System Monitor View

Using the Monitor Service Options in USxS

Matt Calmes, SSDT Director

Jodi Becher, SSDT Project Manager

Marc Davis, SSDT Project Manager

SSDT Educational Software Solutions

System Monitor View

USxS Applications have built-in monitoring statistics, logging levels and various logs that can be useful when diagnosing potential problems. This information is available via the System menu by selecting the Monitor View

Events	Status	Metrics	Logging	App Log	Threads	Admin Logs	Info	Security	Server Logs	Cache

Recent Repository Events ▾

Timestamp	Type	Username	Summary
2023-03-27 09:31:20	Repository Read Only Event	admin	RepositoryReadO
2023-03-27 09:31:20	Query Event	admin	QueryEvent@202
2023-03-27 09:31:20	Query Event	admin	QueryEvent@202

System Monitor View - Events

- Filtered grid of last 200 Application Events
- Slow Metric Events
  - Event Published for any event over 3 seconds
- Recent Repository Events
  - Create / Read / Update / Delete events
- Slow Queries
  - Queries over 3 seconds; User Configurable
- Lifecycle Events
  - Startup / Shutdown / Importing
- Recent Auditable Events
  - Module Installed, Rules Reloading, Posting Period, Payroll Posting… etc
- Recent Metric Events
  - Report generation

System Monitor View - Status

The Status tab displays information about the status of the application, jobs and installed modules.

Each job that runs during the import and post import process, along with the various modules that are installed are listed here along with their status.

Status	org.ssdt_ohio.modules.rules.RulesService:state	RUNNING
Status	org.ssdt_ohio.usas.imports.utils.ImportUtility:import.status	COMPLETED
Status	org.ssdt_ohio.usas.model.generalLedger.ActivityLedgerListener$ActivityLedgerDisbursementJob:Disb	SUCCESS: 2022-03-18T00:50:20.151Z
Status	org.ssdt_ohio.usas.model.generalLedger.ActivityLedgerListener$ActivityLedgerGLJob:GL	SUCCESS: 2022-03-18T00:31:32.231Z
Status	org.ssdt_ohio.usas.model.generalLedger.ActivityLedgerListener$ActivityLedgerInvoiceJob:Inv	SUCCESS: 2022-03-18T00:41:14.661Z
Status	org.ssdt_ohio.usas.model.generalLedger.ActivityLedgerListener$ActivityLedgerPOJob:PO	SUCCESS: 2022-03-18T00:32:32.046Z
Status	org.ssdt_ohio.usas.model.vendor.VendorLedgerGeneratedJob	SUCCESS: 2022-03-18T00:15:44.640Z
Status	org.ssdt_ohio.usas.module.ImportPostProcessJob	COMPLETED: 2022-03-17T23:23:23.592Z
Status	org.ssdt_ohio.usas.module.encumbrance.EncumbranceLedgerJob	COMPLETED: 2022-03-18T00:14:24.633Z
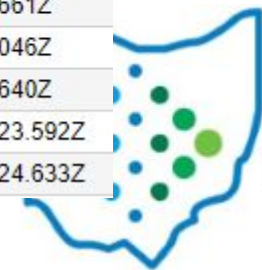
System Monitor View - Metrics

USxS applications have built-in monitoring statistics. A useful one for performance is Metrics

| Events | Status | Metrics | Logging | App Log | Threads | Admin Logs | Info | Security | Server Logs | Cache |

⟳   🗑 Force GC

Metrics

Type	Name	Value
	hea ⊗	
gauge	heap.committed	2221932544
gauge	heap.init	1054867456
gauge	heap.max	4294967296
gauge	heap.usage	0.18778113834559917
gauge	heap.used	806513848

3/27/2023

System Monitor View - Metrics

Using System Monitor

- Performance Monitoring Metrics
  - Java Heap
    - Memory Committed - guaranteed available for JVM, can be less than max
    - Initial heap size (-Xms)
    - Max amount (-Xmx)
    - Percent heap used
    - Memory used

- Troubleshooting Article: Using System Monitor

System Monitor View - Metrics

Using System Monitor

- Performance Monitoring Metrics
  - Memory options: set in docker-compose.override.yml
    - [JVM Configuration](#) recommend 4G+ depending on district size/chart of accounts
  - Connection Pool
    - Used for logging in, running reports, etc.
    - USxS default connection pool max = 20; recommend 40
    - No connections available in the pool will cause a delay of up to 60 seconds

System Monitor View - Logging

- Logging Tab allows overrides of logging levels in the app
  - Used by SSDT when debugging
- Toggle SQL button turns on/off logging for all queries
  - Allows each database query to be logged for debugging
- Debug Logs are included in the server logs when send to SSDT

System Monitor View - App Log

- Server logs can be cleared when an app instance is restarted
- Makes the logs hit or miss if a district's app is restarted to correct a problem
- The App Logs is a solution to this problem
- Logs are stored in a database table
- Used by SSDT to debug issues, but stores Auditable Events and Logging info that can be useful to ITC / Users
- Highlight Viewer can display stack trace and errors

System Monitor View - App Log

System Monitor View - Threads

Information on all current threads in the USxS system. Can be used by SSDT for debugging in a live application.

| Events | Status | Metrics | Logging | App Log | Threads | Admin Logs | Info | Security | Server Logs | Cache | |

