FINE TUNING AND MAINTAINING GECS

Global ECS is a very powerful tool and is used to automate mission critical applications in production environments for all types of industries. Due to its importance, it is designed to run continuously, which can cause it to have the capacity to generate a lot of data. GECS keeps track of every job that is executed, job output, events associated with the system, the jobs, user activity audits and much more.

Although GECS is designed to handle a lot of data, you can experience a gradual decline in performance if you keep too much data and do not configure your system to automatically trim and archive old information.

Here are some ways to keep GECS running at maximum performance.

DATA ARCHIVING
You can configure your GECS to keep system data for a particular amount of time. You can change the default system values by using the System View module in the Controller and System Manager Settings:

- Days of Complete Jobs to Keep in Controller settings
- Days of Archived Jobs to Keep in Controller settings
- Days of Events to Keep in System Manager settings
- Days of SLA Monitor Records to Keep in System Manager settings
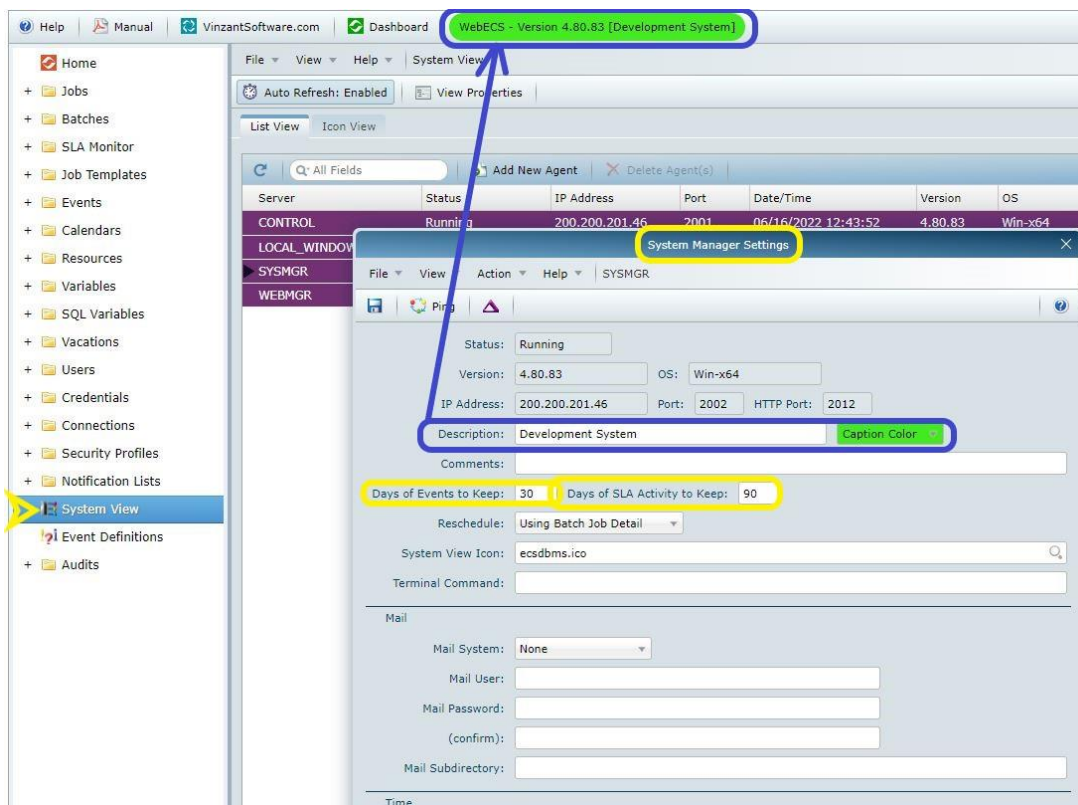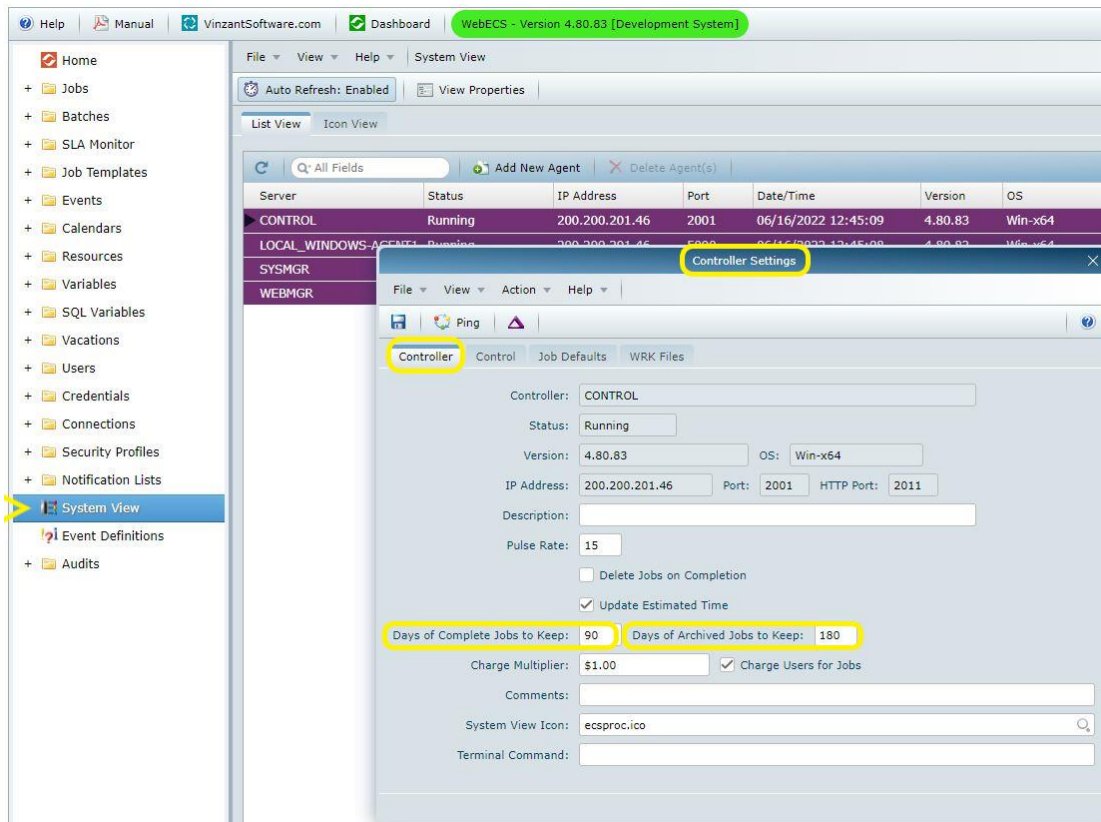
By default, the GECS system keeps 30 days of Events, 90 days of Complete jobs, 90 days of SLA Activity and 180 days of Archive jobs. While you can set these different entries to different values, it does make sense to consider how they are interrelated. For example, if you keep 60 days of jobs and 30 days of events, you won't see any events for jobs in days 30 to 60 days after they run. If you keep 90 days of SLA Monitor records and only 30 days of jobs, you won't be able to see any of the jobs that are part of the batch instances after 30 days. A good general rule would be to:

