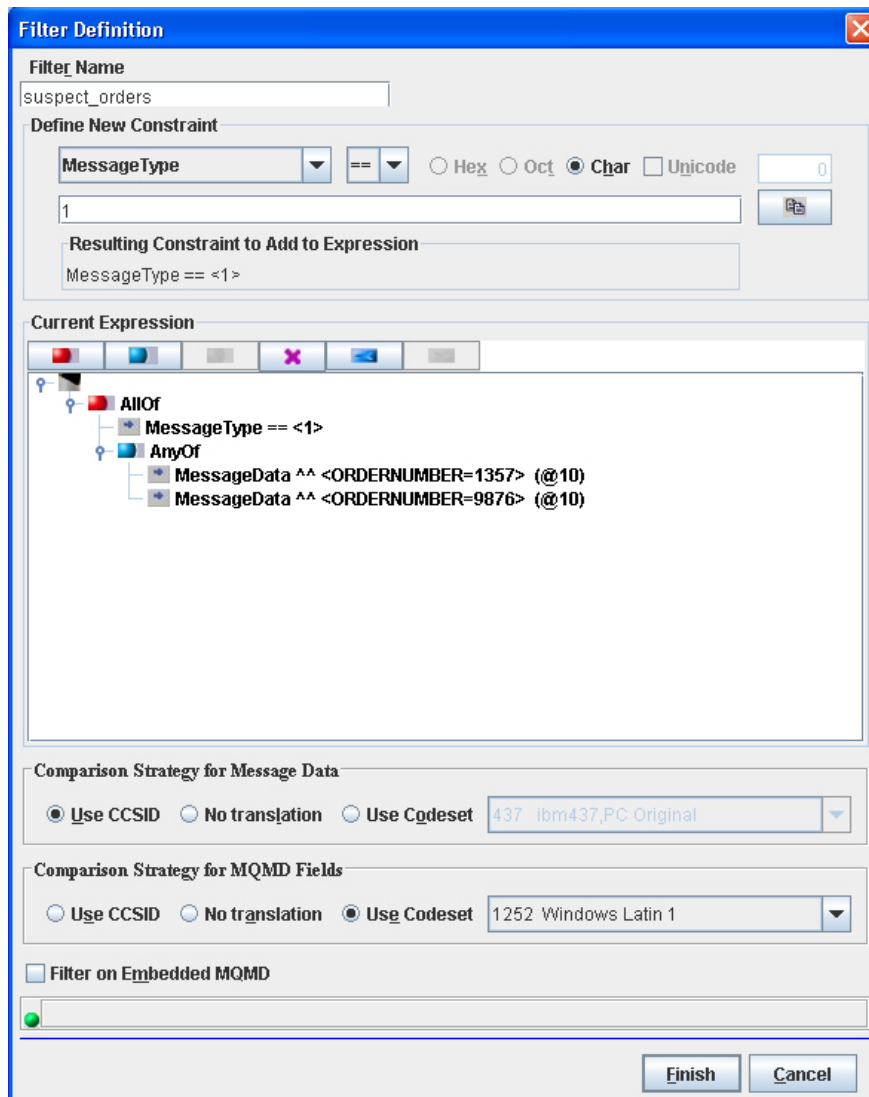
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ReQuest allows you to track a message's current location, contents, origin, destination and path, as well as to identify related messages, such as the responses to a request. By looking in multiple logs across different platforms, you could even track a message across your network and see the response come back again. You could then determine how long the message took at every point in its path through the network and detect potential bottlenecks. You could also see what happened if an application sent a message but did not receive a response – you will see how far the message traveled. This information would be particularly useful as a way to check claims from customers that a message was not delivered or to establish that your network response times satisfy your agreed-upon service level agreements.

