KEEPING MEDITECH SYSTEMS RUNNING AS INTENDED - 24 / 7

A comprehensive outline of available tools within your core applications merged with real world / practical explanations. This systems focused review is utilized in Best Practice IT Shops across the globe. Use it as a check list to ensure that your Meditech systems are not only HIPAA 800-32 Compliant; but actually providing the patient centric information needed by our clinicians to deliver excellence in patient care.

By: Scott A. White - ret. Application Services Director with 22 years of hands on experience in Meditech & infrastructure development.

Why monitor and maintain the core systems that your clinicians rely on to care for their patients?

Active monitoring & maintenance of these systems will identify and mitigate problems before they are noticed by the clinicians. If left unmanaged, these issues usually surface in the patient care areas and contribute to the delay in patient care. When monitoring & maintenance are not performed with great regularity, we find ourselves being called for support on issues after the clinicians run into problems. These "touch points" also contribute to your compliance with HIPAA 800-32 and 800-34 for Data Availability, Integrity, and Security. Being proactive with this approach will reduce support calls, improve the reliability of the systems, increase end user adoption, and ultimately help improve patient care. Yes, help improve patient care – because if downed systems, hung sessions, locked jobs, clogged queues, and missing data contribute to negative patient outcomes, then the inverse must also be true.

This reference material is not intended as a comprehensive technical manual that describes any of the processes contained here-in. For full details, please refer to the process specific documentation provided by your vendor. The information shared with each screen shot below is subjective and general to convey the concepts regarding the value of monitoring and maintaining each process. There are sometimes more than one way to accomplish these steps; but I share these with you as a reference to start with. Please let me know if you have recommendations to include other valuable processes that would help identify systems issues before the clinicians encounter problems with their patient care applications.

Not only does this service include monitoring and maintaining commonly accessed processes, it also takes care of the database analysis and compactions which are frequently overlooked until there is a problem. Managing the backups, IDRs, and ultimately the off-site data replication for Disaster Recovery are also handled by this service.

Ensuring the stability and availability of your systems is instrumental in helping those delivering patient care, the success of your organization and its growth. After-all, you wouldn't want to grow/expand on top of an unreliable or shaky foundation.

Let's get started.

Locks- Just like the door to your home, a lock is not necessarily a bad thing. Some locks are valid and intentional and should be left alone until cleared by a normal process. However, if you are viewing the locks within any application and notice that the records are not indexing (changing) then you may have an issue with this lock. Locks in general, should not extend beyond an 8 hour shift. If they are, then they are suspect and should warrant further investigation. Most valid locks last a few minutes; but I wouldn't get excited about one that is behind for 20 minutes as it is not uncommon for a clinician to be working on a record for that long.

Midnight run- Generally speaking, this is the sign of a healthy close of day and the start of the next 24 hour clock. It is a good practice to benchmark how long each of them usually takes to complete. If you know what a normal midnight run duration is, then you'll be able to connect the dots when certain jobs appear to be lagging behind or simply missing data. In rare cases, you might even notice that a midnight run had never completed – time for a little investigatory work.

Background jobs- Imagine a fence between two adjoining yards. You and your neighbor share gardening tools and set up a process that involves placing the tools on top of the fence when you are done with them so the other person can grab them and use them next. If my neighbor places the item on the fence, then their process is working fine; but that does not mean that I necessarily took the item off the fence for my use. That is my background process and now my garden will show signs that I did not use this item. Just as a patient record sent from ADM to PHA, does not mean PHA picked it up for use within its tables. So check both application's background jobs for activity when you see something, or in this case, don't see it. The mere act of signing into an application will sometimes start a stalled background job. Have you ever seen the temporary error message "Can't access application from this segment"? Then try again and it is fine. For a clinician, it is another error to deal with and perhaps get sidetracked; but to I.S. it is a normal part of systems monitoring & maintenance and should trigger a deeper look into integrated/interfaced processes.

Print processes- Some application specific print queue managers allow manipulation of the print-job's destination or status. Some allow holding, halting, or cancelling, and some just allow you to list what is currently in the queue. In general, viewing these processes with sufficient frequency will help you see if bottlenecks exist, problematic printers need attention, or in some cases, where there are wasted jobs & resources to clean up. Paper-less EMR is a myth; but less-paper EMR processes are not. We still print wrist-bands, specimen labels, work-lists, and patient discharge packets.

Table of contents (Alpha)

Over 70 touch points with screen shots, explanations, and a place for notes. See you in Orlando – MUSE 2016.

Consistent monitoring & maintenance of these items can reduce systems issues and support calls by 50%.

Scott A. White - MCPM – Information Systems – Saratoga Hospital

As you can see by the preliminary list on the previous page, there are quite a few vendor provided tools that can be utilized to check the health of your systems at any time. Just as there are a dozen ways to automate the output and send results to a message center, any process would still require experienced eyes on the results to determine if any one of these readings is a real issue, or just a temporary spike that needs a few minutes to finish. I've been in your shoes and was looking for automated tools that someone else provides; but in the end – we'd spend a lot of money and still end up needing an experienced team member to receive the message and mitigate.

Anyone in the audience ever been burned at the start of your day when you walk in and find yourself facing an angry environment? (Environment being people and systems.) It is often avoidable through active systems monitoring & maintenance. Some of those "Monday morning ambushes" are triggered by minor systems events that are usually caught and mitigated through a tireless ASMM process. In other words, you never miss a 2 or 4 hours block of ASMM. Sort of like those Public Safety or Security Officers at most of our hospitals. If they don't make their rounds every hour, things go unnoticed and blossom into something more difficult to deal with. It's that old adage – "Where this is smoke,…. someone didn't put their cigarette out".

Delays in patient care caused by invalid locks, hung jobs, halted processes, downed interfaces, picky print queues still being tied to an EMR process, or even a forgotten password are typically picked up by these system sweeps and mitigated long before an end user decides something is wrong and needs to call for help.

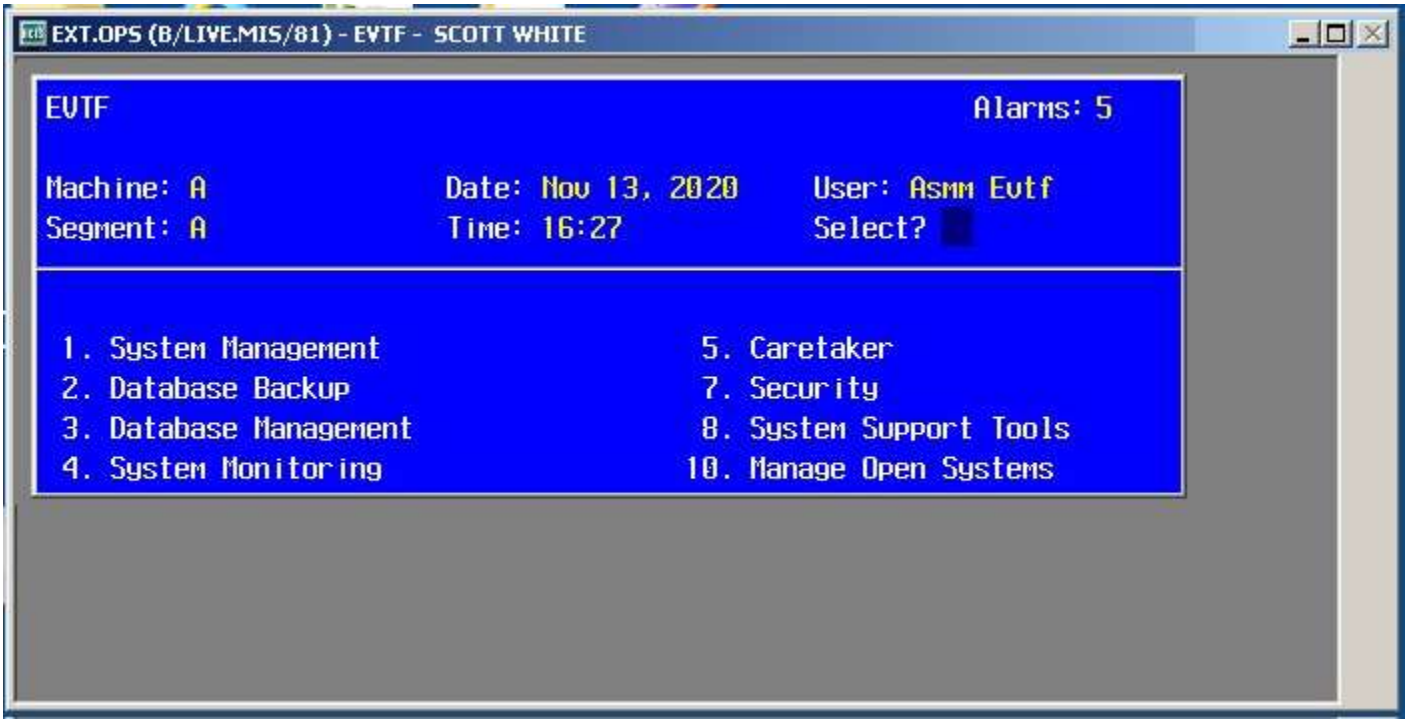
Short of securing the funding to implement the infrastructure, contracts, set up, and updates involved with those well-established firms who make a sizable profit from providing the eyes & ears for limited systems monitoring, we decided to take matters into our own hands. We've established ASMM as a priority that has no room for missed days or sweeps during each shift. By utilizing our existing front end tools, scripting, and Meditech's event schedulers, we are able to accomplish this at a cost of less than $20 a day / 7 days a week.

Doing so has reduced support call volume for related issues by 50% which also translates to fewer system generated delays in patient care, improved documentation / ordering / results, and yes……. improvements in reimbursement. (See our LinkedIn post on the ROI of ASMM in Healthcare.)

Meditech MAGIC OPS Maintenance Routines

OPS- Main Menu screen is our initial stop:

– One of the first indicators that we see in OPS is the Alarms count that is displayed on the MAIN OPS Menu. Every Meditech installation comes pre-loaded with standard Alarm conditions that will trigger a message. Fortunately, you can also customize the threshold on most activity so that you can trend and catch them before they are actually on fire. We've set thresholds to warn us of approaching dangerously low available disk space, disconnected interfaces, multiple attempts of a bad sign-on, etc. We do this through the Manage Caretaker Text Capture Dictionary. This improves the advanced notification of those run-a-way jobs or custom NPRs with Slash-variables that gobble of free space within minutes. It makes it a lot easier to triage a support call where someone is having trouble logging in; but does not know the name of their device or User.ID. It also helps identify attempts to log into the system with false credentials.



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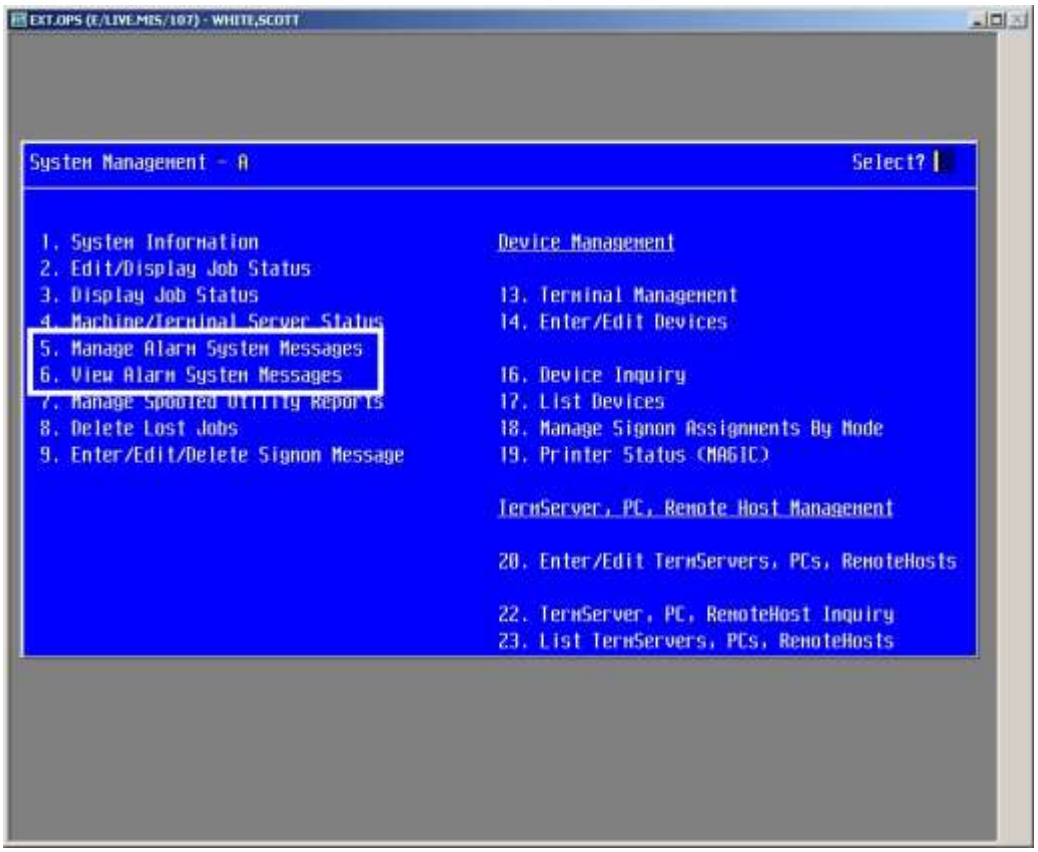
Managing System Alarms:

– The System Alarms are a great means of telling you that something has already happened. In addition to this, you can write an NPR report that peers into the system messages and sends you an email with the status/results on the things you want to automatically report to those who are responsible for this system. My NPR and process is set up to email, page, and in general, irritate me until I respond and correct the short-coming. You gotta love MAGIC.

Contact me if you'd like a copy of the NPR that does this.



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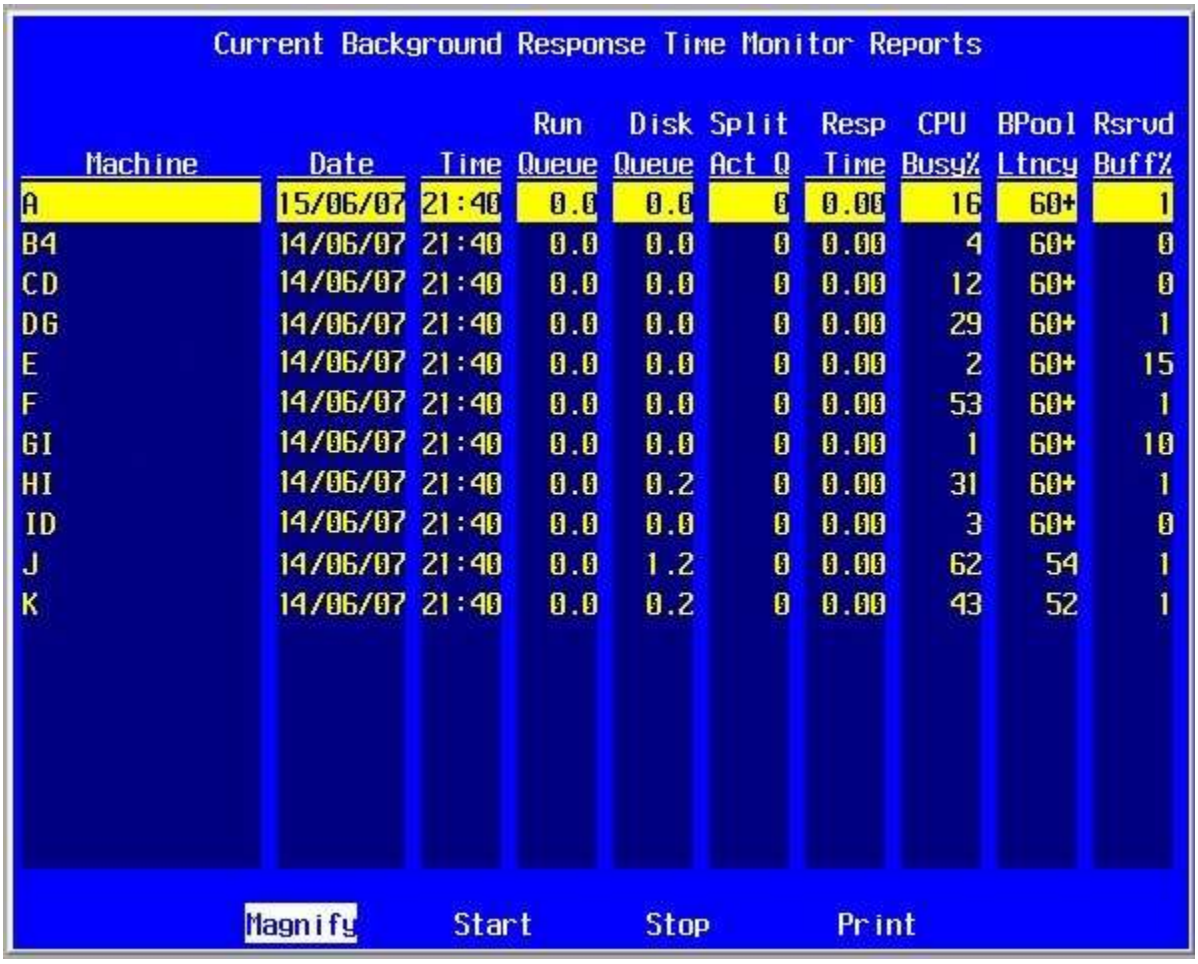
OPS- System Background, Foreground and CPU Monitoring options:

– When you know where your apps reside and you check the Who.Q , Background, and Foreground Monitor with regularity, you'll know when these numbers "look good" or not. Using these tools will allow you to drill down to the specific process/routine that is consuming disk and CPU resources. You can even manage these jobs to run at a higher or lower priority if need be. When you expand/Magnify the view on any machine, you're able to cycle through Programs and Queues/Counters. However, once you've zeroed in on a particular machine, you'd get more information using the Who.Q and Foreground Monitor (shown on the next page). Keep in mind, the numbers shown in Meditech OPS are like doing a temperature check with the back of your hand. For a true reading, use your Windows Server Utilities – System Monitoring tools – shown in the later pages of this document. However, the benefit here is that you can drill down to the problematic job and address it.



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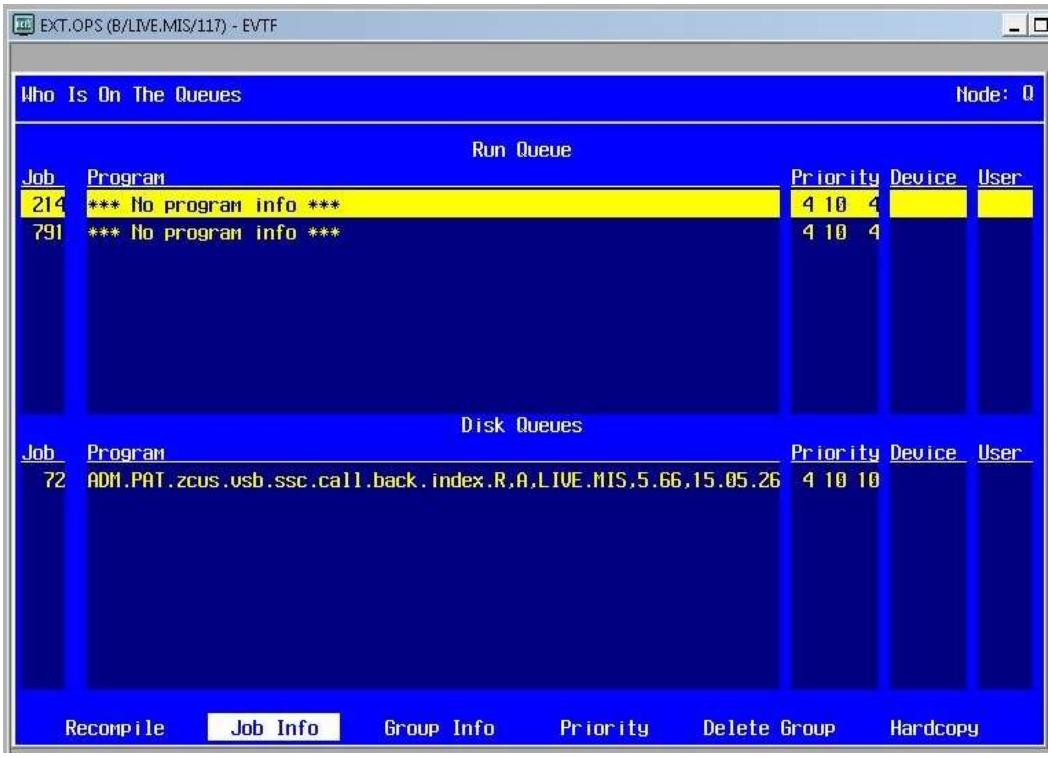
The OPS Who.Q routine:

– Looking at the example below, there does not “appear” to be a lot going on with this segment. However, the end users were reporting delays and general performance issues at this time. Drilling down into each of these jobs will show you which programs are tied to these jobs. Then drilling down into their processes will show you the query selections on specific tables and if there are any index issues contributing to the performance problem. Refreshing the Who.Q with a Recompile every 5-10 seconds will show you which jobs/programs are remaining in the queue as others just drop off. Those that stay in the queue for a “long time” are suspect and warrant a deeper dive.



