Best Practice Guide

Topic:
Achieving Lights Out Automation on your IBM i Network.

Summary:
CCSS sheds some light on the likely challenges and benefits of achieving a partial, selective and even full Lights Out Automation status in an IBM i environment.

CCSS
Monitoring your systems

CCSS develops, markets, and supports performance monitoring, message management and automation solutions for IBM® i servers, including Power Systems™ and System i™. An Advanced IBM Business Partner, CCSS develops powerful solutions to support some of the world's most demanding IBM i environments across many industries including pharmaceutical, insurance, banking, and logistics.

Lights Out IBM i Automation

Back to Black

Lights Out, the near utopian vision of a totally automated systems environment, has long been held as the ideal but somewhat unachievable systems management goal. In its purest form, the benefits of massive cost efficiency and a total elimination of human error incidence means the case for Lights Out maintains a strong following. More commonly, we're seeing the application of a Lights Out condition to specific elements, areas and tasks within a systems environment. By considering the overall approach to systems management and identifying such areas, IT Managers can easily implement a partial or more extensive Lights Out state to deliver the same efficiencies with the use of intelligent automation solutions.

The economic pressure of recent years has put acute strain on teams to manage their systems resources with fewer people. The dependence on key applications, processes and system events puts further stress on linked or sequential events. A relatively small departure from these key procedures (such as end-of-day not starting when it should) can quickly throw all subsequent processing, tasks or events into disarray and leave the already stretched team to cope with the aftermath.

Automatic for the People

"Our pricing is critical to keep us competitive and retain market share. If for any reason the weekly price update process did not start on time, the impact on our business would be substantial and affect every part of the organization from IT and stock replenishment through to our distribution channels and end customers. What's worse is that right now we'd have to assign manual monitoring resources to know whether or not a routine but important task like this has started on time. If that failed to occur, we'd only know about it as a result of the disruption caused. There has to be a better way."

IT Manager, Retail Industry, USA

"We inherited a larger network to manage following a recent merger but unfortunately, no additional staff to help achieve that. We needed to look at what areas of systems management we could fully automate without compromising our standards, availability or budget. It seemed like a tall order but given how stretched we were in just maintaining standards at the same level, we knew something had to change – and soon – because the shift patterns we were keeping couldn't be sustained long term. Automation had to pay a bigger role in our day-to-day operations."

System Manager, Pharmaceutical Industry, Europe

Illuminating the Issues

The chart below identifies some common issues on the IBM i that can be addressed with more advanced automation to bring IT Managers closer to their Lights Out goals. The chart also looks at the impact these issues can cause when this level of automation is not in place.

Underlying Issue	Impact Potential	Solution
Scheduled Event Failure		**Real-Time Event Monitoring**
• A critical event (e.g. end of day) fails to either start at the expected time or fails to finish at the expected time	• Other processes and business critical tasks fail to begin on time • Accounting transactions remain unposted / unaccounted for • Audit compliance is threatened • Key financial reports are held up • Users are prevented from starting their work on time the following day unless immediate additional spend on out-of-hours resource is brought in to resolve the issue onsite • Productivity reduced; expenditure increased	• Real-time notification of the event failure is sent along with the most important details – no investigation time is required before action can be taken to resolve it • This urgent message is escalated to relevant staff according to shift and availability patterns if it remains unanswered • Sequential processes start on time and users and other business processes remain unaffected • No unbudgeted time or money is spent in resolving the situation
Over Burdened Teams		**Real-Time Automation**
• A full system save must be completed as part of month end procedures but re-allocating internal resources to make sure this happens without incident will compromise other critical projects happening at the same time. There is no budget for hiring additional, temporary staff to ease the burden of the workload.	• Without the save, audit compliance will be breached and other tasks will suffer unacceptable levels of disruption. • Additional budget will have to be found to accommodate the staff shortage which offers only temporary respite rather than a long-term solution • Users, suppliers and end customers could all be affected by the disruption. • Future projects will suffer as a result of the lack of budget	• A full system save can be carried out unattended • Any issues that occur are immediately identified and escalated for attention in real-time. • Managers can respond immediately to the root cause without a lengthy investigation process • No requirement for expensive dedicated resources to manually monitor the system during this process on a ‘just in case’ basis • Maximum efficiency of resources can be enjoyed across multiple projects
Remote Workers		**Real-Time Remote Management**
• A problem occurs during the night that threatens to prevent important jobs from completing and will need to be resolved by on-call staff.	• On-call often translates to on-site as problems require immediate resolution • Out-of-hours attendance is not only inconvenient for staff but also costly for employers	• Real-time monitoring of the system and escalation of important messages to pagers or mobile phones can free staff from the requirement to be on-site and reduce costs • Commands can be run, messages responded to and issues resolved all without the need to return to the data centre.