Threads

Name	Group	Cpu Time (sec)	State	Daemon	Alive
http-nio-8080-Acceptor-0	main	11,234.82	RUNNABLE	true	true
drools-worker-3	main	0.67	WAITING	true	true
drools-worker-2	main	8.19	WAITING	true	true
drools-worker-1	main	31.81	WAITING	true	true
app-thread-pool-3	main	11,070.26	TIMED _ WAITING	false	true
app-thread-pool-2	main	11,462.33	TIMED _ WAITING	false	true
app-thread-pool-1	main	11,588.22	TIMED _ WAITING	false	true

System Monitor View - Admin Logs

This tab contains the Classic Import Log

System Monitor View - Info

The Info tab displays environment variables defined in the docker files, JVM information and also contains details about configuration files.
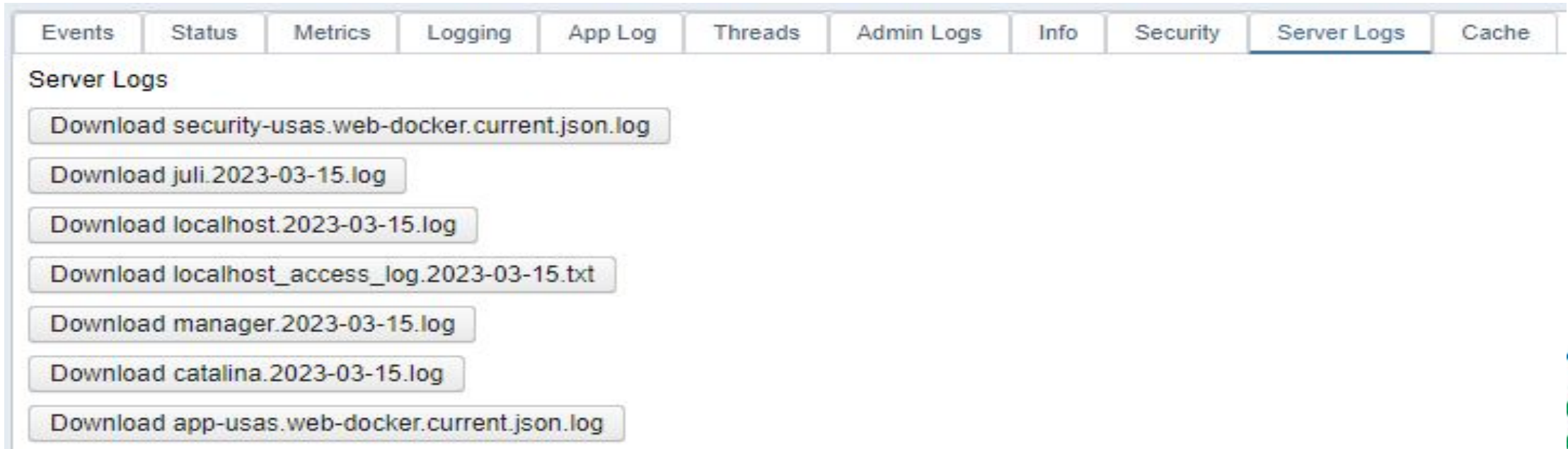
System Monitor View - Security

The security log grid will display all authentication events being saved to the database when users log in and log out of the application. The grid may be filtered and a report may be generated using the report button.

Events	Status	Metrics	Logging	App Log	Threads	Admin Logs	Info	Security	Server Logs	Cache

☐ Auto Refresh

Timestamp	Level	Logger Name	Message
2023-03-15 12:11:25.123	INFO	ssdt.monitor.authenticator	Authentication Event: AuthenticationSuccessDomainEvent@2023-03-15:12:11:25 by Unknown | admin | org.springfra
2023-03-15 10:14:27.831	INFO	ssdt.monitor.authenticator	Authentication Event: AuthenticationSuccessDomainEvent@2023-03-15:10:14:27 by Unknown | admin | org.springfra

System Monitor View - Server Logs

The Server Logs tab contains downloadable links to various log files related to the application and the server it's running on.

System Monitor View - Cache

Information on the different caches in USxS. Will not be used without direction from SSDT.

USXS-R General Troubleshooting Steps

For troubleshooting issues in USxS it can be difficult to know if the concentration should be on the server, the instance, or a particular report / process. Depending on where the problem originates, different information and troubleshooting techniques are needed.

- Common Areas to Troubleshoot
    - Entire Server
    - One Particular Application Instance
    - Specific Report or Task

More information can be found on the General Troubleshooting wiki page

Auditable Events

Auditable Events in USPS track when certain processes start and complete.

Useful when you need to determine when a process happened, but are not concerned with the transactional history (Audit Report).

There are 40 Auditable Events in USPS including; ACH Generation, Benefit Accrual, Payroll Initialization, Payroll Post, User Password Changes, etc…

Auditable Events - Custom Grid

You are able to view the events in a Custom Grid with filtering and sorting options

Auditable Events - Template Report

There is also a PDF report than can be found in the Report Manager, **SSDT Auditable Events.** Parameters default to all events in the current fiscal year. Can be customised for your needs

Auditable Events - Template Report Example

				Type	Text
7/14/2022 10:59	Payroll Post Event	admin		detail	06/18/2022
				detail	2nd pay in June 2022
				detail	887b1449-2158-43c9-be05-e10
				payroll	Payroll: [id:887b1449-2158-43
				reportBundleEventParameters	[:]
				target	
7/14/2022 10:59	Payroll Post Completed Event	admin		Type	Text
				detail	06/18/2022
				detail	2nd pay in June 2022

3/27/2023

System Monitor View

Using the Monitor Service Options in USxS

SSDT Educational Software Solutions