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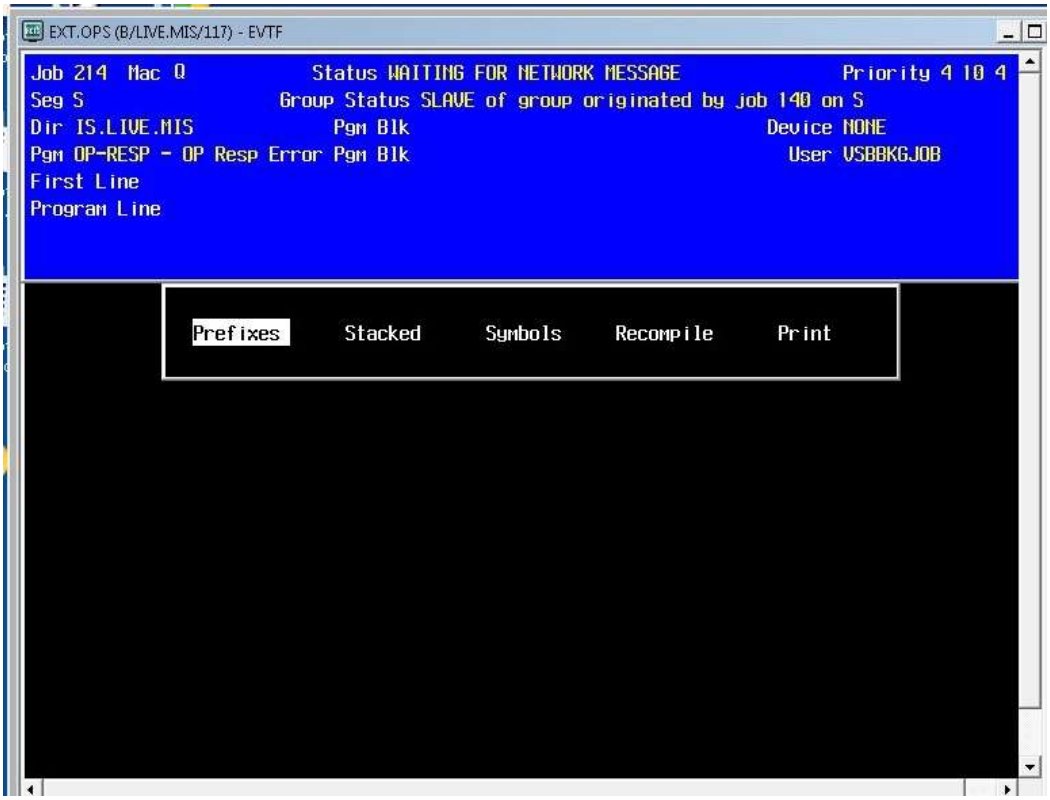
Who.Q expanded view (Job Info):

-This routine allows you to see the Directory and Program tied to those *** No program info *** jobs as well as those where it states what is running. From the example above, we've drilled down to obtain more of the specifics on that unknown job that is running at a high priority of 4. From here we can view the Prefixes, Stacked, and Symbols tables to see if they have any error information to provide, or just another bread crumb closer to the routine that will point to the culprit. There are entire chapters on error decoding from the Prefix/Stacked/Symbol tables. See Meditech SYSOP manual for more.



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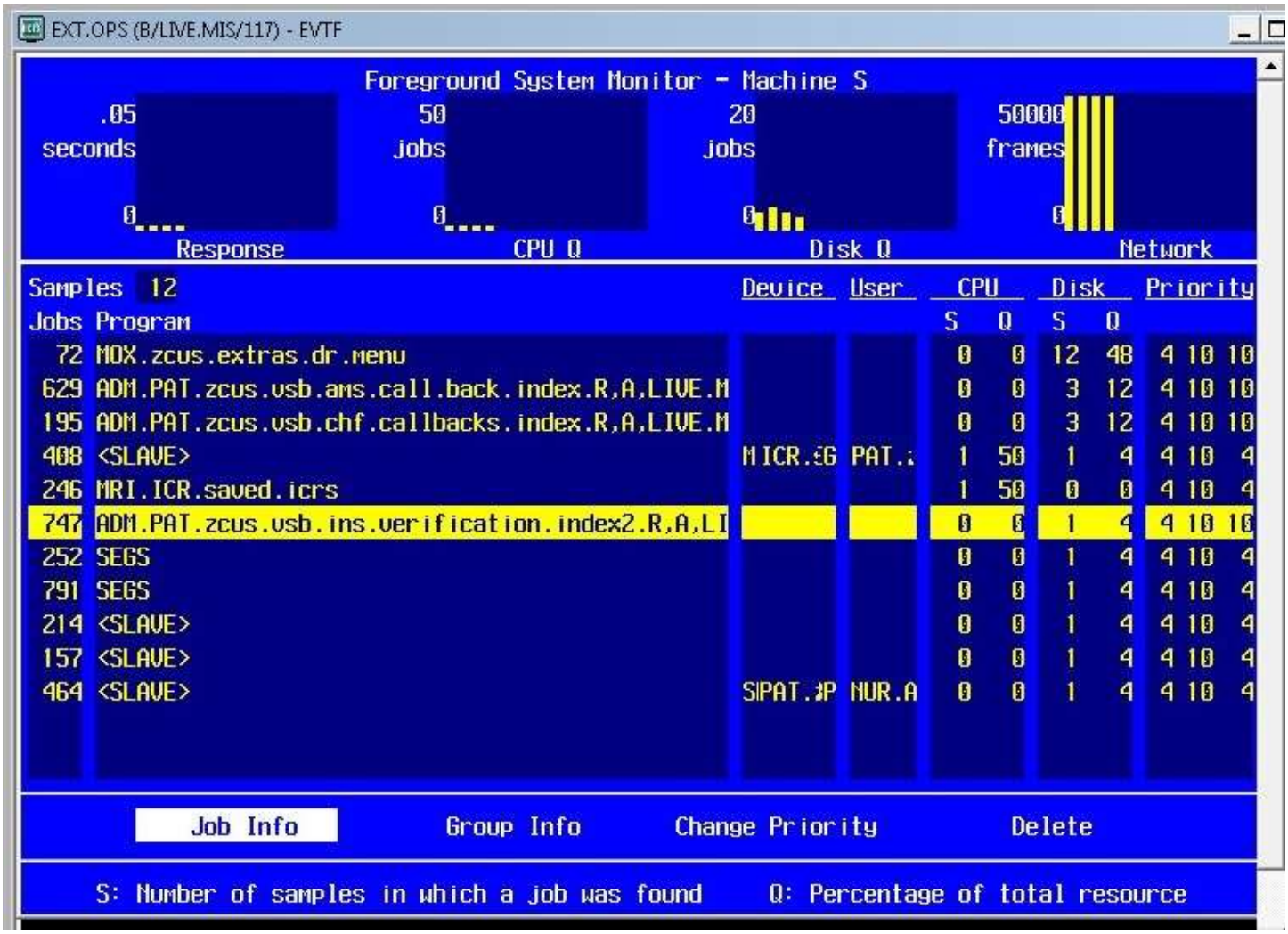
The OPS Foreground monitor:

-The OPS Foreground monitor allows us to run multiple snap-shots of activity on a given segment and watch how it is trending in real time. We can also drill down into the specific jobs captured during the sampling. This is just another way of getting at the information; but with a little more visibility on overall performance and narrowing down your focus on suspicious jobs more quickly. When workstation users are reporting poor response rates, the Foreground Monitor can help identify specific contributors and provide you with the tools to change its priority as well as delete the offending job.



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Monitoring the LPR print queue:

– When printers are not completing their jobs in time for the next print job to come in, the print jobs will queue up.

This can delay discharges when patient packets are required, registrations when forms are needed, and some patient orders and scripts that still rely on paper output. This also impacts financial functions like claims processing and ancillary support like the LAB work lists as well as specimen labels and patient wrist bands.

The LPR print queue allows us to zero in on a problem printer. We can halt and restart the queue, kill the locked job, or begin trouble-shooting the settings, connectivity, and end user environment (Powered On, Online, and has paper). Recurring issues with the same printer also help draw attention to the need to adjust that printer's settings based on its use, sleep settings, PCL code issues, and in some cases – when a printer is no longer needed. The numbers provide facts to support printer consolidation and $avings. Running the Front-end RP.STAT routine is covered later in this document.

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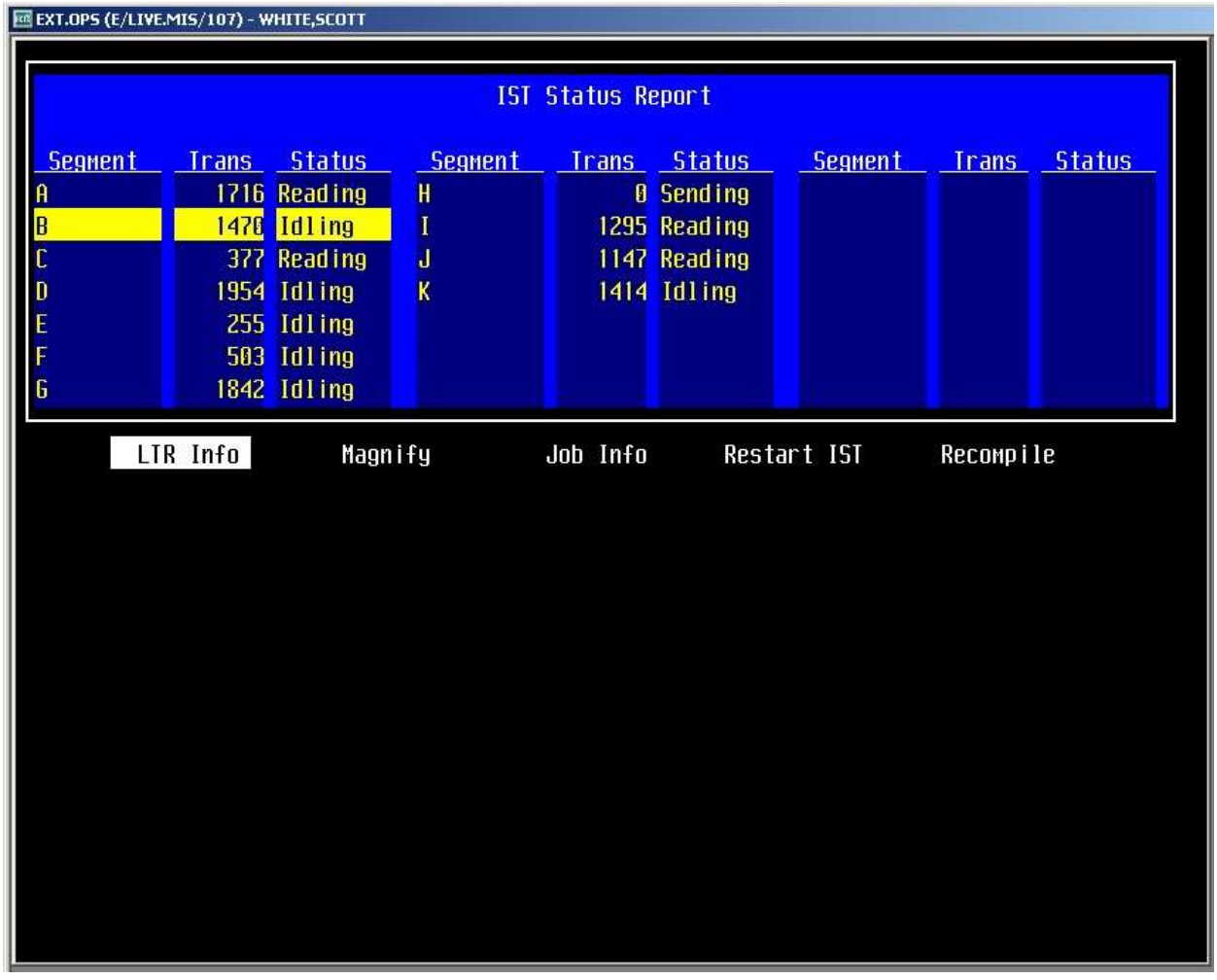
Monitoring the IST:

– When resources are overwhelmed or if there are problems with the various MAGIC databases updating each of the segments, the IST count will go up. A normal range would be anything below a count of 50 transmissions. A symptom often reported by users in the example below is slow system response times or missing data (which results from the queue getting back-logged as shown below).

What can be done about it if found as high as this example?

View the LTR info across each segment to see which job is being processed. If the numbers are this high and the database connectivity is not an issue, then we have a problematic job that should be halted and addressed. Then stop & restart the IST and you should see the counts going back towards zero again.



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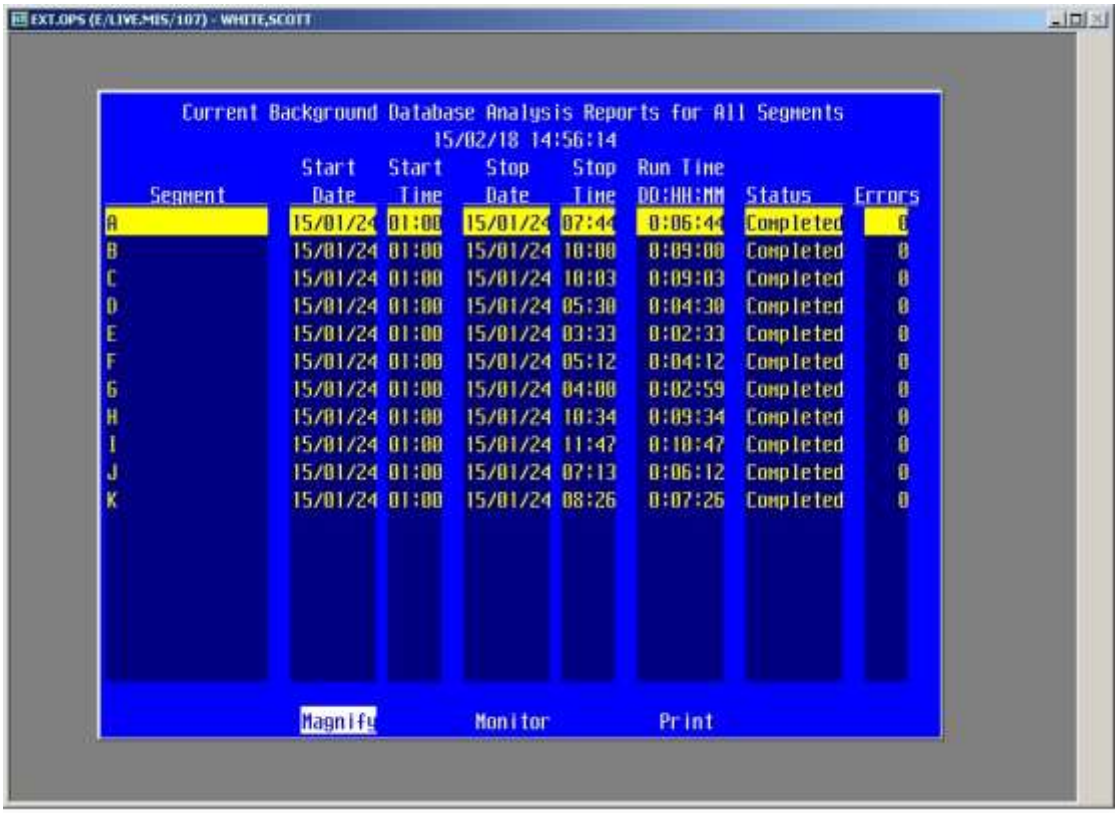
Database Analysis (DBA):

– The DBA should be run at least once a month to compare data structures and the integrity of the records stored in your systems. It also ensures that your backup system is backing up valuable and recoverable data instead of garbage. This should be run prior to a compaction on your database. If the DBA results in errors being reported, work with your vendor to assess the criticality of the error(s). Once resolved, either run the DBA again until you have no errors reported, or go ahead with the compaction if the error is immaterial.



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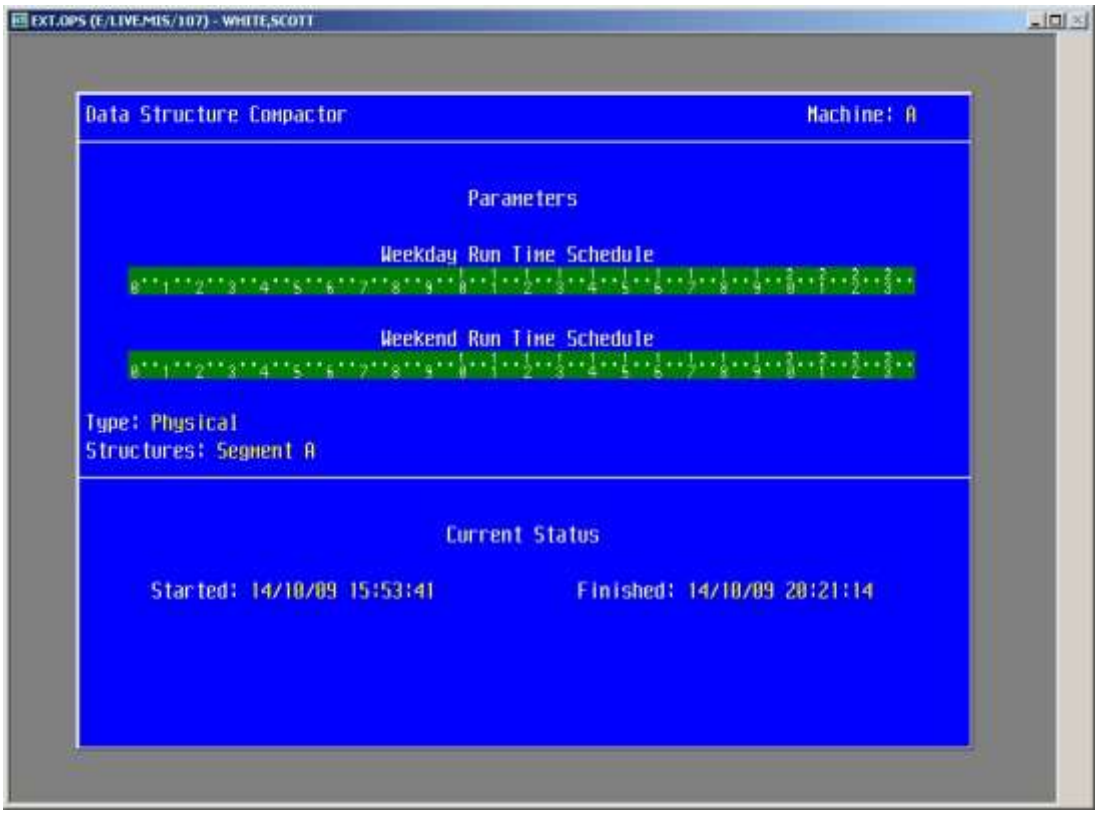
Database Compaction:

– The Database Compaction is used to free up or recover unused space on your Meditech disks. When the compactor is run, sites observe healthy gains is available storage space without the need to add disks. This also helps with the performance of disk writes due to the nature of organizing the used and available space in such a way that the data writing processes do not have to search as long for sufficient free space.



