



Message Management

On the IBM System i (formerly the iSeries)

Message Management on the IBM System i

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Why is there a need for Message Management?

Overview

Regardless of whether your network consists of one or multiple System i's, or whether they are physically separate or logically partitioned units, they will all contain numerous message queues.

Has your business ever missed an important message? Without message management the truthful answer is probably yes.

Has a missed message ever had a detrimental or serious effect on your business (for example a system not being available for your users first thing in the morning)? Once again, probably the truthful answer is yes.

Operations staff could spend their time scouring the queues for important messages, but that would not be a very cost effective use of their time or knowledge and will increase the likelihood that an important message will be missed.

Queue Types

These message queues will serve different purposes and can be IBM supplied system queues:

- *QSYSOPR, QSECOFR.*

They can be created as your system and user base grows:

- *User Id, display devices.*

They can come as part of a new application being installed:

- *ERP, Sales & Distribution, Finance or Manufacturing packages, MQ Series.*

Messages

However, they will all have one thing in common. They can all contain a great number of messages. Some of these messages will be purely informational:

- *CPF1241 – Job &JOB completed normally on &DATE at &TIME.*
- *CPC0962 - Cleanup of job tables completed.*

Some will be a warning of future problems if unheeded:

- *CPI0964 - Weak battery condition exists.*
- *CPC1123 - Subsystem &1 cannot start prestart job &2.*
- *CPF1392 – Next not valid sign-on disables user profile.*

Some will require certain user or operator actions to be performed:

- *Instruct a System Operator to load an optical storage archive.*
- *CPA2087 - Load next volume on the installation device (C G).*
- *CPF1393 – Subsystem XXX disabled user profile YYY on*

Finally, in the worst case some will denote a program or system failure:

- *RPG0121 - RG0001 18400 array index is not valid (C G S D F).*
- *CPI0955 - System ASP unprotected storage limit exceeded.*

The next time you sign on to a system, use the WRKMSGQ command to review the myriad number of message queues on your system. Then take a few moments to peruse some of the messages that have been sent to those queues. You will begin to

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understand the size of the task if you wish to ensure that you do not miss that important message (be it system or application driven).

Strategy

Monitoring messages from a single point of control allows an overall view of systems within the network and reduces the time taken to respond to urgent messages. This will also allow a common, structured approach to be defined.

Formalising your message management methodology will free up your Operations and Support staff allowing them to make better use of their time. Staff can then be pro-active with regards to system threats instead of reacting after the event has occurred. Standard informational messages could be reviewed and simple filters can be created to ensure that these messages do not cloud the vision of Operations staff.

Now take a moment to look at your queues and messages from a different perspective, from a "how can I use these messages to be pro-active on my behalf" point of view.

- *Do you have certain message queues or individual messages that could have authorisation rules applied to them?*

For example, a Purchase Ledger system may send a payments file off to your Bank, either electronically or via tape. Messages to process this data are sent to a specific queue that only three named Users are authorised to access, but require different levels of authentication to complete the task. The first level could be for the Purchase Ledger Clerk to countersign the payments run as completed. The second level could be for a Financial Accountant to sign off the amount to be paid from the company's account. The final response could be from the Operations staff to countersign that the tape or file transfer has been completed.

Leaving that example behind, here are a few more suggestions to consider:

- *Would it be useful to have the ability to turn certain system or application messages into inquiry messages, to force a response and capture when the message was responded to?*
- *Do you need to monitor for the fact that a certain job has or has not completed according to schedule, either in or outside of normal working hours?*
- *Is there a specific device that is critical should it fail (for example, the President's/CEO's PC, or a communications line to Head Office)?*
- *Do you need to monitor whether a message has not been responded to within a given period of time and then notify some individual or contact a number of support staff, to escalate the situation?*
- *How about the ability to commence an automated function, without specifically notifying anyone?*
- *Would the ability to intercept possible looping jobs before they cause a problem be useful?*
- *Do you wish to offer 24 x 7 support cover, without necessarily having to have staff on site, via pager, email or cell phone?*
- *Would the ability to control which personnel can answer the messages and in what form that response should take, be important?*

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- *Do you need to interface to an Enterprise Management Console within your organisation?*
- *Is there a requirement to transfer certain information via SNMP traps?*
- *Would you like the ability to perform certain additional actions to strengthen your existing security measures?*

The list of possibilities might surprise you.

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How should we manage messages?

Methods

The best method is to adopt a "management by exception" approach that allows an early warning of impending problems to be issued before a disaster occurs, filters out unimportant messages and provides a single point of control for all of your queues. Ultimately, you must decide upon your own methodology and how you will implement it across your Business and how you will justify your decision at a later date.

When all of the active jobs and devices, on all of the active systems within your network or networks are running normally and jobs are completing normally, there is no need to be informed of that fact every second, of every hour, of every day.

However, the opposite scenario is also true. Having no warning of a problem before disaster strikes, be it for example either a serious disk storage problem, or an unattended overnight routine to pay all your suppliers subsequently fails to connect to an external communications device, is equally useless.

The better method is to review the message queues on your systems, decide which queues are critical to your business, which queues are important and which queues can be covered by the standard clean up rules. Then choose a tool to automate as much of the process as is possible.