- Set days of Archive Jobs, days of Event and days of SLA Monitor to keep the same number.
- Set the days of Complete Jobs to that same number or a smaller number.

JOB DETAILS:

There are three similar and related database tables where jobs are stored. An understanding of their relationship will help you understand how to manage completed job information. Information about Pending, On Hold and Running Jobs is stored in the Jobs table.

Once a job completes, the information about that instance of the job is added to the Job History table. At some point, depending on how much information the Controller or individual jobs settings are configured to keep the information about the completed job is moved to the Job Archive table for long term storage. Eventually, the system can delete old information from the Job Archive table as well.

On the Controller settings screen, which is found in the System View section, you will find 2 fields which provide the primary control over this automatic archiving of completed jobs.

- The 'Days of Completed Jobs To Keep' field indicates how long completed jobs should be in the Job History table before they are moved to the Job Archive table.
- The 'Days of Archived Jobs To Keep' field indicates how long completed jobs should remain in the Job Archive table before they are deleted. For example, you might indicate that you want to keep 30 days of completed jobs in history and then keep 365 days of completed jobs in the archive.

This would result in a full year of data being stored in your system. Because of the quantity of data that you might store in the system, certain views only show the

data in the History table for performance reasons, while others might show all the jobs from both the history and archive tables. This allows you to tune the performance of your system. At a minimum you should keep completed job information in history based on the job rescheduling frequency. For example, if a job runs every day, you should keep at least one day or more of completed jobs in the history table. If a job runs once a month, keep at least 31 days of job history. Your 'Days of Archived Jobs To Keep' should always be larger than your 'Days of Completed Jobs To Keep'.

JOB LEVEL TRIMMING:
In addition to the system wide 'Days of Completed Jobs To Keep' field, you can also set the number of days of completed jobs to keep at the job level.

Trimming complete information at the job level is very important for jobs that run frequently or not so frequently. For example, you can keep x number if instances of a job that repeats every 15 minutes. Likewise, for a job that runs once a year, you may want to keep x number of instances.

On the Command tab of the batch detail screen, you can indicate how completed jobs should be retained on a job-by-job basis.

By default, the jobs are set to use the System Setting specified in the Controller Information described above. You can also indicate that the history for those jobs should be kept indefinitely or that it should be kept a specific number of hours, number of days or number of instances. The job level settings override the 'Days of Completed Jobs To Keep' at the system level.

Once these jobs are moved to the Job Archive table, the 'Days of Archived Jobs To Keep' field indicates when they should be deleted from the archive table.

TRIMMING JOB OUTPUT:
By default, the captured output from completed jobs is not deleted when the job is moved from Job History to Job Archive. By setting the DeleteOutputOnArchive' registry setting to 1 in the 'SYSMGR' section, you can indicate that the job output should be deleted when the completed job information is moved to the archive table to reduce the disk space used by archived jobs.