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Storage Analysis:

– The Storage Analysis is helpful in monitoring your remaining available storage space for the Meditech applications. You can run the Compare routine to see how fast you are eating up space, or confirm that your file maintenance parameters are keeping the growth rate in check. This is also a good indicator of a run-away report that uses what is known as /Variables, and if they are large enough (Finance) they can wreak havoc with systems performance and available disk space. Using the Compare and Recount routines repeatedly over the course of 15 minutes will quickly uncover a problem job that needs to be addressed before you run out of space. This routine is also used in planning the next and subsequent projects, upgrades, and expansions. Failure to keep an eye on this will bite you in the end and the process of frantically trying to keep the systems from crashing, during the fire, is a thousand times worse on your team than this proactive approach.

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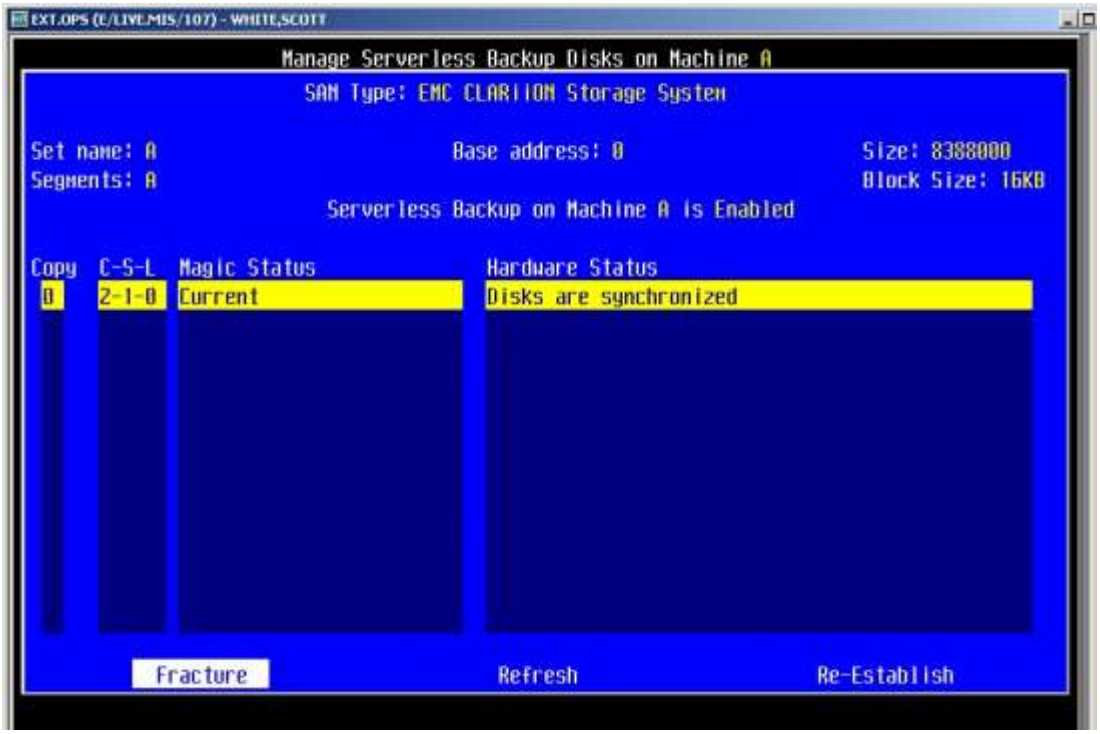
Serverless Backup Disk Check:

– The Serverless Backup Disk Check is the fastest way to see if your storage array is being managed appropriately at strategic times of the backup cycle. Of course, we'll cover Bridgehead, Networker, and Unisphere steps for this as well; but OPS is the quickest way to check the status. This routine can also be used to trouble-shoot a backup issue if your backup solution is failing to initiate the Fracture and Re-Synch. If you can do both from this console, then your Meditech SAN is fine, focus your trouble-shooting on the other products instead.

Of course, you can also log into your non-Meditech backup solution (Bridgehead, Networker, etc.) and work through those tools; but this page is focused on the Meditech provided tools. See Bridgehead and other solutions further on in this guide. See later pages for information on product specific backup solutions monitoring/maintenance.



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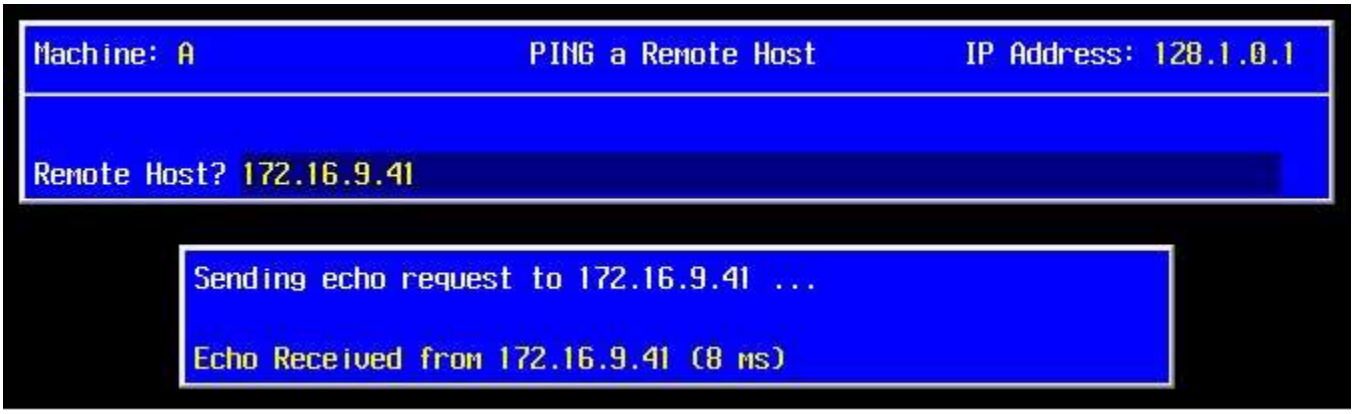
Testing network connectivity from within MAGIC:

– Pinging from the workstation's desktop or command line is one thing (and advised); but what is Meditech seeing? If your end users are reporting slow response times or general performance issues, then gathering PING results from the desktop as well as within Meditech can help determine if the problem is more network systemic or limited to the Meditech systems network. Running other applications from the remote desktops and comparing their performance to Meditech's performance will also help in trouble-shooting; but the PING test is a quick and simple tool that gives numerical evidence that is often needed when involving:

Network Vs. **Meditech** Vs. **Workstation** Vs. **End User Perception**.



You can also run Trace-Route to check hops through Meditech OPS.

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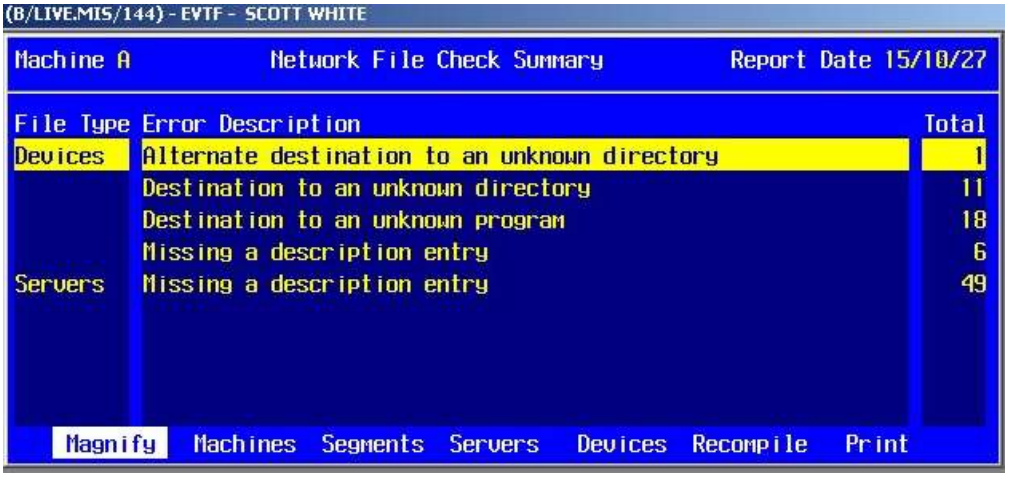
OPS – Network File Check-

– Running the Network File Check Summary after any systems changes/updates/upgrades in general is a very good practice to put in place. I'd suggest that you at least run this once a year as you're likely to see results of settings that are contributing to end user problems and support calls. Prime example are the devices that have an unknown destination or program. Mis-keyed settings (transposed or otherwise) are easy to remedy in the device settings once you are aware of them.



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OPS – Interrupt Activity-

– Running the Interrupt Activity report is helpful if you are seeing performance issues on the client workstations. In this example, we were receiving reports of severe lag time from clinicians accessing apps that reside on our K segment. After viewing CPU utilization and finding nothing out of ordinary there, we viewed this report and found that the disks were pretty active compared to other segments where performance was not an issue. This helps to focus the path of remaining trouble-shooting steps on processes that are querying as well as updating records within Meditech. In other words, don't use that old stand-by of "blaming the network" when it has little to do with what is causing the problem. We can save that one for those times when we can't figure out what is causing the problem.

Interrupt Activity on A

System Counter Information

Average Frames Received per Second	6424
Average Frames Transmitted per Second	8279
Average Disk Reads per Second	6
Average Disk Writes per Second	1
Average Interrupts per Second	14703
Total Device Specific Samples	4285140

System Device	Pct of Interrupts
Ethernet transmitter	97
Ethernet receiver	2
Controller 2	0

Interrupt Activity on K

System Counter Information

Average Frames Received per Second	6967
Average Frames Transmitted per Second	7210
Average Disk Reads per Second	**314**
Average Disk Writes per Second	**251**
Average Interrupts per Second	14736
Total Device Specific Samples	3984950

System Device	Pct of Interrupts
Ethernet transmitter	40
Ethernet receiver	2
Controller 2	57

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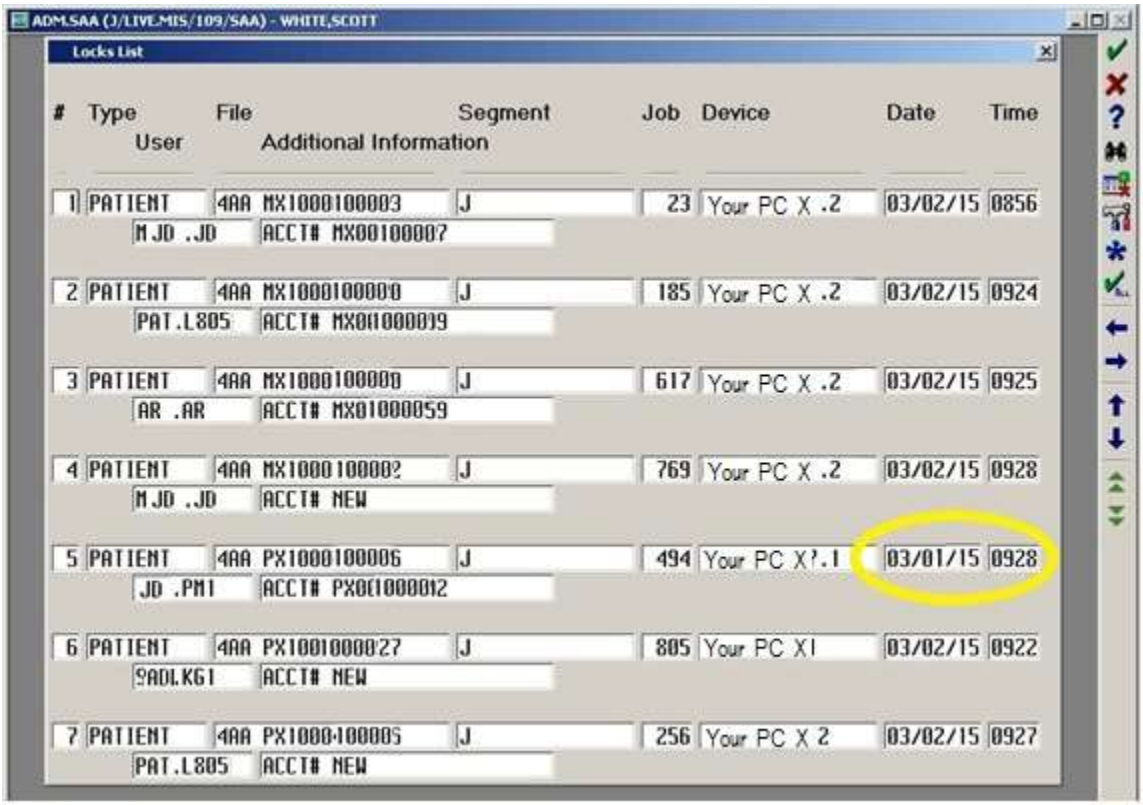
Managing ADM Locks:

– The ADM Locks routine is a good tool for catching those lost or crashed jobs that create locks on records as well as troubleshooting calls after the fact. As seen in the example below, there are several “valid locks” which are a natural part of the patient access routines. Some locks are healthy, in that they are LIVE jobs where the record is in use and should not be terminated. However, in the circled example below which shows a locked job that is approximately 24 hours old, it is best to clear this lock preemptively to prevent problems for the next person that needs to use this record downstream. The benefits to doing this are: reliable access for the next person on this record, one less overnight phone call to I.T. support because of a locked record, increased confidence in the systems by the end users, reduced costs in running the business when you aren’t forced to touch the same record dozens of times due to these errors, and your I.T. teams ability to avoid these unplanned distractions.



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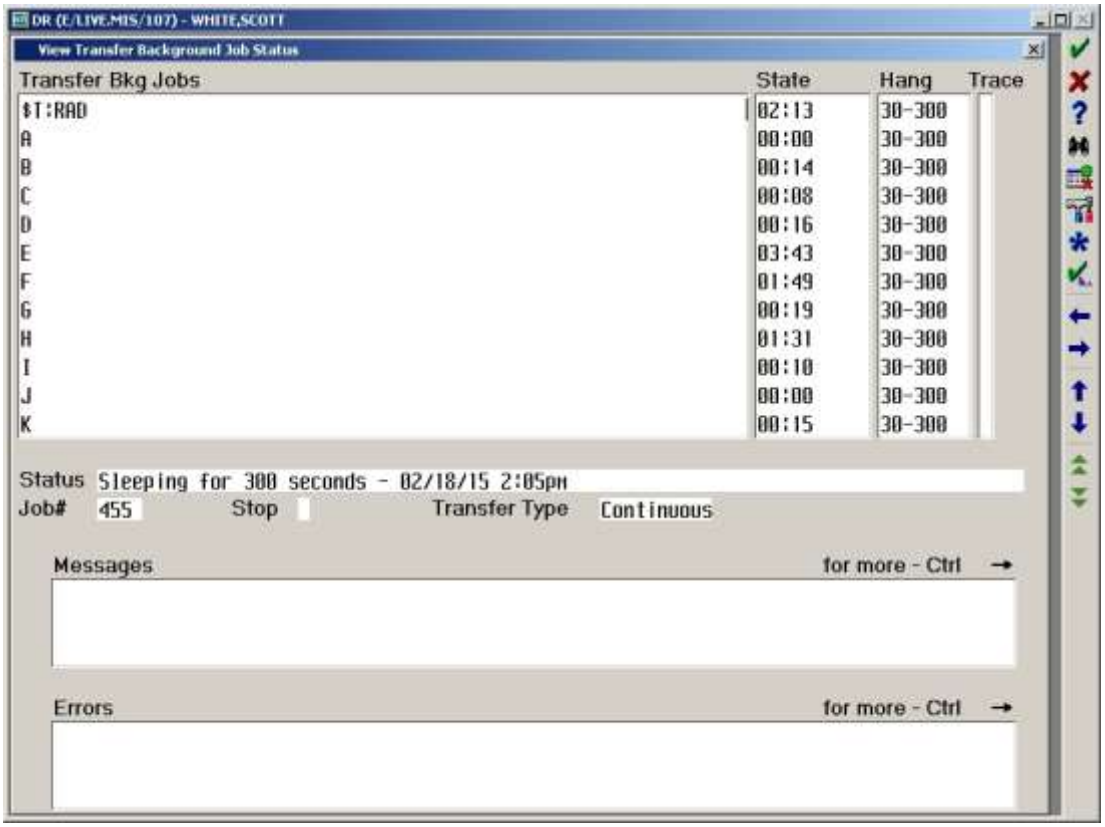
Meditech's Data Repository Background Transfer Queue:

– The D.R. Transfer Queue is a nice tool for checking the status on the flow of data from each Meditech server to the SQL Data Repository. When your SQL server starts acting up (like a typical SQL server), you'll see errors appear on the segments listed in the Background Transfer Queue. "Cannot connect" and "Check Job" errors are of larger concern; but the error "Expander missing" hasn't proven to be particularly troublesome for a few sites reporting it. It's a good idea to run your reconciliation reports within D.R. against your source data in Meditech just the same. I'd also suggest semi-annual scheduled reboots of your SQL server to clear any "build up" associated with most SQL servers.



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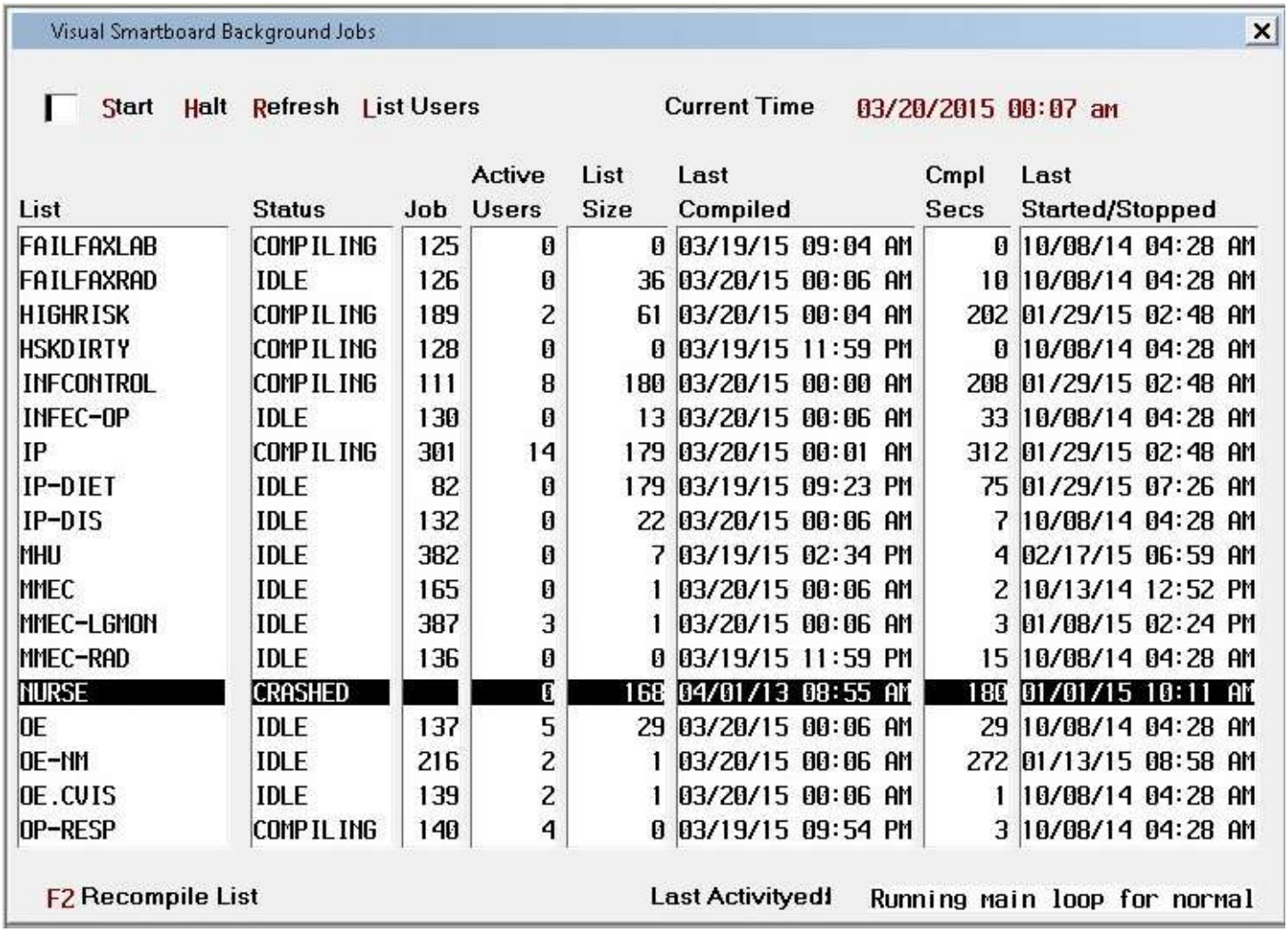
Iatric's Visual Smart Board Background Monitor:

– The VSB Background Monitor is a great tool for quickly viewing high level VSB activity across the organization. From the example below, you can see that one of the smart boards has crashed. If you catch these before an end user logs on to use it, then you've prevented another support call, helped instill faith in "Meditech applications", and assisted in the ever growing challenge of patient flow processes.