Filtering and Reporting Made Easy

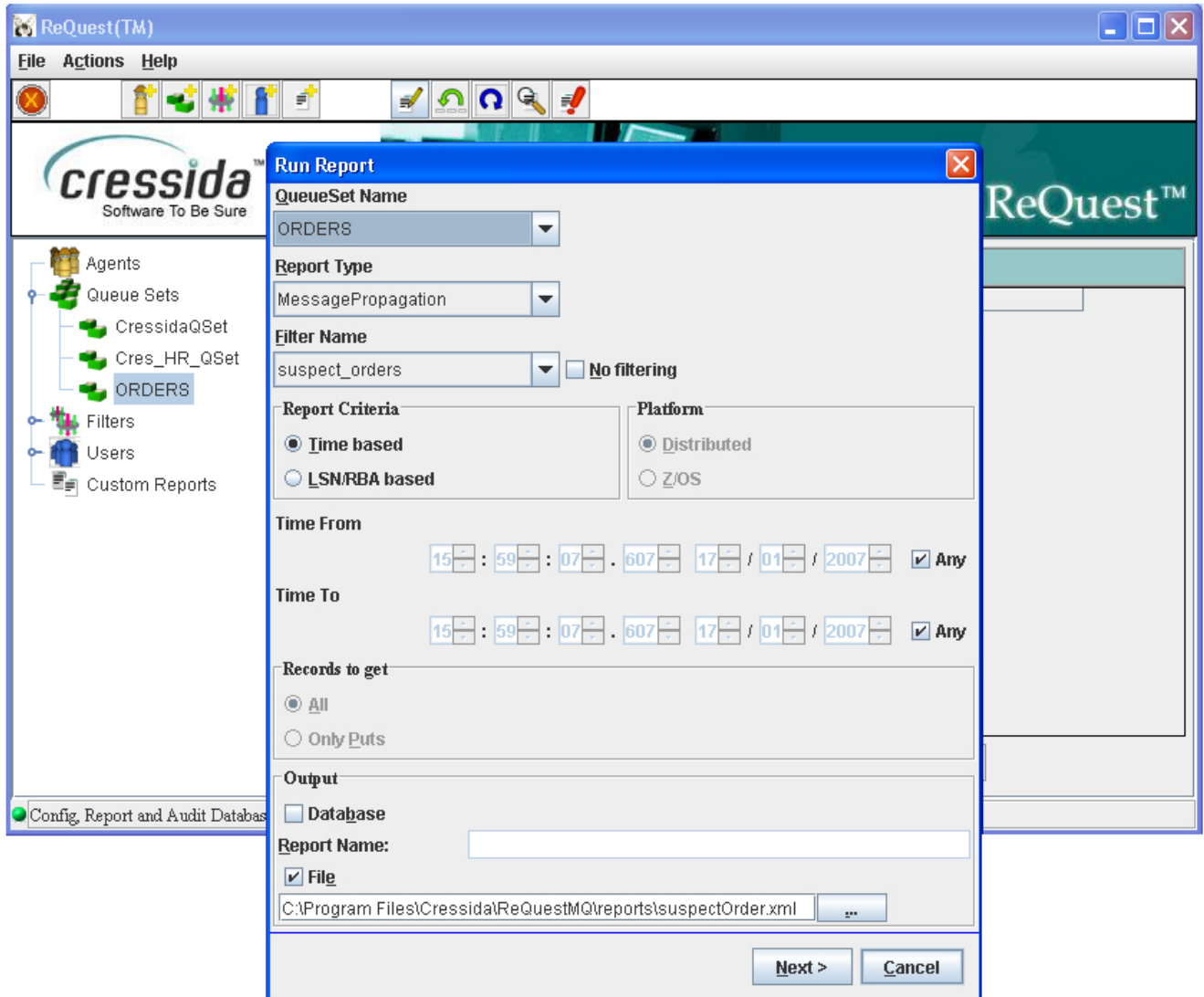
Another significant feature of ReQuest is the ability to search, filter, and report on messages based on user-definable criteria. Here is an example where someone would search for the occurrence of some suspect messages. **First, a message filter is created:**



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Then this filter is used to produce a report giving all occurrences of such messages, and possibly related messages:



Message Recovery to a Point In Time

Today's systems administrators realize that WebSphere MQ is not just a high-level communication protocol, but must be thought of as a database manager in its own right with critical business information stored in local queues. Applications that read and update the databases also put messages on and consume messages from queues, often in the same unit of

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work. Some database updates are driven by information on queues, while in other applications; the content of the messages being put on the queues depends on information in the databases. In other words, if the databases are recovered to 23:00 yesterday, the local queues must be recovered to the same time or you will have an inconsistent situation with unpredictable results.

WebSphere MQ does not provide a timestamp recovery feature. However, ReQuest provides the ability to recover messages and queues to a specific point in time. If you upgraded an application at 2:00am, and you found out 12 hours later that the application was faulty, then all transactions that happened in the last 12 hours should be rolled back. Ideally, you would roll back the queues to the time when the new application was loaded. Then you could potentially re-run all of the messages received by the application since it failed. In this way, MQ data can be recovered in sync with the database.

Application Planning

Application planning is another area where ReQuest has proven to be valuable. When you are designing and testing new MQ workloads, you want to be able to simulate a production environment message load. What will happen when the new application interacts with dozens of other applications? By doing realistic simulation runs, you can get a good idea as to how it may behave. A simulation in which you pump the same message 10 million times through the test environment is not realistic. You need a sample of your production workload coming in at the original throughput rate. Setting up an environment that simulates your production systems is quite a challenge. But with ReQuest, you can directly access and read last week's recovery logs. You can access every persistent message that was put on the recovery logs. The information in the log files is sufficient to recreate the message, which could then be placed on the appropriate queue. Using the log, you could then re-run a complete set of production messages through a new version of the application in a test environment before putting it into production. By using ReQuest and observing how your application handles production messages, you could reduce application bugs and outages in production. You will also be able to tune the different levels of your system (application, middleware, operating system, network and hardware), thus avoiding costly upgrades.

Other Uses

Since ReQuest provides easy access to detailed information about the history of messages, it could also be used (i) to provide evidence of regulatory compliance for recording, backup and recovery purposes, (ii) as input to a customer charge back system that bills based on the number of messages or the amount of data transferred by target queue or sending application and (iii) to satisfy auditing requirements.

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Conclusion

There is a wealth of information available in the recovery logs maintained by WebSphere MQ. However, it is difficult to read and hard to interpret. ReQuest accesses these logs directly and translates the information so that MQ support personnel can provide answers about the location, contents, origin, destination and path of a message in minutes rather than in hours.

To contact us or to obtain more information about Cressida's ReQuest, please visit our website at http://www.cressida.info/products_cressida_ReQuest.htm or email us at info@cressida.info .

Our telephone numbers are: USA and Canada, (914) 238-7900 and European head office can be reached on +44 14 83 23 93 00.



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