IMPORTANT: If you keep too many days of event or completed job records, your GECS system may take a long time to populate event and job lists.

TRIMMING FAILED JOBS:
By default, all completed jobs (failed and successful) are deleted matching the configured system level or job level trim setting. To prevent failed jobs from being deleted, you can set the 'DeleteOnlySuccessfulJobs' registry setting to '1' in the 'Controller' section.

In older versions of GECS this setting was the default. If you need to have GECS trim failed jobs, you will need to update your GECS registry settings to allow failed jobs to get deleted/trimmed and moved to the archive table. To trim failed jobs you must set the Registry entry in the Controller section,

```
HKEY_LOCAL_MACHINE\SOFTWARE\Vinzant
Software\Installations\GlobalECS
```
The above example is using the default installation name of GlobalECS.

[Controller]
DeleteOnlySuccessfulJobs=0

You need to create a new String Value under Controller folder.

such as Controller
String Value = DeleteOnlySuccessfulJobs
Value Data=0

You must restart your GECS components for this to take effect.

TRIMMING EVENTS:
Information about Events that occur in the system are kept on file based on the information you enter in the 'Days Of Events To Keep' field that can be found on the System Manager screen in the System View.

The system will automatically delete events and their corresponding alerts after this many days. If you have jobs that depend on the occurrence of GECS events, be sure to keep enough Event history on file to satisfy those requirements.

TRIMMING SLA MONITOR RECORDS:
SLA Monitor information is kept on file based on the information you enter in the 'Days of SLA Monitor Records to Keep' field that can be found on the System Manager screen in the System View and on the Batches screen. The system will automatically delete SLA Monitor records after this many days.

USING MULTIPLE ENVIRONMENTS:
Most customers require test, production, and disaster recovery environments for GECS. You can use the System View, System Manager settings "Description" field to help label your GECS environments to keep them organized.

AGENT RECORD DEFINITIONS:
If you have agent records defined that are no longer in use, it is best to remove them. Defined agents that are not running can cause GECS to spend time looking to see if these agents are available. This can slow things down a little.

EMAIL CONFIGURATION:
Be sure if you have email configured with GECS that your email is working correctly. If GECS email is not working this can cause GECS to slow down because it will be spending time trying to send email. If you are not getting email via GECS, check your GECS Events, All Events folder for SMTP Errors. Check your System Manager Settings and check your "Mail System" field. If your email system is down or not working, set the "mail system" field to NONE.

SQL DATABASE LOCATION:
The SQL database, either Microsoft SQL Server or Oracle Server are used to store the data used by the GECS system. It may be run on the same computer as GECS or on another computer on the network. For the highest performance and highest level of fault tolerance, it should be run on the same computer as the GECS System Manager, Controller and Web Manager programs.

STABLE DATABASE AND NETWORK:
The GECS system communicates extensively between components and the database server where the GECS data is stored. Careful design and working with your networking and database management professionals will go a long way to making your GECS installation run trouble free. GECS will not work correctly if you have network or database instability. You can run a GECSTEST command line utility program to test the performance of a GECS installation and the hardware on which it runs.

JOBS REQUIRING TRIGGER FILES:
Jobs defined using trigger file dependencies use resources and time to check. Be sure to specify required agents or required agent groups when using trigger files. Otherwise, GECS will query every defined agent searching for the required trigger file(s).

LATE PENDING JOBS:
Large amounts of late, pending jobs can cause GECS to launch jobs more slowly. GECS checks every job that has a current or late time. It will check for all types of dependencies to be sure it is eligible to run. It is best to try to schedule your job streams to execute throughout the day, as opposed to all at the exact same time to avoid backlogs.

AGENT REQUIREMENTS:
Most jobs need to run on specific agent machines. You can specify up to 10 agents or an agent group where your job should run using the 'Execute by agent"

fields or the "Use agent group" field located on the job "Requirements" tab. If you do not specify where the job should run, GECS will attempt to contact every agent defined until it finds an available agent that can run the job. This process of looking for agents can slow down job launching if you have many agents but only certain ones can run your job.

AUTO UPDATING VIEWS:
Do not configure your jobs views or event views to auto update / auto refresh too frequently when displaying a lot of data. Auto updating too frequently can create extra stress on your network and database. From your jobs or event folders, check your view properties to for auto update and update frequency.

BACKUP DATA:
Be sure and backup your GECS data. This can be done at the database level. GECS also ships with a backup command line utility called GECSBACK.

FIREWALLS & ANTI-VIRUS SOFTWARE
Before using GECS you must tell your firewall, anti-virus, malware prevention or port sniffing security scan programs that GECS programs (GECSDBMS.EXE, GECSPROC.EXE, WEBECS.EXE and GECSAGNT.EXE) can use their defined TCP/IP ports for communications. These programs need to be allowed to read from and write to the 8 ports your system is configured (in the GECS Workstation Setup program) to use. The ports and the GECS component programs and folders should be omitted from any type of blocks, file locks or scans.