List	Status	Job	Active Users	List Size	Last Compiled	Cmpl Secs	Last Started/Stopped
FAILFAXLAB	COMPILING	125	0	0	03/19/15 09:04 AM	0	10/08/14 04:28 AM
FAILFAXRAD	IDLE	126	0	36	03/20/15 00:06 AM	10	10/08/14 04:28 AM
HIGHRISK	COMPILING	189	2	61	03/20/15 00:04 AM	202	01/29/15 02:48 AM
HSKDIRTY	COMPILING	128	0	0	03/19/15 11:59 PM	0	10/08/14 04:28 AM
INFCONTROL	COMPILING	111	8	180	03/20/15 00:00 AM	208	01/29/15 02:48 AM
INFEC-OP	IDLE	130	0	13	03/20/15 00:06 AM	33	10/08/14 04:28 AM
IP	COMPILING	301	14	179	03/20/15 00:01 AM	312	01/29/15 02:48 AM
IP-DIET	IDLE	82	0	179	03/19/15 09:23 PM	75	01/29/15 07:26 AM
IP-DIS	IDLE	132	0	22	03/20/15 00:06 AM	7	10/08/14 04:28 AM
MHU	IDLE	382	0	7	03/19/15 02:34 PM	4	02/17/15 06:59 AM
MMEC	IDLE	165	0	1	03/20/15 00:06 AM	2	10/13/14 12:52 PM
MMEC-LGMON	IDLE	387	3	1	03/20/15 00:06 AM	3	01/08/15 02:24 PM
MMEC-RAD	IDLE	136	0	0	03/19/15 11:59 PM	15	10/08/14 04:28 AM
NURSE	CRASHED		0	168	04/01/13 08:55 AM	186	01/01/15 10:11 AM
OE	IDLE	137	5	29	03/20/15 00:06 AM	29	10/08/14 04:28 AM
OE-NM	IDLE	216	2	1	03/20/15 00:06 AM	272	01/13/15 08:58 AM
OE.CVIS	IDLE	139	2	1	03/20/15 00:06 AM	1	10/08/14 04:28 AM
OP-RESP	COMPILING	140	4	0	03/19/15 09:54 PM	3	10/08/14 04:28 AM

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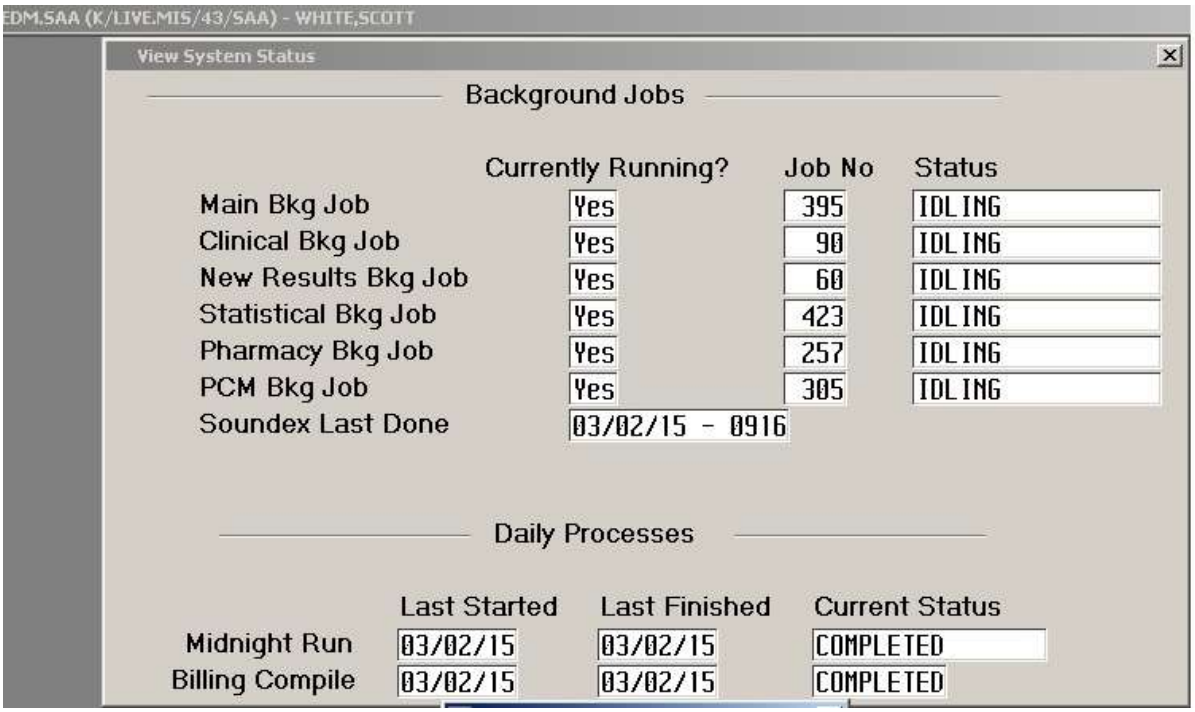
EDM Background Jobs / System Status

– The EDM Background jobs monitor is another cog in the wheel that allows you to see the current status of the background jobs that interact with other tables within Meditech. Think of it as the listening port for transmissions coming from each of the other tables/jobs you see listed below. If users are reporting data not being present and you see the background job running for the table that stores that data, then check the sending module's background jobs. Sometimes it is the sending application that is not functioning and this snapshot will help you eliminate another variable while trouble-shooting. Also, you can take the JOB numbers from this screen and use them to dig further into the activity through the Edit/Display Job Status routine in OPS. Recompiling the view of the job and studying the Symbols table will often demonstrate whether it is cycling through the records or HUNG.



Notes: _____

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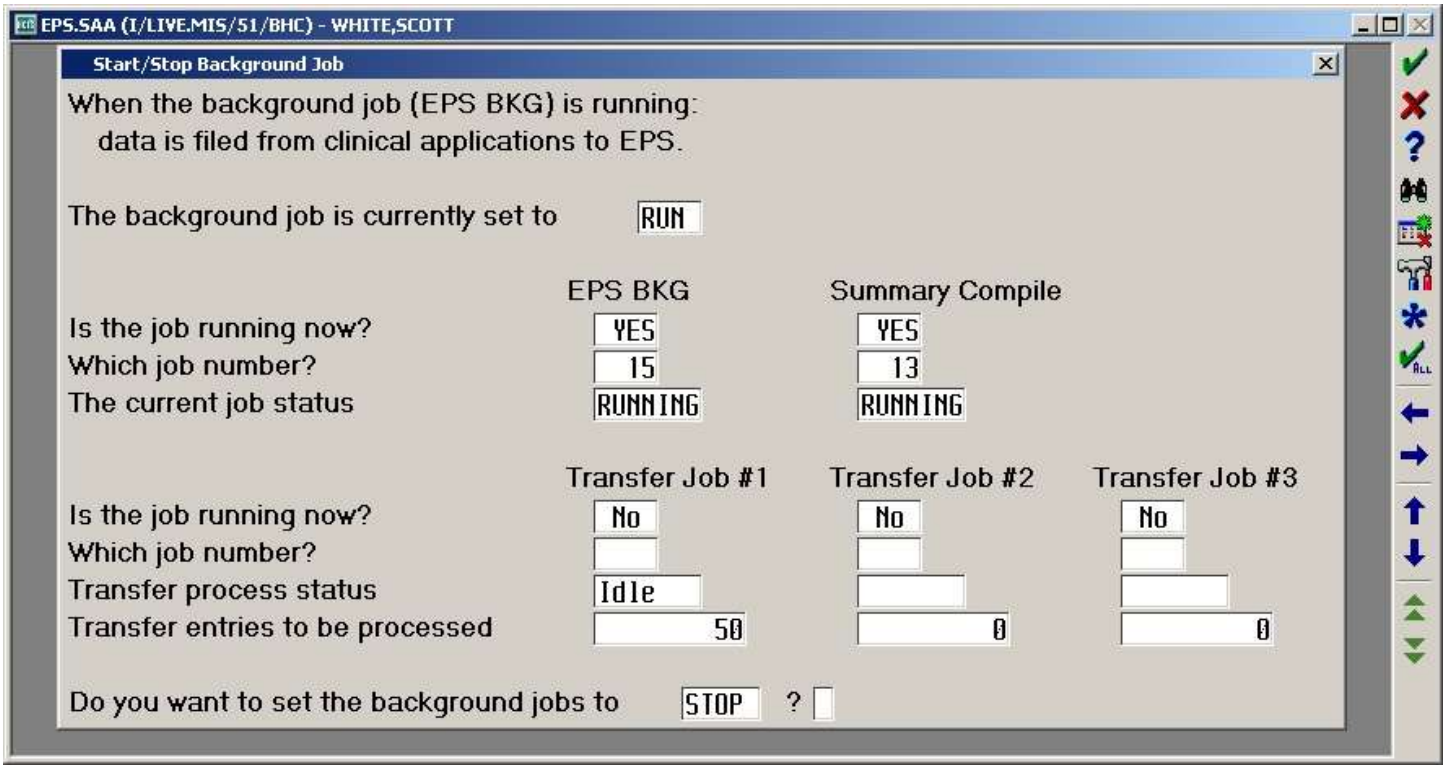
EPS Background Jobs

– The EPS Background Jobs status routine not only allows you to see the current status of the background jobs; but it also allows you to STOP & START these jobs. Sometimes a background job is simply stuck on a record and needs to be restarted, just like your PC does. You can take the JOB numbers from this screen and use them to dig further into the activity through the Edit/Display Job Status routine in OPS. Recompiling the view of the job and studying the Symbols table will often demonstrate whether it is cycling through the records or HUNG.



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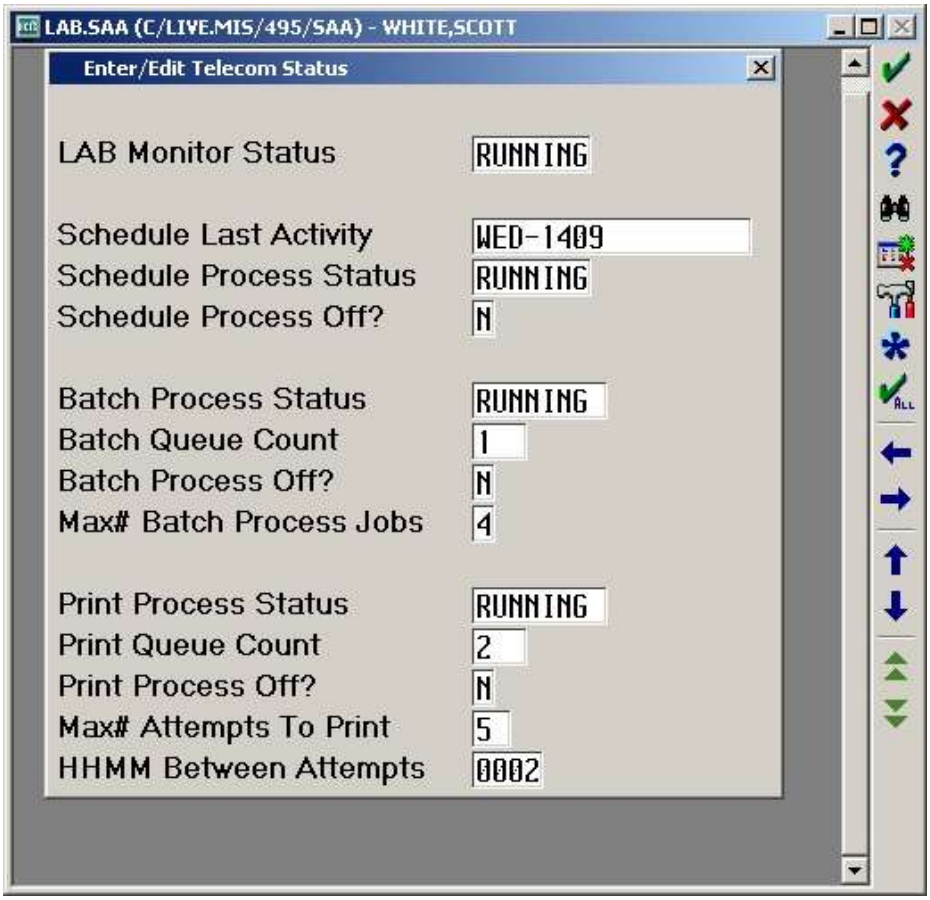
LAB Telecom Status

– The LAB Telecom Status routine is used to manage the general delivery function and status of all Telecom reports that are processing. You can see if it is running and processing LAB reports for delivery and either HALT or START these background jobs from the same screen. When users report that LAB results are not being printed/faxed to providers, we check this screen along with the Report History to see if it is running and what it has attempted to send. If nothing was sent; but should have been – you can reset the Telecom jobs here by shutting them off, and then a few minutes later, turning them back on.



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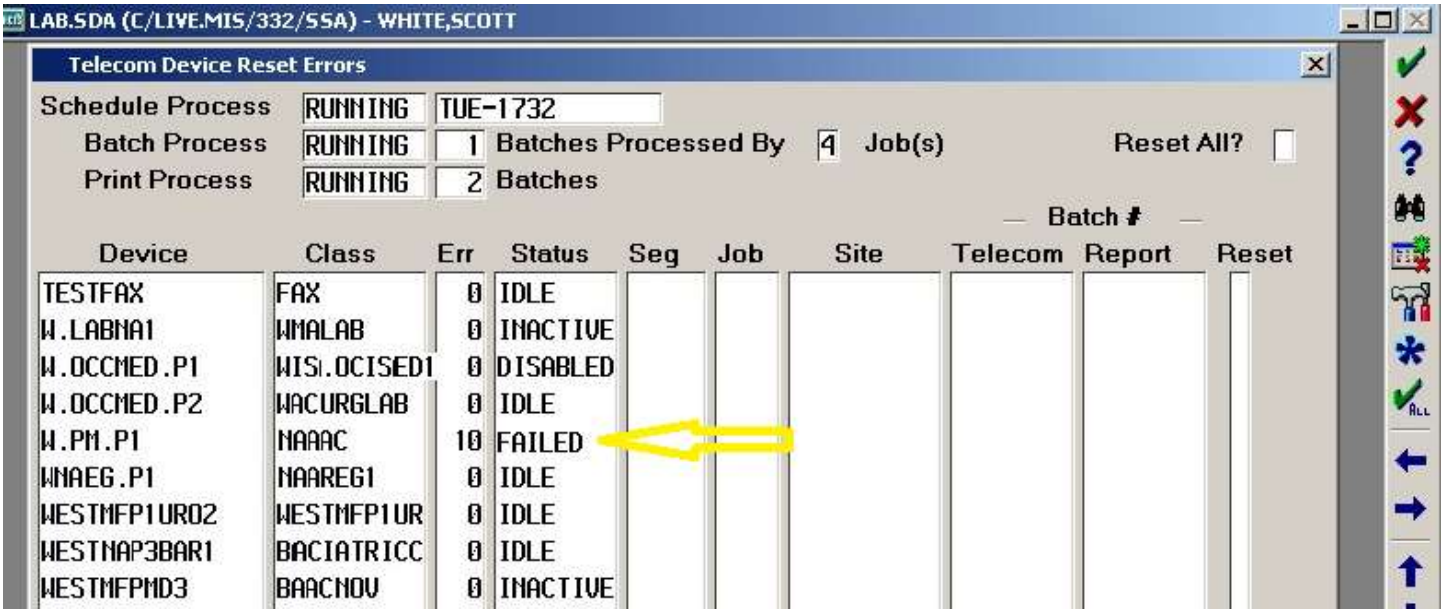
LAB Telecom continued – Telecom Device Reset Errors routine.

You'll also notice the ability to reset specific "reports/results" errors for those outbound Telecom transmissions.

This routine allows you to not only reset the failed job; but to also reroute to an alternate site if you are encountering issues with the original site.



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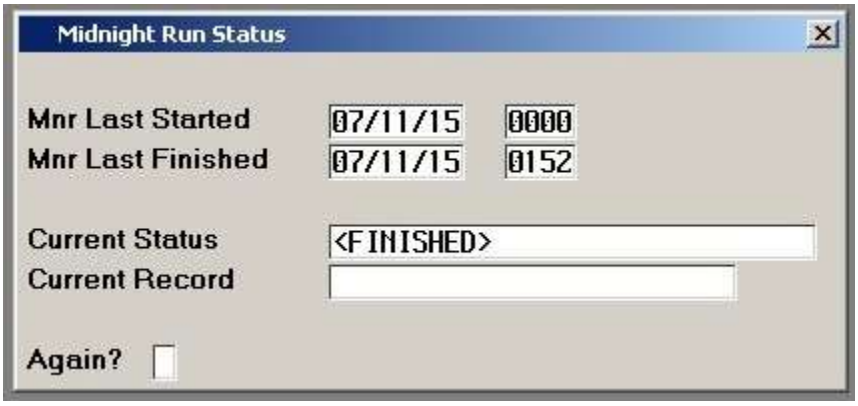
MRM / SCA (Scanning and Archiving) Midnight Run:

– The midnight run. Did it run last night? Is it still running after 2 hours? How long is it taking to complete? Some are done in 1-2 minutes while others take up to 2 hours. It's important to benchmark & trend them so that you'll see when something changes and be able to key off of that change to proactively correct a problem before an end-user runs into it. If it is still running and is well beyond its usual run-time, it may be stuck on a record or just plain crashed and needs to be addressed.