Acquiring Night Vision

Automation can benefit environments with a variety of needs - from the most routine operator daily check-lists to events that have the capability of grinding a business to a halt if something goes wrong. As part of the risk analysis performed by IT Managers, the key is to not only identify them successfully but also to define and implement the correct procedures for unexpected circumstances. Thoughtfully designed escalation and alerting procedures that take account of staff availability means IBM i environments can benefit from a best-of-both-worlds approach that translates to acquiring a keen sense of night vision rather than flailing around in the dark.

Automation is the bedrock of systems management efficiency and the catalyst to achieving the pro-active approach necessary for Lights Out or even Lights Dimmed (as in the case of more partial or selective automation) IBM i environments. Any regular events or processes have the ability to be automated if Managers are able to look beyond the immediate parameters of the system to determine how these processes impact the wider business.

Highlighting the Challenges

Often critical jobs or procedures occur at the midpoint of an established series of events that extend beyond the data centre. For example, your warehouse workers may have to complete their working day before the system's 'end of day' can start. Indeed, confirmation from the warehouse may act as the trigger for 'end of day' to run. Similarly, the Accounts department may need to submit key reports by a defined time. Without a well defined communications path, even a small issue can throw one or more departments into chaos when these linked procedures fall out of step.

Once these lines of dependence are highlighted, any conflicts also need to be organized in an appropriate hierarchy of escalation. For example, issues relating to 'end of day' might need priority resolution before a scheduled full system save can occur. As such, the urgent 'end of day' message may be sent directly to the IT Manager at home where he can remotely resolve these issues first.

Requirements for Lights Out Automation on the IBM i

- 24/7 monitoring of all system messages, queues and critical OS/400 performance metrics
- Full automation of operational daily checks for the IBM i
- Escalation and alerting of critical problems that could impact the business
- Mobile management via escalation of messages to a mobile phone allowing the user to receive, acknowledge and reply to business critical messages
- Monitoring and alerts for events that are expected to start or finish by a particular time, e.g. end-of-day jobs
- Escalation of events in accordance with their importance
- Full history log of specified events that have or have not occurred

Upsides to the Dark Side

Individual areas, jobs or tasks that can be automated on any given system provide a valuable contribution to the cumulative beneficial impact on the network or IBM i environment as a whole. QMessage Monitor centralizes message management across even the largest and most complex networks to ensure the vast majority of system messages are automatically filtered and answered without any requirement for human intervention. Managers' time can be spent efficiently dealing only with exceptional messages which require their immediate attention for resolution.

Automating the majority of messages in this way provides for greater consistency, the elimination of human error incidence and errors of omission. Organizations may also see a reduction in the number of after hours IT support calls and increase in their early morning productivity levels (which can become a 'dead zone' whilst users wait for overnight issues to be resolved before starting their day's tasks.)

IBM i Lights Out Specialists

CCSS, the systems management automation specialists for the IBM Power Systems(tm) running IBM i, has already helped some of the world's best known companies to achieve a high level of automation and Lights Out status. If your team is struggling with a seemingly impossible workload or you're simply looking for the financial benefits of a more efficiently managed environment, look no further than our contact details below. We'd be happy to discuss your requirements in detail.

Real-Time Event Monitoring and Lights Out Automation

The examples below shows an event created to monitor for when a certain job does not complete when expected, which will then notify the relevant support group via SMS message or Email depending upon which calendar or shift pattern is currently active.