The basic methodology will be similar for most businesses; however the list of specific requirements will be different site by site.

Take some time out and review current practices across your business.

Strategy

Once you have your queue hierarchy arranged, then start investigating the actual messages that arrive on each queue. Again, then decide which messages:

- Cannot be ignored and require positive action as soon as is possible.
- Which are important, but not immediately time sensitive?
- Those that can have an automated response defined for them.
- Which are informational but important to note have occurred?
- Finally, those purely informational messages that can be safely ignored.

At this time review whether any of these messages require further securing. Sensitive messages may require to be "hidden" from staff not authorised to see them. It may also be especially important for these messages not to be answered incorrectly. It may be desirable to control the responses that a particular User can provide to a message.

Certain messages may require automated routines to be defined for them that can run before a situation gets critical, especially if you do not have manned Operations twenty-four hours a day, seven days a week. For example, on a "critical storage" condition message, a job could be started that will delete saved journal files, delete old spool files,

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clear test libraries, etc. Then this routine could send a message to a nominated support person on his cell phone to inform him that a situation has arisen and pre-defined actions are being carried out. A response could then be sent from the cell phone to initiate further action, or time is provided to allow remote access to be set-up.

The ability to amend the level of response made to individual messages depending on shift patterns or personnel calendars could be useful. This would allow an earlier automation of response when the site is unmanned if required, but a more manual escalation during manned hours, based on pre-defined service level agreements.

Guarding against disks filling up unnecessarily in the event of a looping job could prove extremely useful. The ability to detect looping jobs immediately, gives users the option to place the job on hold and swiftly resolve the problem before it creates any adverse impact upon the system's performance.

The ability to track the success of business critical applications could be of use. Likewise, the need to know that certain key jobs have not completed within a certain time frame, could be of great significance.

The ability to monitor messages whilst a system is in a restricted state might be of paramount importance to your company, during certain scenarios (for example, during a system save or a PTF installation). This might also allow for cost reductions to be achieved across wide area networks.

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What should we manage messages with?

You could try to ensure that every piece of system operating code, internally produced programming code and every single third party application that you purchase, contains all of the message control that you require to be incorporated into it, but we all know that to use this approach to provide a common message management solution for your business is not going to work.

The better option is to purchase a tool that provides an intuitive approach and will wrap around your existing framework, future network growth and any unique business requirements you may have. It should use the latest technology; IBM supplied APIs and also be possible to use the product over the Internet.

That tool should allow simple rules and filters to be built upon and developed, as your knowledge of your hardware and software develops and the complexity of your network grows, forcing additional controls to be added.

The tool, as a minimum, should:

- Allow a common, structured approach to be taken across your network.
- Allow for time zone differences if installed across a geographically diverse network.
- Allow the creation of escalation procedures that can warn staff before a critical condition causes a serious failure.
- It should also be able to automate certain simple responses to negate the need to notify staff, e.g. by simply answering the message.
- It should allow an automated response to be applied and then inform staff only when the escalation's command or program fails to alleviate the problem.
- The ability to detect looping jobs and optionally place them on hold.
- The ability to incorporate shift patterns or calendars allowing for staff availability.
- The ability to secure the product and your system from unauthorised sources.
- The ability to interface with Enterprise Management Consoles.
- The ability to provide a history of message and escalation activity for audit purposes.
- It should contain the ability to provide audible warnings to be broadcast above the noise of a Computer Room.

As Support Staff are not always positioned in front of their screens the whole day, the tool should also allow Operations or Support staff to be contacted via email, pager or a cell phone.

Ultimately, the tool should allow interaction with the system from a remote location, with or without the need for a PC or a modem, simply by using your cell phone.

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System Management products from CCSS

QMessage Monitor provides the total solution to System i Message Management eliminating the need for manual monitoring. Capable of filtering, answering and escalating messages, QMessage Monitor makes easy work of Message Management. Automatic notification via audio, visual, email, pager or cell phone prompts, allows staff to keep in touch with their systems whilst performing other tasks, or outside of normal working hours. By restricting what an Operator sees to what the business regards as essential, you can reduce the chance of errors and manage all of your systems from one console.

QSystem Monitor designed specifically for the System i, produces a detailed overview of the status of systems across the network. Critical hardware and performance components can be measured and recorded. Historical data targets problems and allows Operations staff to anticipate future requirements. System Managers can resolve recurring and existing problems throughout the network and Operations staff can detect and react to events on multiple, networked systems from a central console.

Thresholds can be created and interfaced into QMessage Monitor, to allow Operations staff to be notified via various methods of potential system problems before the problem develops into a fully-fledged disaster.

QRemote Control brings unlimited benefits to those companies who value the ability to manage their systems, access application data, run commands and programs directly from their cell phone as well as receiving and replying to messages sent from their System i.

Users benefit from the ability to access information and control multiple iSeries without the restrictions that come with on-site management. Organisations can make use of this very flexible application to help them manage not only their systems but also key performance indicators can be processed via a mobile phone wherever they may happen to be, whenever they feel the need.

If you cannot monitor it, you cannot manage it.

Pro-active or re-active, let your Business choose!

For further information or customer stories on any of these products please visit the CCSS website <http://www.ccssltd.com>. Contact our sales or support staff via sales@ccssltd.com or support@ccssltd.com.