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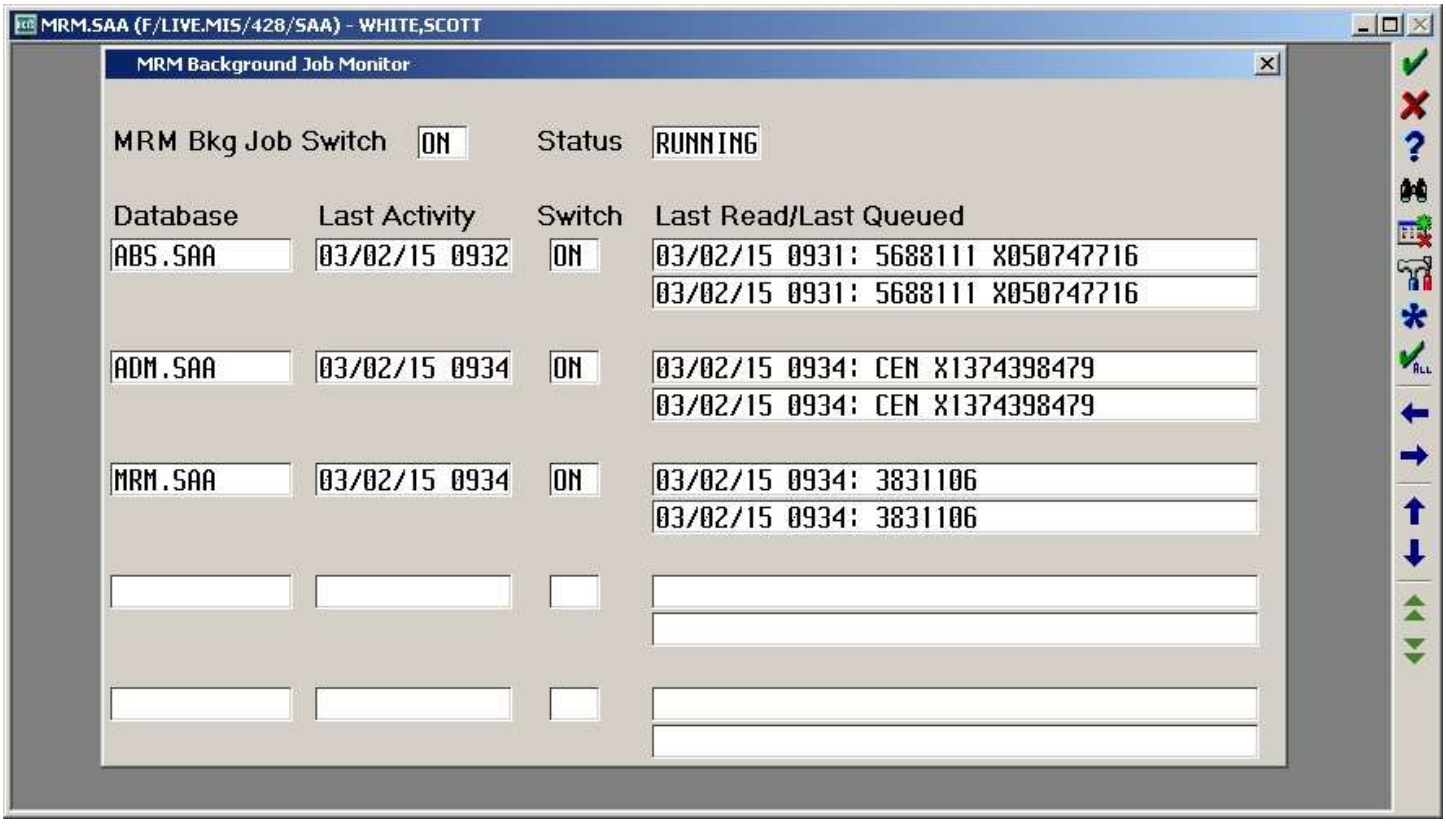
MRM / SCA (Scanning and Archiving) Background Job Monitor:

-The MRM / SCA Background Job Monitor is used to confirm that we are receiving the data from the feeder applications listed below. As seen in other background job monitors, we can tell when the last record was pulled into SCA. If you are missing updates from other applications in your medical records, this is a good place to check for activity.



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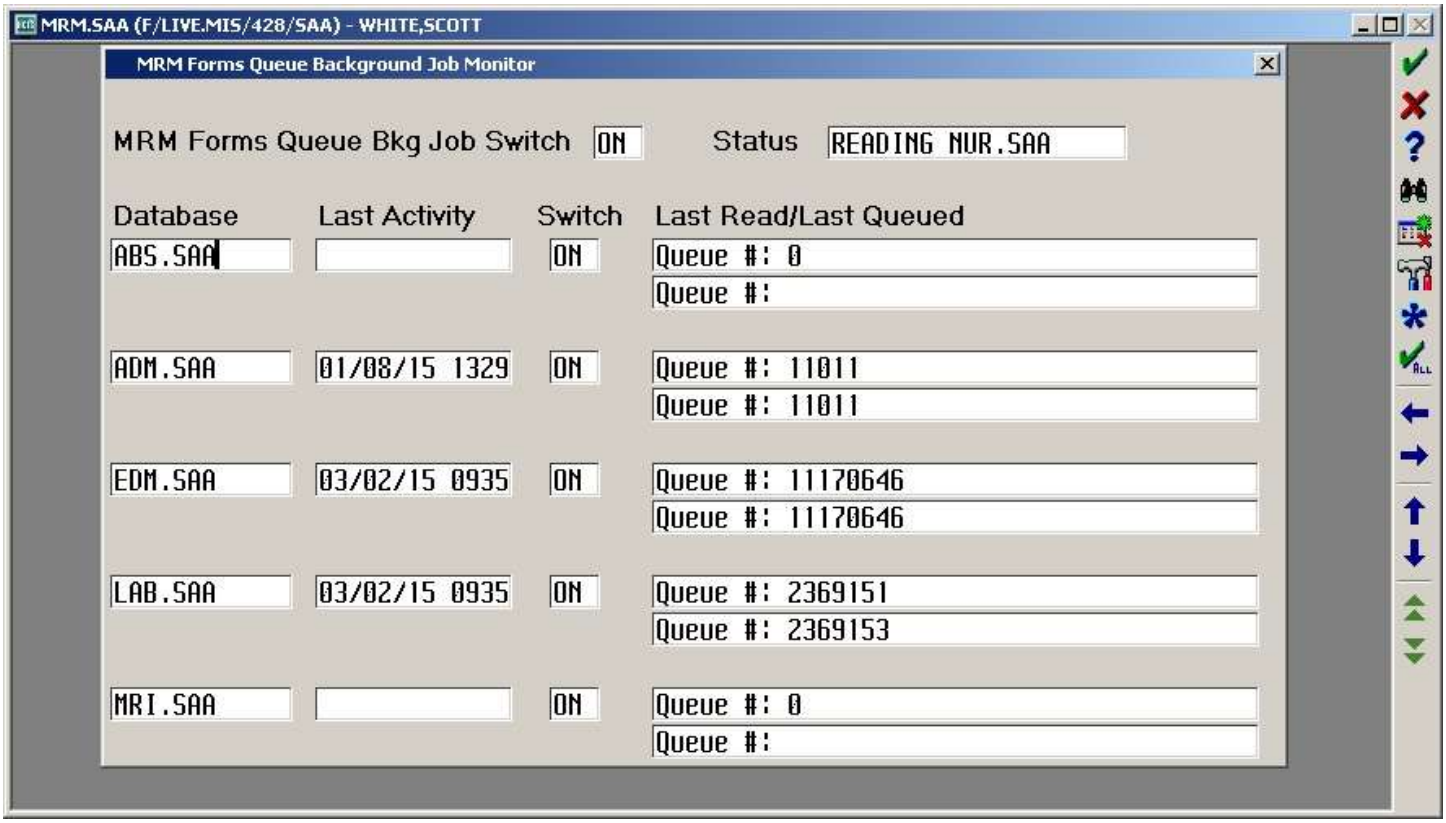
MRM Forms Queue Background Monitor

-The MRM forms Queue Background Monitor demonstrates which specific records (forms) have recently processed. OR in the case, which one processes last. Unless you are utilizing all aspects for forms capture within all modules, you'll need to pay attention to the "base-line" here and not become alarmed when one of the databases has not had activity in a few weeks. It is sometimes the case that not all areas regularly scan forms into SCA. However, if you are one of those sites and scans EVERYTHING in from every customer touch-point, then you'll want to look into those with a last activity which is older than today.



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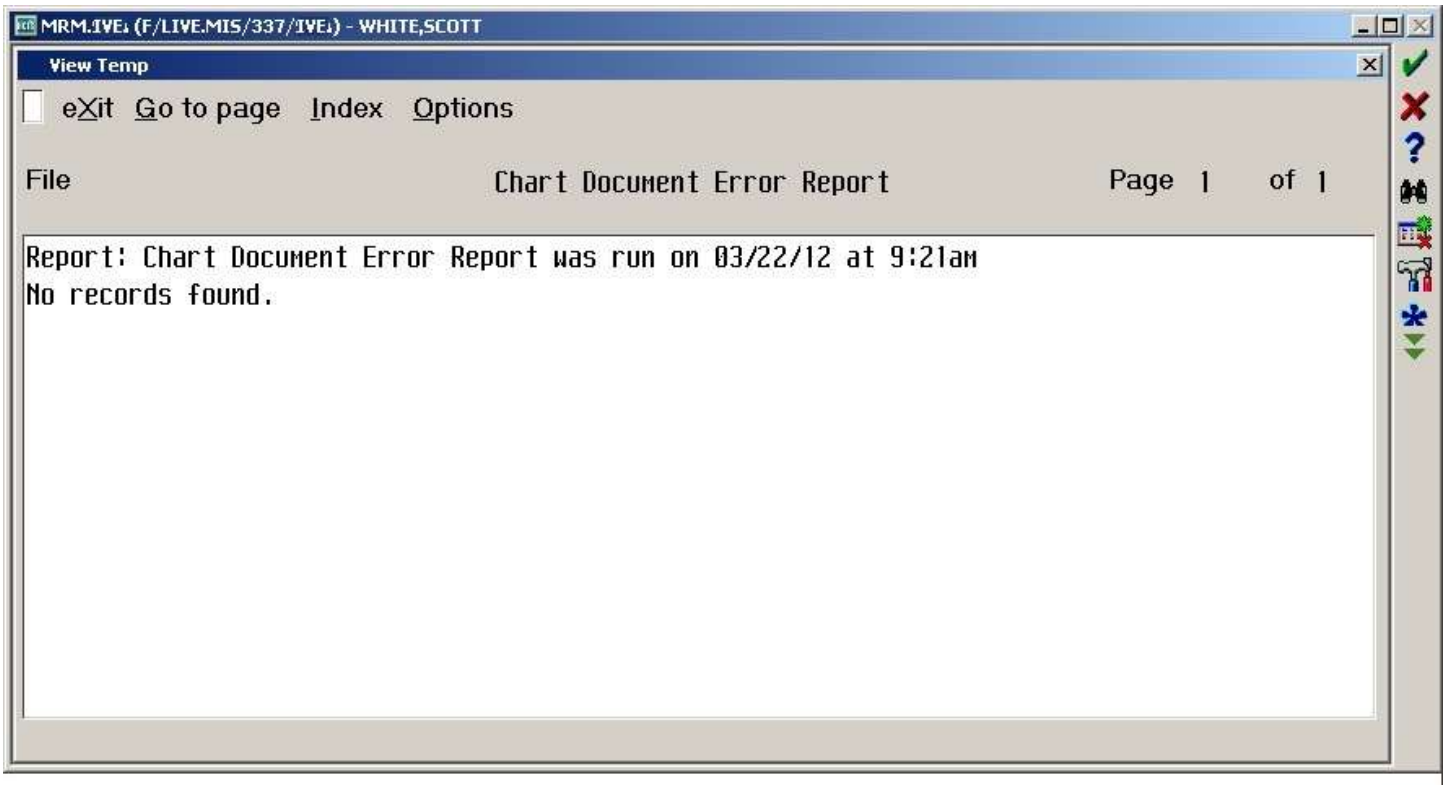
MRM – CDER - Chart Document Error Report

-The MRM CDER is used to trouble-shoot chart job issues by listing errors for documents that are on the fail queue. When you encounter errors in this list, you'll need to contact MEDITECH support to remove the errors and requeue the CDER. One of the common causes of errors here is when a site does not define a form source to a NUR Parameter under Report / Format / Med Rec Form. There are so many moving parts in these systems that if your organization does not have GOOD compliance with a Change Management process, issues like this pop up frequently and in other apps. To be explained later…..



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MRM – Outbox Status –

-The MRM Outbox Status will show you the number of messages that are queued, or in a bad scenario – how quickly the count of messages is growing. It is OK to see a few in the queue; but they should move through in a reasonably short time frame. However, if you see thousands of messages queued, then most likely a service has stopped. Users typically report they are seeing an "unable to retrieve image" message when attempting to look at an image that has been archived. This is sometimes caused by the print server disk filling up, creating a back-log in the feed and stopping services. Messages then pile up in the Outbox. This is very rare; but it is good to check on it just the same.

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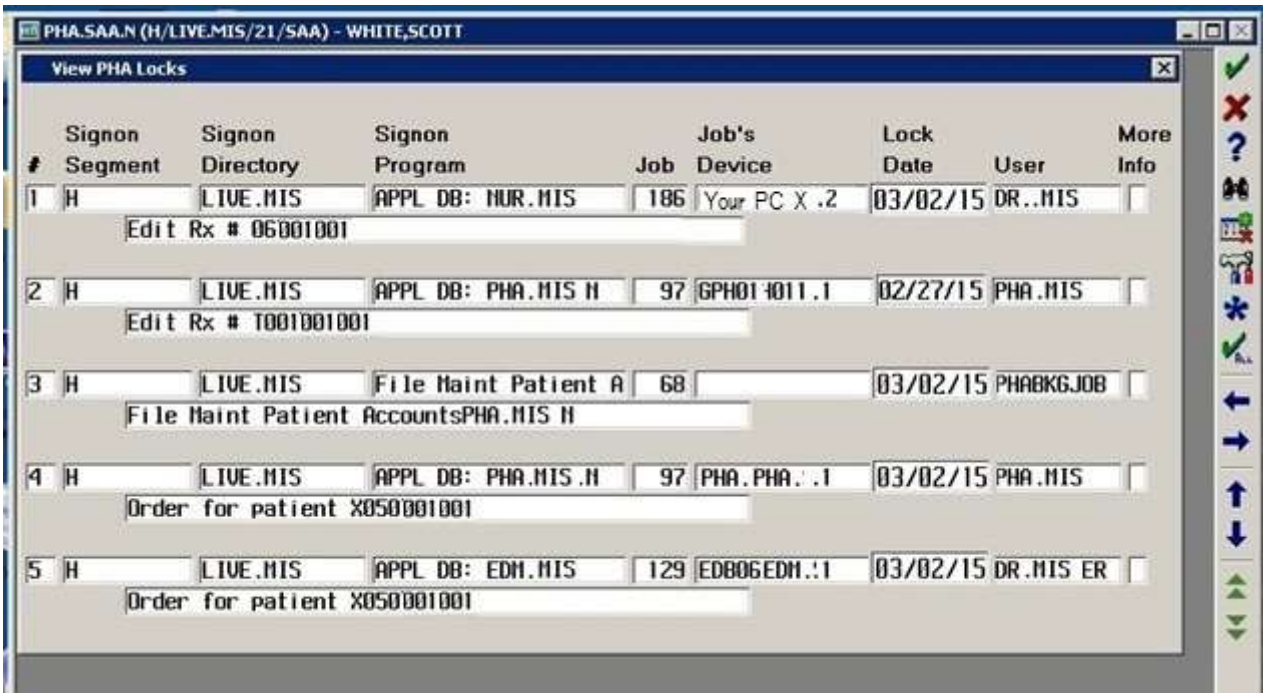
Pharmacy Locks List:

– The Pharmacy Locks List will show you valid/active locks created by users accessing the patient's RX records via any of the integrated applications – PWM, PHA, RXM, NUR, POM, etc.. It also shows valid locks created by background jobs that transmit and update other tables within Meditech. However, if you trend this throughout the course of a day and compare the results of earlier scans, you will occasionally notice that some locks remain on this list for anywhere between 4 hrs and 4 days. Symptoms of problematic locks include irritation, stress, feelings of helplessness, and constipation …….oh wait, that's the human toll side of it. Clinicians will be unable to access the records when needed and some background jobs will hang and become backed-up (constipated). This creates additional issues with the integrated apps. waiting for data to cross.

For more details on this see:

Article ID: 12863 **Date:** 1/2/2002 **Published:** 1/2/2002	**Application:** PHA **Subject:** Locks **Platform:** MAGIC



Notes: _____

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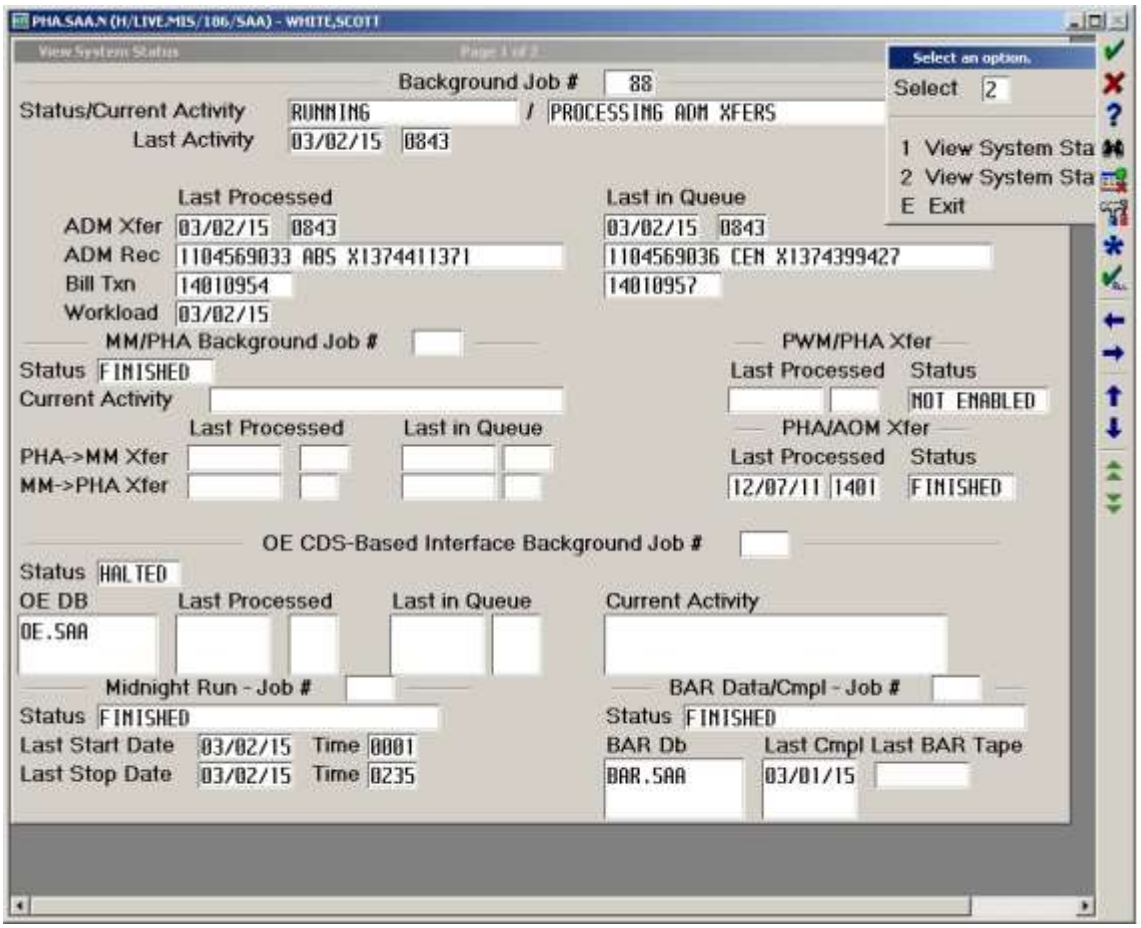
Pharmacy Background Job Status:

– Depending on your parameter settings, work flows, and frequency of feature utilization, you'll need to establish a benchmark for "what is normal" in your facility when everything is running as expected. Looking at the example below, you'll notice that some date fields are current, some are very dated, and some are disabled. FYI – nothing was wrong during this sweep; but your facility will be interested in those fields which should be near-real time.



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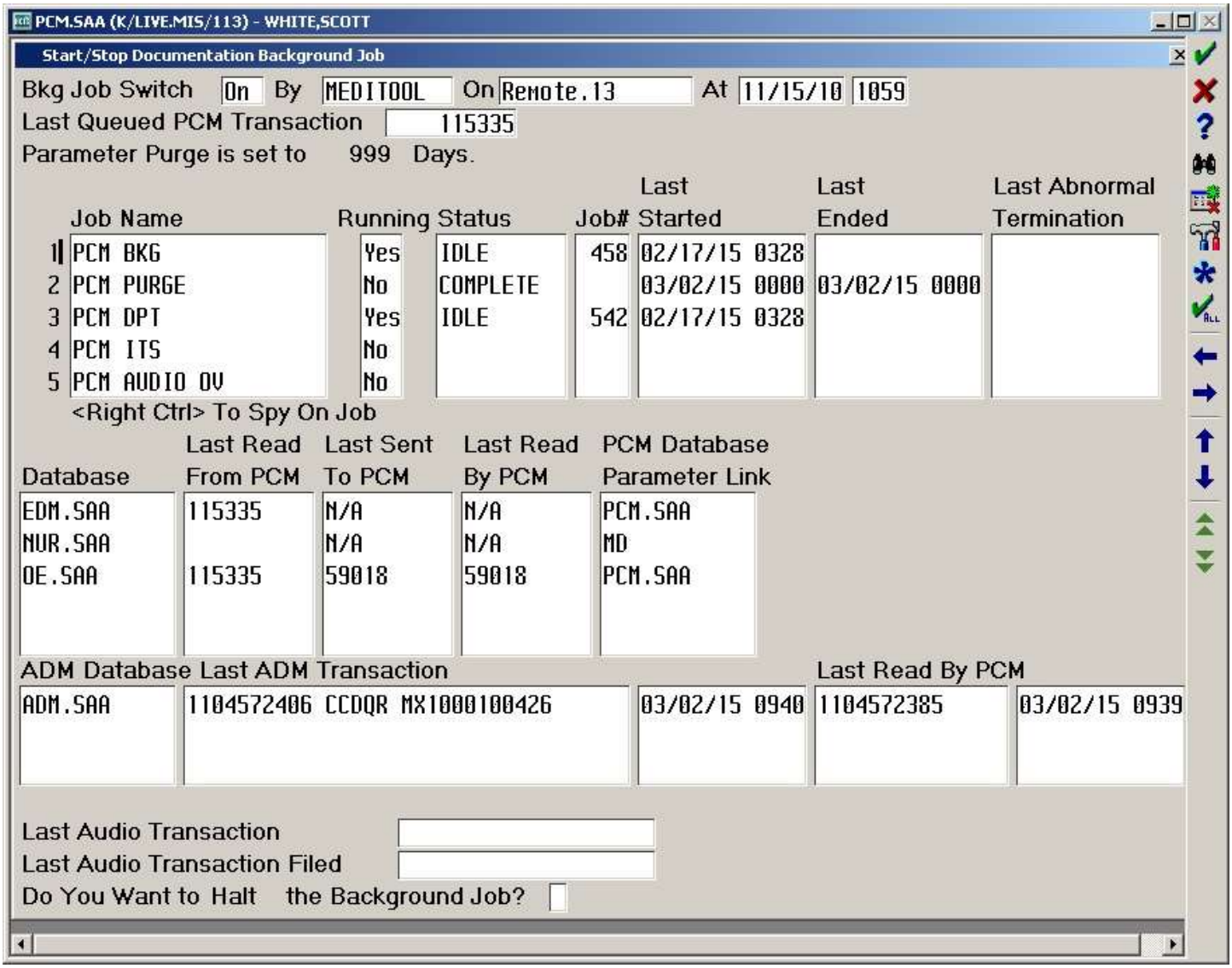
PCM Bkgrnd Jobs-

Check to see that each job is RUNNING (Yes) or in the case of PURGE – had completed based on params set.
Also, in the Last Read/Last Sent block – the record number should be in synch – like the Last Read from PCM should be the same record number in each database that it flows to – EDM.SAA & OE.SAA match in this example.



Notes: _____

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PWM.SAA (K/LIVE.MIS/322) - WHITE,SCOTT

Manage Desktop Background Jobs

Bkg Job Switch: On By: MEDITOOL On: Remote.3 At: 11/03/11 1353

	Job Name	Running	Status	Job#	Last Started	Last Ended	Last Abn Term
1	PWM BKG	Yes	IDLE	153	02/17/15 0316		
2	PWM MIDNIGHT RUN*	No	COMPLETED		03/02/15 0005	03/02/15 0015	
3	PWM LISTENER	Yes	IDLE	340	02/17/15 0316		
4	PWM EXT DATA	Yes	IDLE	441	02/17/15 0316		
5	PWM/MSG BG*	Yes	IDLE	117	02/17/15 0316		
6	PWM/SCH BG*	Yes	IDLE	11	02/17/15 0316		
7	PWM/ADM ADM.SAA	Yes	IDLE	124	02/17/15 0316		
8	PWM/OE OE.SAA	Yes	IDLE	241	02/17/15 0316		
9							

<Right Ctrl> To Spy On Job *=Right Arrow For More Detail

ADM Database	Last ADM Transaction		Last Read By PWM	
ADM.SAA	1104572477 CEN X1374415391	03/02/15 0941	1104572365	03/02/15 0939

OE Database	Last Txn Date/Time	Items Queued	Segment	Last Queued Transaction	Last Read Transaction
OE.SAA	03/02/15 0941	NO	A	393741	393741
			A1		2237075
			C	18296472	18296472
			D	55855	55855
			D1		41756071
			H	37161	37161
			I	5	5

Notes: _____

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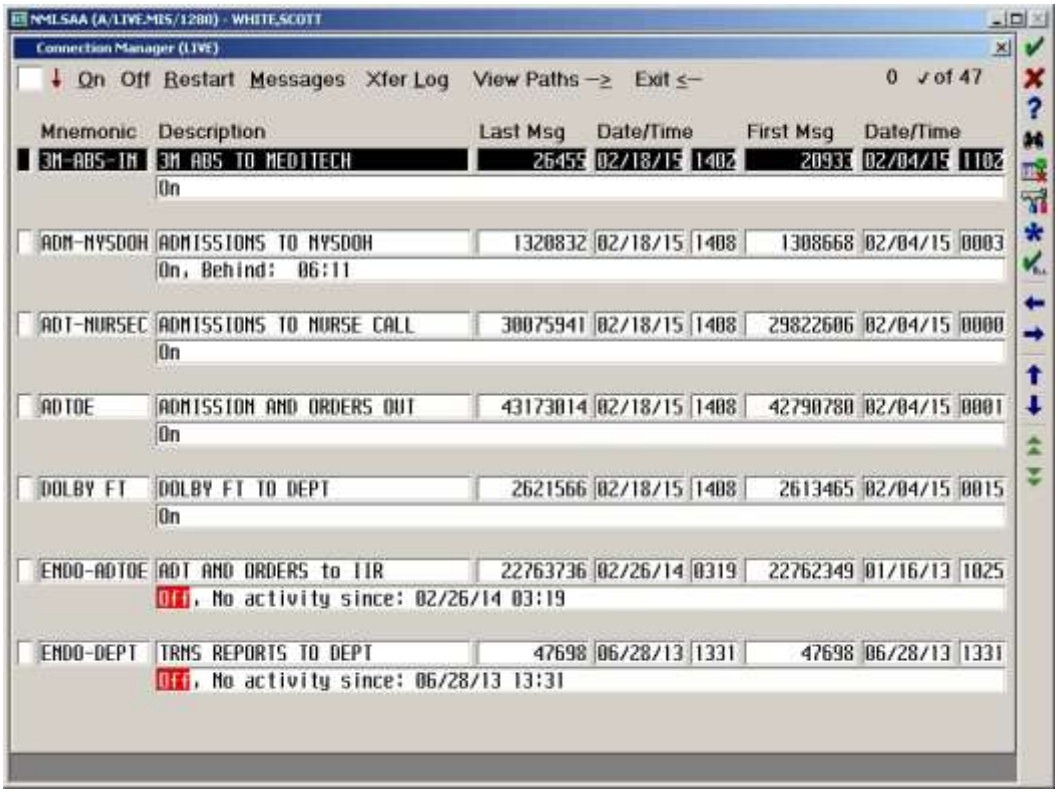
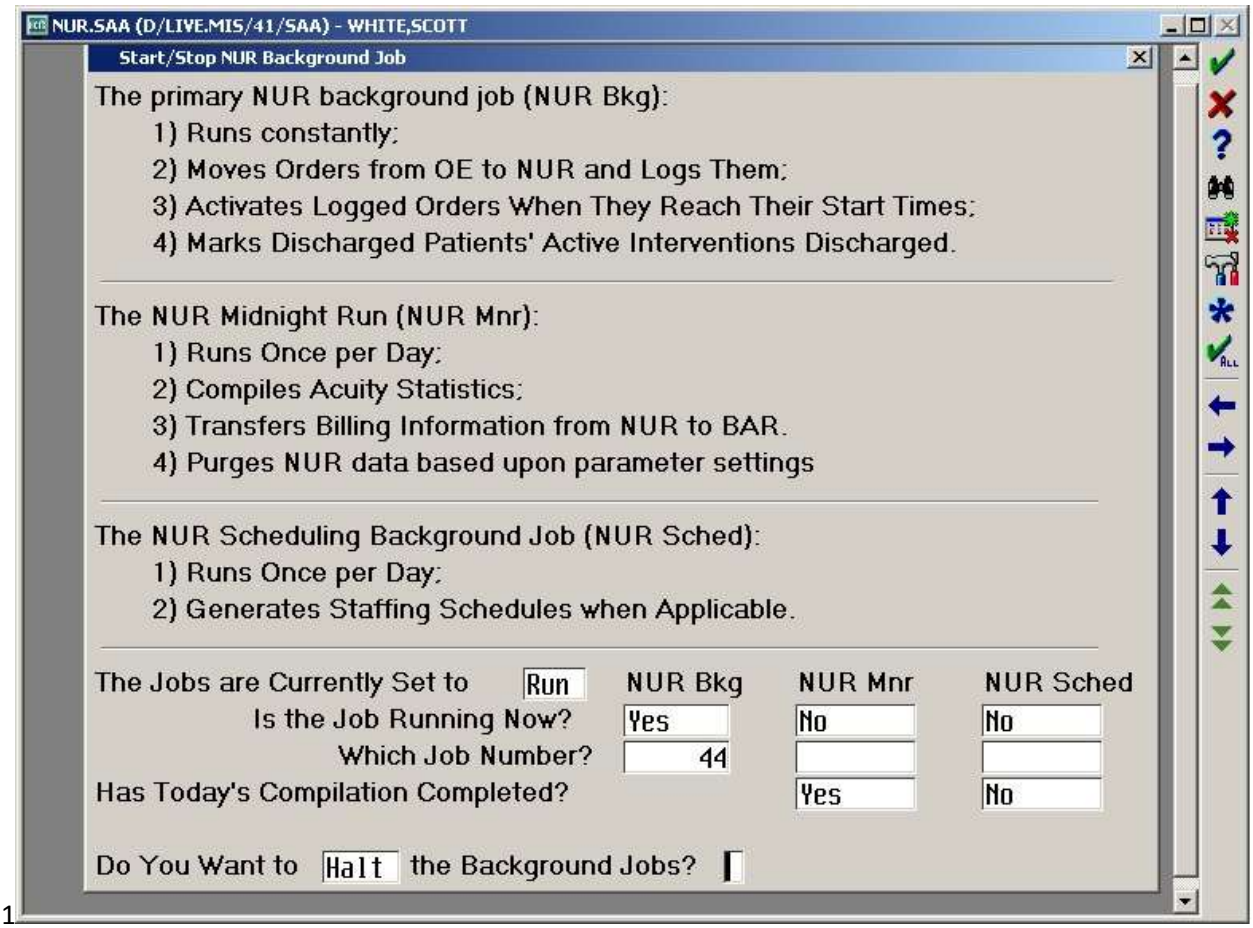
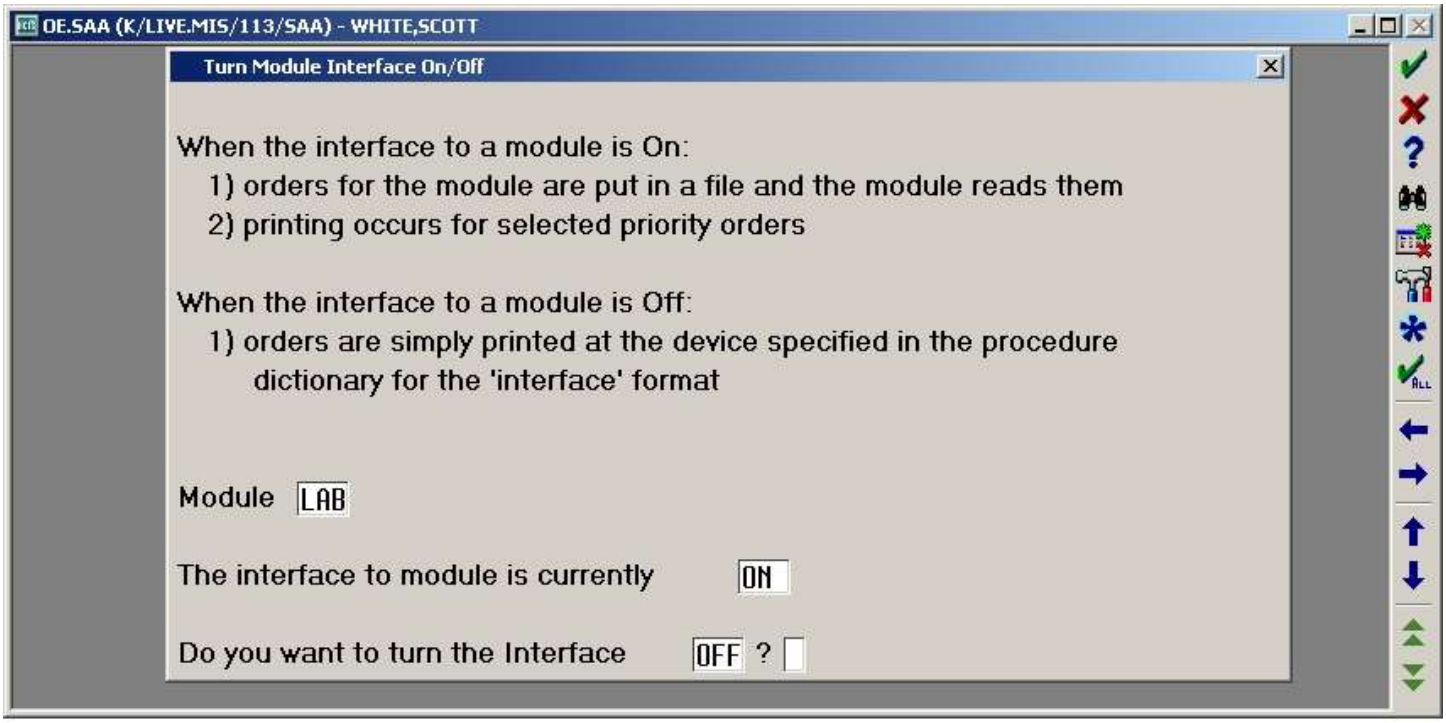
Notes to follow - from this point on, I am still filling in the notes and explanations. It is a hit & miss while I'm still rolling this out; but many have asked for anything I can provide at this point. So…… to be continued – watch for updates on these screens as well as new additions that come into play in trouble-shooting and mitigating issues. I welcome any constructive feedback on this. Please see list in first few pages for a brief outline/checklist of what I check every 4 hours…..without fail. Taking the time to run through these actually pays for itslef in reduced issues for the clinicians and support calls.

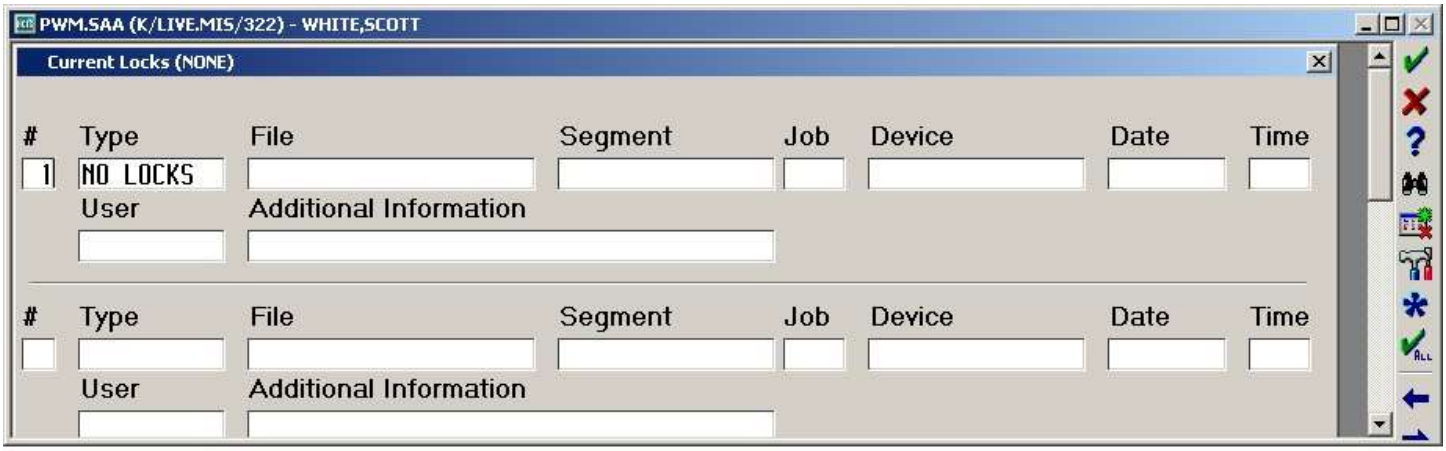
Thank you.

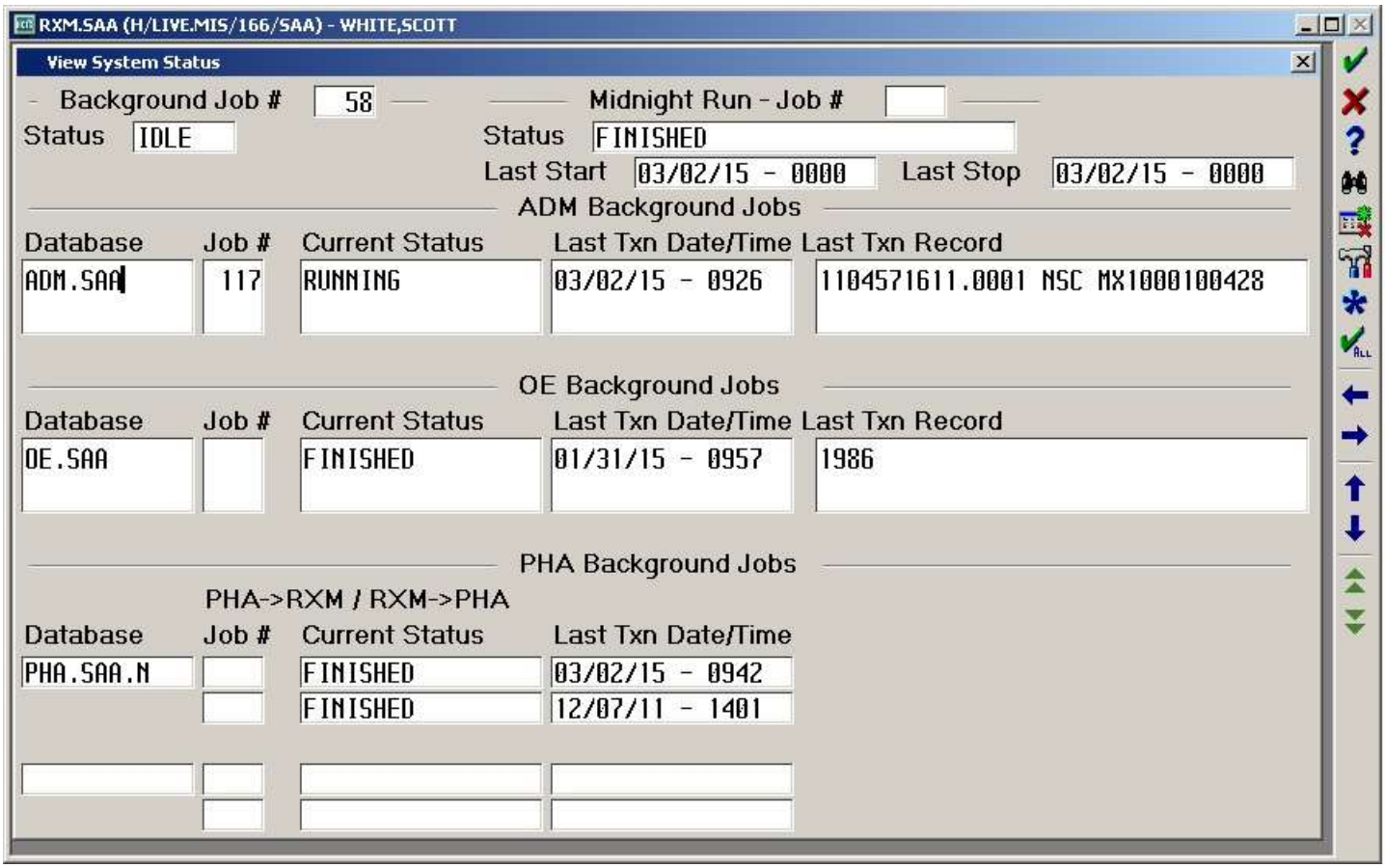
Scott W.

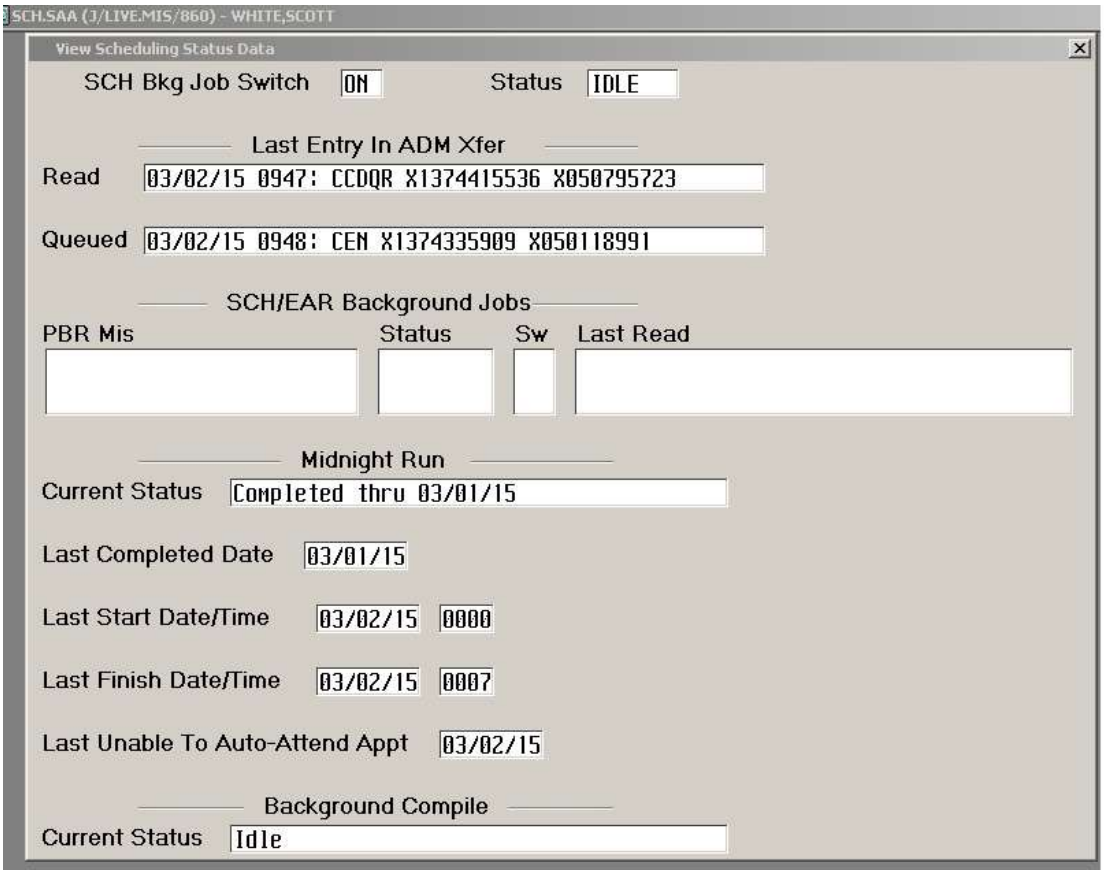



NUR.SAA (D/LIVE.MIS/41/SAA) - WHITE,SCOTT
Start/Stop NUR Background Job
The primary NUR background job (NUR Bkg):
1) Runs constantly;
2) Moves Orders from OE to NUR and Logs Them;
3) Activates Logged Orders When They Reach Their Start Times;
4) Marks Discharged Patients' Active Interventions Discharged.
The NUR Midnight Run (NUR Mnr):
1) Runs Once per Day;
2) Compiles Acuity Statistics;
3) Transfers Billing Information from NUR to BAR.
4) Purges NUR data based upon parameter settings
The NUR Scheduling Background Job (NUR Sched):
1) Runs Once per Day;
2) Generates Staffing Schedules when Applicable.
The Jobs are Currently Set to Run
NUR Bkg
NUR Mnr
NUR Sched
Is the Job Running Now?
Yes
No
No
Which Job Number?
44
Has Today's Compilation Completed?
Yes
No
Do You Want to Halt the Background Jobs?
1

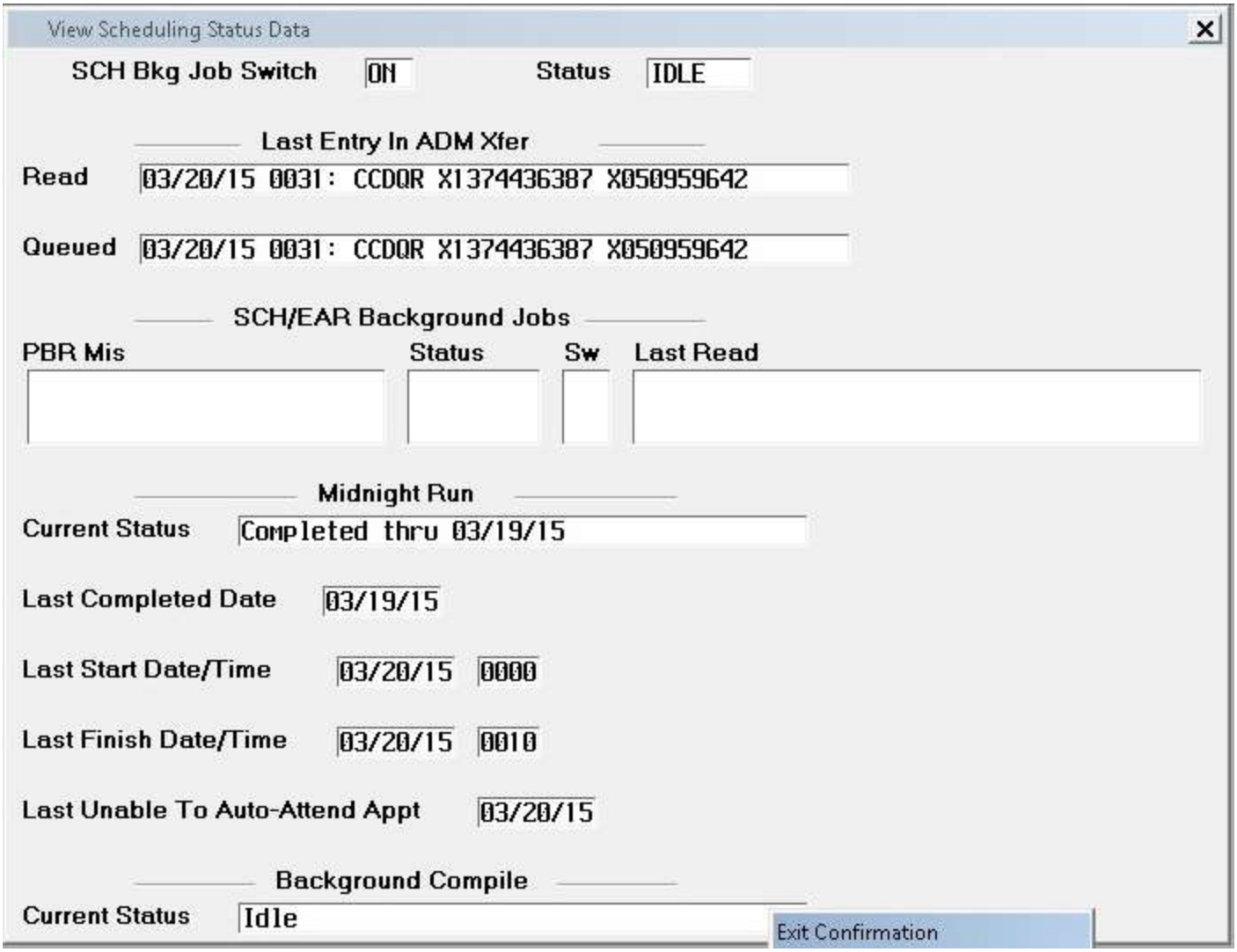

OE.SAA (K/LIVE.MIS/113/SAA) - WHITE,SCOTT
Turn Module Interface On/Off
When the interface to a module is On:
1) orders for the module are put in a file and the module reads them
2) printing occurs for selected priority orders
When the interface to a module is Off:
1) orders are simply printed at the device specified in the procedure dictionary for the 'interface' format
Module LAB
The interface to module is currently ON
Do you want to turn the Interface OFF ?

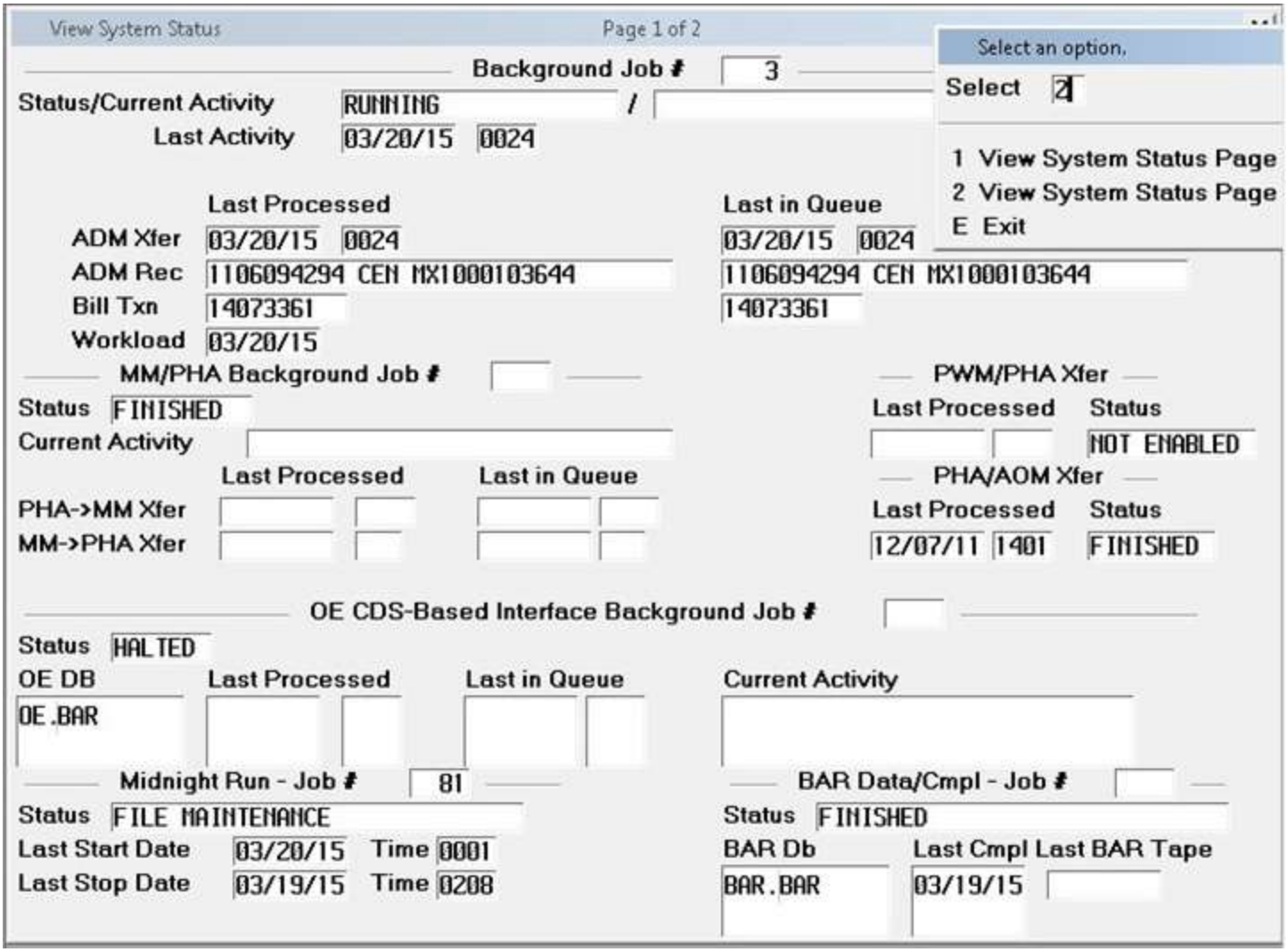

PWM.SAA (K/LIVE.MIS/322) - WHITE,SCOTT
Current Locks (NONE)
Type File Segment Job Device Date Time
1 NO LOCKS
User Additional Information
Type File Segment Job Device Date Time
User Additional Information

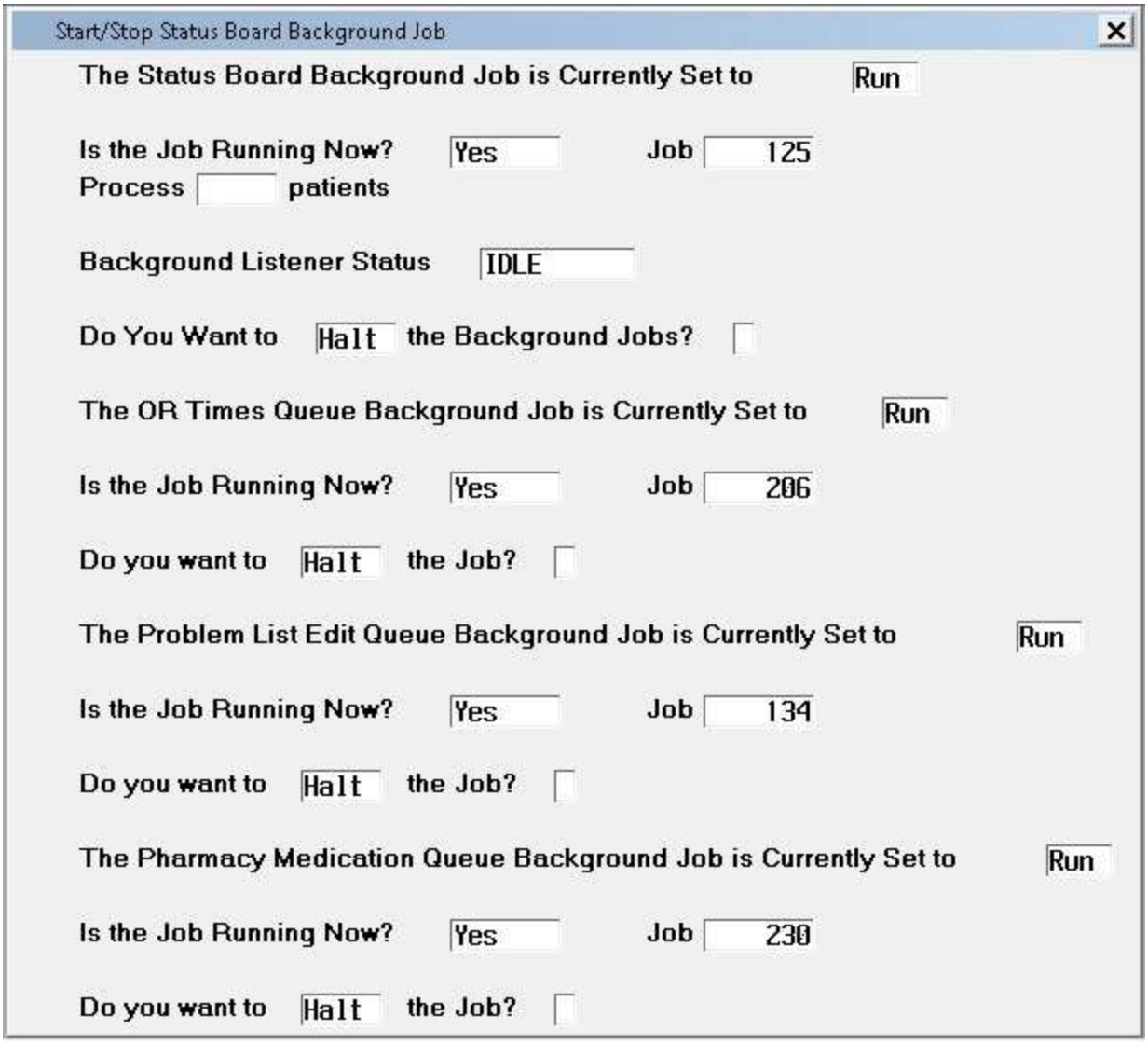

RXM.SAA (H/LIVE.MIS/166/SAA) - WHITE,SCOTT
View System Status
Background Job # 58
Status IDLE
Midnight Run - Job #
Status FINISHED
Last Start 03/02/15 - 0000
Last Stop 03/02/15 - 0000
ADM Background Jobs
Database Job # Current Status Last Txn Date/Time Last Txn Record
ADM.SAA 117 RUNNING 03/02/15 - 0926 1104571611.0001 NSC MX1000100428
OE Background Jobs
Database Job # Current Status Last Txn Date/Time Last Txn Record
OE.SAA FINISHED 01/31/15 - 0957 1986
PHA Background Jobs
PHA->RXM / RXM->PHA
Database Job # Current Status Last Txn Date/Time
PHA.SAA.N FINISHED 03/02/15 - 0942
FINISHED 12/07/11 - 1401

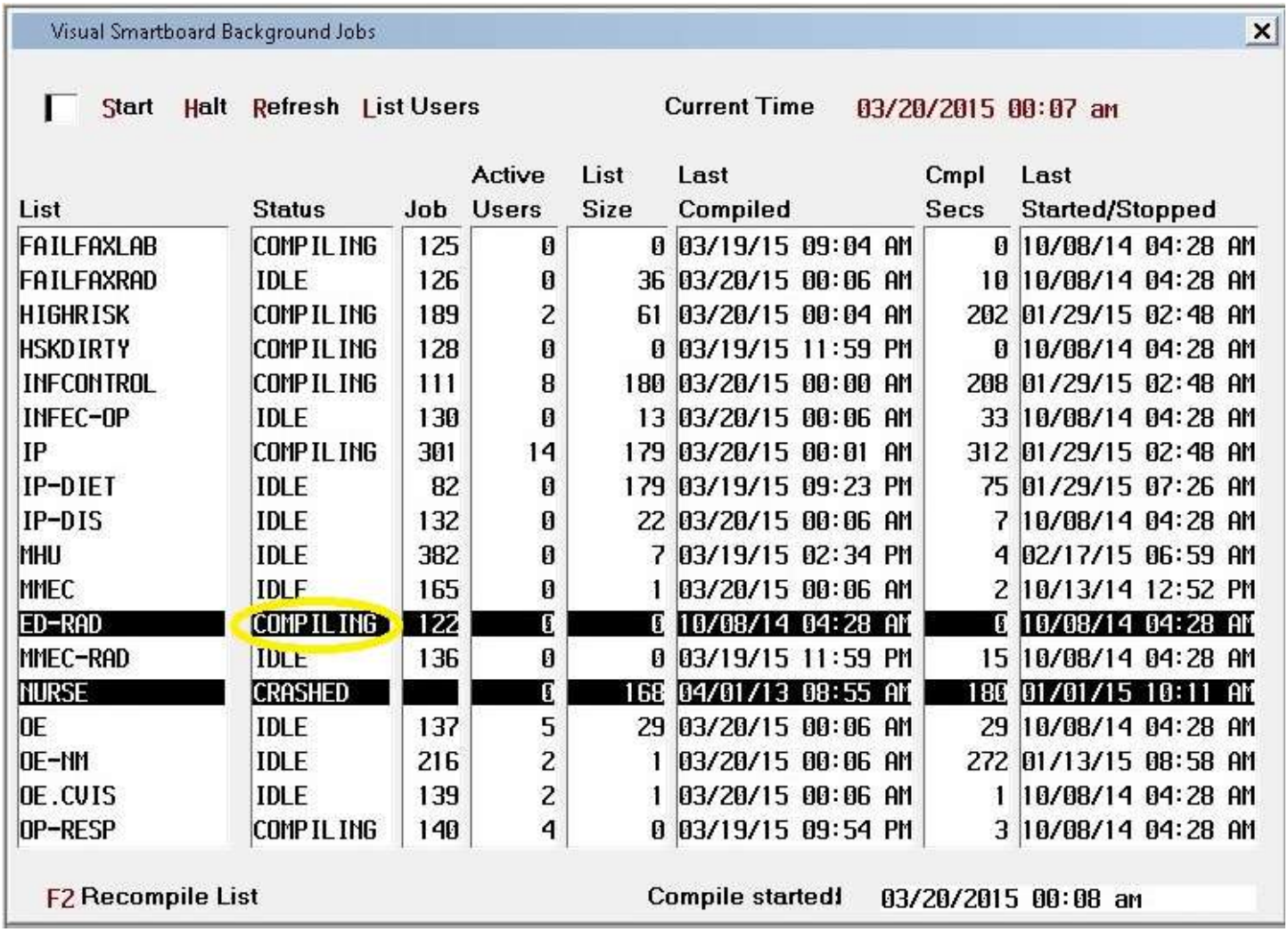

SCH.SAA (J/LIVE.MIS/860) - WHITE,SCOTT
View Scheduling Status Data
SCH Bkg Job Switch
ON
Status
IDLE
Last Entry In ADM Xfer
Read
03/02/15 0947: CCDQR X1374415536 X050795723
Queued
03/02/15 0948: CEN X1374335909 X050118991
SCH/EAR Background Jobs
PBR Mis
Status
Sw
Last Read
Midnight Run
Current Status
Completed thru 03/01/15
Last Completed Date
03/01/15
Last Start Date/Time
03/02/15
0000
Last Finish Date/Time
03/02/15
0007
Last Unable To Auto-Attend Appt
03/02/15
Background Compile
Current Status
Idle

EVTF – Systems Monitoring & Maintenance - How to prevent problems before your clinicians run into them.
by: Scott A. White

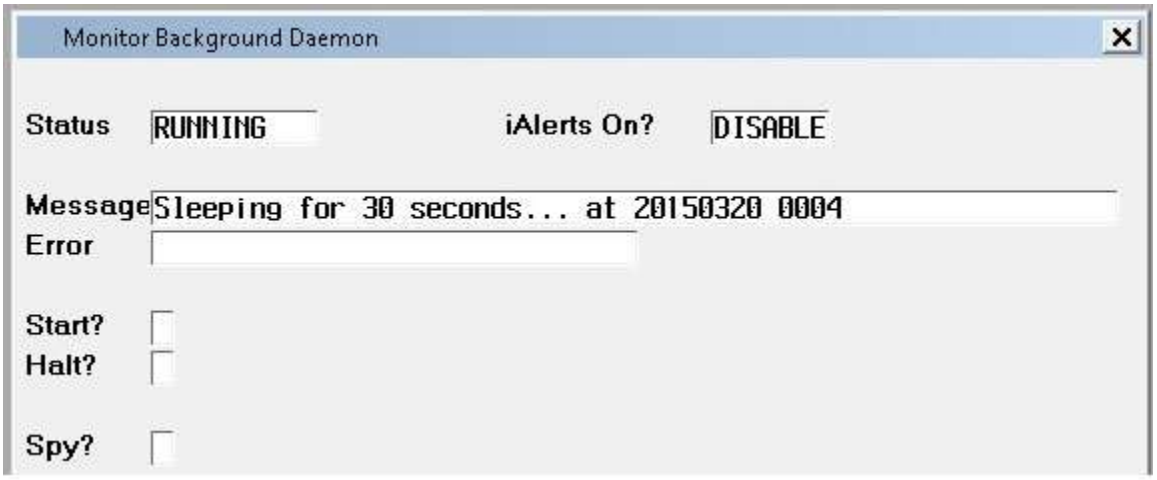

View Scheduling Status Data
SCH Bkg Job Switch
ON
Status
IDLE
Last Entry In ADM Xfer
Read
03/20/15 0031: CCDQR X1374436387 X050959642
Queued
03/20/15 0031: CCDQR X1374436387 X050959642
SCH/EAR Background Jobs
PBR Mis
Status
Sw
Last Read
Midnight Run
Current Status
Completed thru 03/19/15
Last Completed Date
03/19/15
Last Start Date/Time
03/20/15
0000
Last Finish Date/Time
03/20/15
0010
Last Unable To Auto-Attend Appt
03/20/15
Background Compile
Current Status
Idle
Exit Confirmation

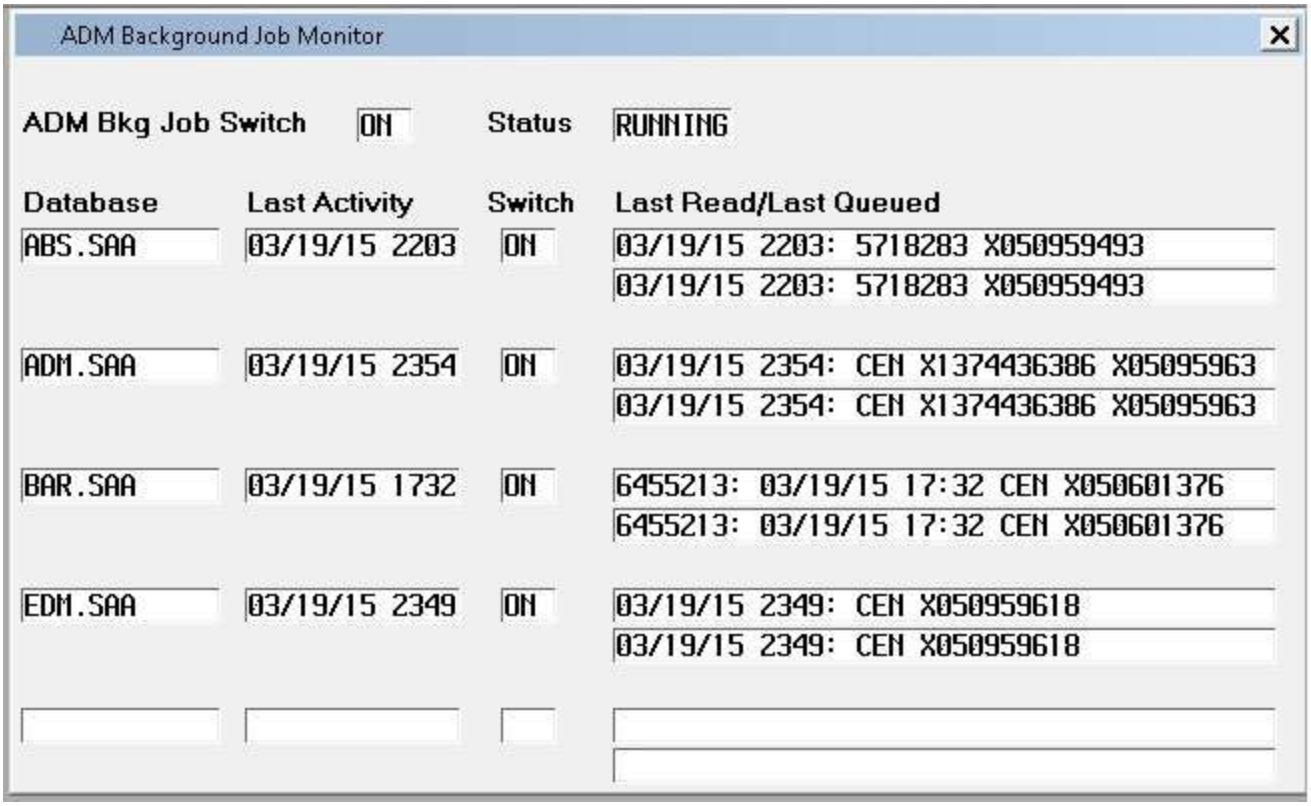

View System Status
Page 1 of 2
Background Job # 3
Status/Current Activity RUNNING /
Last Activity 03/20/15 0024
Select an option.
Select 2
1 View System Status Page
2 View System Status Page
E Exit
Last Processed
Last in Queue
ADM Xfer 03/20/15 0024 03/20/15 0024
ADM Rec 1106094294 CEN MX1000103644 1106094294 CEN MX1000103644
Bill Txn 14073361 14073361
Workload 03/20/15
MM/PHA Background Job #
Status FINISHED
Current Activity
PWM/PHA Xfer
Last Processed Status
NOT ENABLED
Last Processed
Last in Queue
PHA->MM Xfer
MM->PHA Xfer
PHA/AOM Xfer
Last Processed Status
12/07/11 1401 FINISHED
OE CDS-Based Interface Background Job #
Status HALTED
OE DB
Last Processed
Last in Queue
Current Activity
OE.BAR
Midnight Run - Job # 81
Status FILE MAINTENANCE
Last Start Date 03/20/15 Time 0001
Last Stop Date 03/19/15 Time 0208
BAR Data/Cmpl - Job #
Status FINISHED
BAR Db
Last Cmpl Last BAR Tape
BAR.BAR
03/19/15

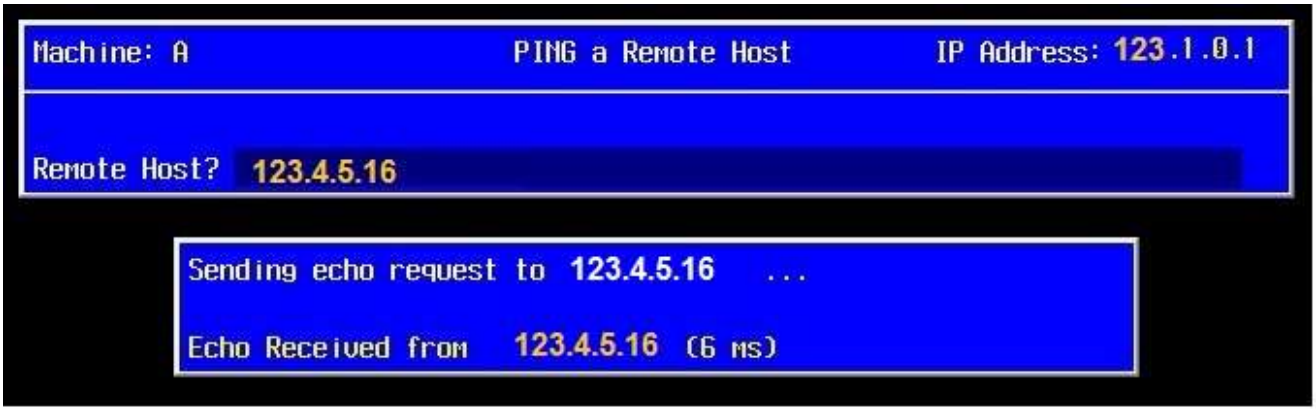

Start/Stop Status Board Background Job
The Status Board Background Job is Currently Set to Run
Is the Job Running Now? Yes Job 125
Process patients
Background Listener Status IDLE
Do You Want to Halt the Background Jobs?
The OR Times Queue Background Job is Currently Set to Run
Is the Job Running Now? Yes Job 206
Do you want to Halt the Job?
The Problem List Edit Queue Background Job is Currently Set to Run
Is the Job Running Now? Yes Job 134
Do you want to Halt the Job?
The Pharmacy Medication Queue Background Job is Currently Set to Run
Is the Job Running Now? Yes Job 230
Do you want to Halt the Job?



List	Status	Job	Active Users	List Size	Last Compiled	Cmpl Secs	Last Started/Stopped
FAILFAXLAB	COMPILING	125	0	0	03/19/15 09:04 AM	0	10/08/14 04:28 AM
FAILFAXRAD	IDLE	126	0	36	03/20/15 00:06 AM	10	10/08/14 04:28 AM
HIGHRISK	COMPILING	189	2	61	03/20/15 00:04 AM	202	01/29/15 02:48 AM
HSKDIRTY	COMPILING	128	0	0	03/19/15 11:59 PM	0	10/08/14 04:28 AM
INFCONTROL	COMPILING	111	8	180	03/20/15 00:00 AM	208	01/29/15 02:48 AM
INFEC-OP	IDLE	130	0	13	03/20/15 00:06 AM	33	10/08/14 04:28 AM
IP	COMPILING	301	14	179	03/20/15 00:01 AM	312	01/29/15 02:48 AM
IP-DIET	IDLE	82	0	179	03/19/15 09:23 PM	75	01/29/15 07:26 AM
IP-DIS	IDLE	132	0	22	03/20/15 00:06 AM	7	10/08/14 04:28 AM
MHU	IDLE	382	0	7	03/19/15 02:34 PM	4	02/17/15 06:59 AM
MMEC	IDLE	165	0	1	03/20/15 00:06 AM	2	10/13/14 12:52 PM
ED-RAD	COMPILING	122	0	0	10/08/14 04:28 AM	0	10/08/14 04:28 AM
MMEC-RAD	IDLE	136	0	0	03/19/15 11:59 PM	15	10/08/14 04:28 AM
NURSE	CRASHED		0	168	04/01/13 08:55 AM	186	01/01/15 10:11 AM
OE	IDLE	137	5	29	03/20/15 00:06 AM	29	10/08/14 04:28 AM
OE-NM	IDLE	216	2	1	03/20/15 00:06 AM	272	01/13/15 08:58 AM
OE.CVIS	IDLE	139	2	1	03/20/15 00:06 AM	1	10/08/14 04:28 AM
OP-RESP	COMPILING	140	4	0	03/19/15 09:54 PM	3	10/08/14 04:28 AM

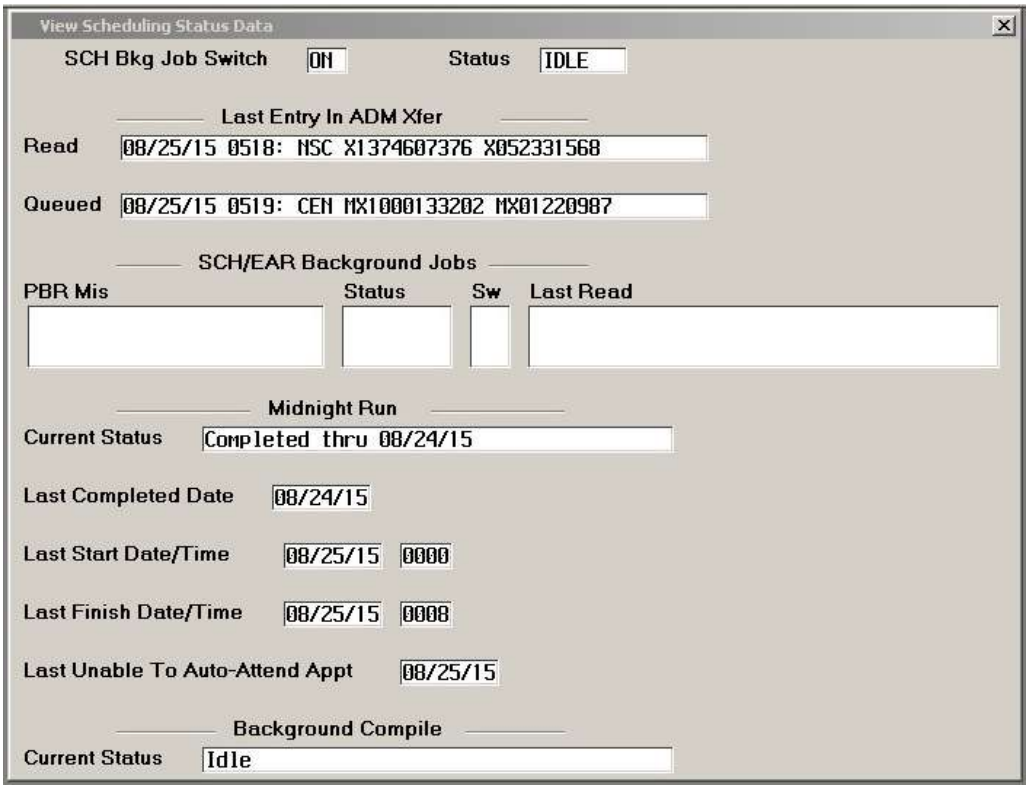



ADM Background Job Monitor
ADM Bkg Job Switch
ON
Status
RUNNING
Database
Last Activity
Switch
Last Read/Last Queued
ABS.SAA
03/19/15 2203
ON
03/19/15 2203: 5718283 X050959493
03/19/15 2203: 5718283 X050959493
ADM.SAA
03/19/15 2354
ON
03/19/15 2354: CEN X1374436386 X05095963
03/19/15 2354: CEN X1374436386 X05095963
BAR.SAA
03/19/15 1732
ON
6455213: 03/19/15 17:32 CEN X050601376
6455213: 03/19/15 17:32 CEN X050601376
EDM.SAA
03/19/15 2349
ON
03/19/15 2349: CEN X050959618
03/19/15 2349: CEN X050959618


Machine: A
PING a Remote Host
IP Address: 123.1.0.1
Remote Host? 123.4.5.16
Sending echo request to 123.4.5.16 ...
Echo Received from 123.4.5.16 (6 ms)

OE – Operations Menu – List Interface Queue: When CPOE orders are not updating other modules like LAB and PHA – check this queue - monitor the List Interface Queue from the OE Operations Menu. This can be run by individual interfaces and will indicate an issue in either OE or the interfacing application. Most often, if it appears that things are queueing in one application but not another, the interfacing application is experiencing an issue. If it appears to be in all applications, the issue is likely stemming from OE.

ORM – Scheduling Background Job



To view log on encryption and those sessions that aren't - run this as a complimentary tool to filtering Caretaker messages searching for unencrypted Telnet sessions (as I have been doing).

10. Manage Open Systems
then 24. Manage Connections
then 5. SIGNON Log Report

To check the status of all machines (Alive and using UDP or not) -
10. Manage Open Systems
then 24. Manage Connections
then 4. Intermachine Status

EVTF – Systems Monitoring & Maintenance - How to prevent problems before your clinicians run into them.
by: Scott A. White

OPS - Manage Open Systems

Caution - DO NOT USE THIS UNLESS YOU HAVE CLEARANCE FROM MEDITECH TO ACCESS IT.

To view a compiled Error List (not necessarily errors - but open files & locks)
Then… (Removed from general consumption; but available for “advanced users”….contact Meditech support for details.

Use F12 to expand views into each job that you see. This is helpful in seeing a bigger picture of what is happening on each machine without having to go into each application and viewing their systems tools. Also one of the best ways I’ve found to get instant results from the MEDITECH support team. When you can include the error log along with your usual details, the team at MEDITECH goes right to the source.