

Ask the Expert

How Do You Review Activity In SAS®
Management Console?

Michelle Homes, Co-founder, Sales and Communications Maestro, Metacoda
Paul Homes, Co-founder and Developer, Metacoda





Michelle Homes

Co-founder, Sales and Communications Maestro

Michelle is an enthusiastic and active member of the SAS community and social sphere. A SAS user since the 1990s, Michelle co-founded Metacoda in 2007 and, as business development manager, enjoys working with SAS customers around the world to help keep their SAS platforms secure through effective metadata administration.



Paul Homes

Co-founder and Developer

Paul is a specialist in SAS platform administration, SAS metadata security and SAS metadata. SAS has been a part of Paul's career since he began working with SAS software in the UK in the late 1980s. He's worked in multiple technical roles including consulting, software development, pre-sales, support and training, and as a Java developer. Starting Metacoda in 2007 was a natural culmination of Paul's skills and experiences. The software add-ons and plug-ins that he creates for Metacoda are tools he wishes were available when he was working as a SAS administrator with SAS 9.1.

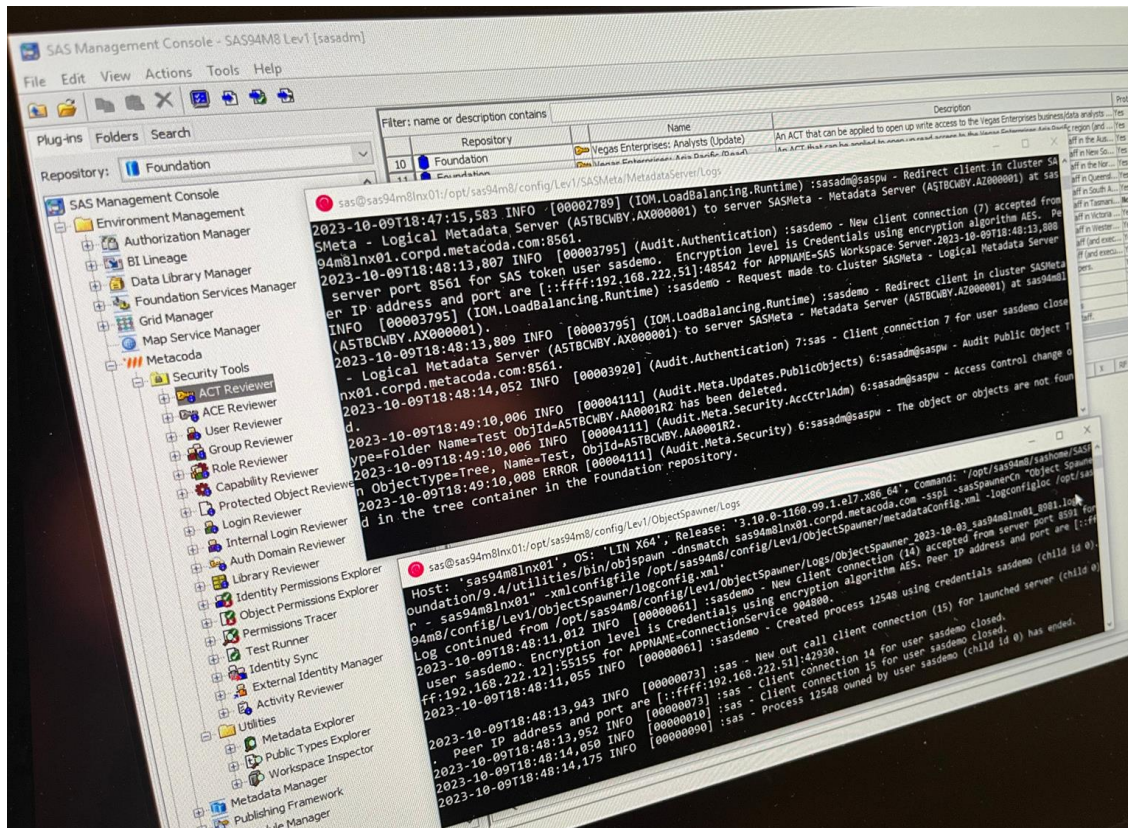


PRODUCTIVITY THROUGH METADATA VISIBILITY

How Do You Review Activity In SAS® Management Console?

24th October 2023

Examining user and object activity



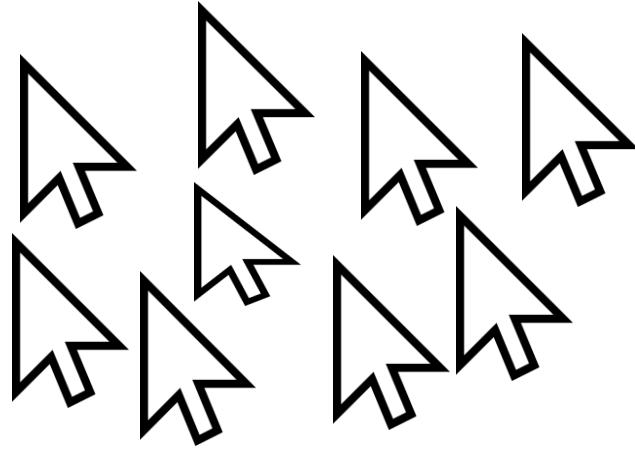
What log file?

Where to find it?

Searching the log file



A common theme...



Give people what they need in fewer clicks

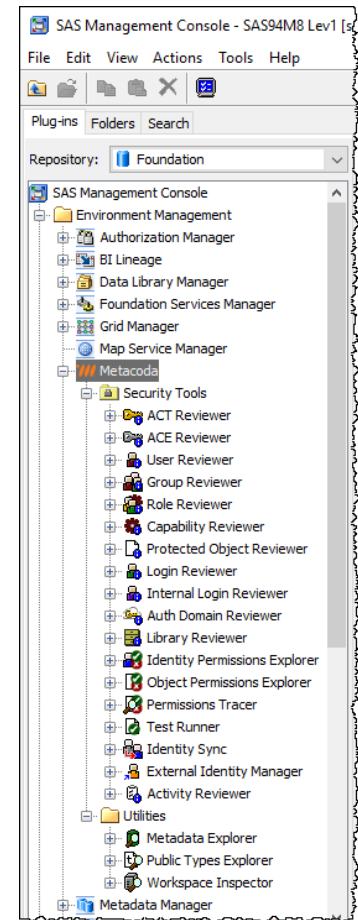
A common theme...

“ Using Metacoda, we help turn a 30 minute task into 30 seconds

“ Return on investment achieved within a week

About Metacoda

-  | SILVER PARTNER ... since 2007
- Provide add-ons to SAS® Software for enhanced **metadata** visibility and exploitation
 - Metacoda Identity Sync
 - Metacoda Security Plug-ins
 - Metacoda Testing Framework & Metacoda Activity Reviewer
- Goals:
 - Improve your productivity through enhanced metadata visibility
 - Helping to keep your SAS platform secure



FAQ: Top 2 Questions

- Audit type questions
- Related to current state of security...

#1 “Who has access to this thing?”

Metacoda
Object
Permissions
Explorer

The screenshot shows the SAS Management Console interface. The left pane displays the repository tree with 'Metacoda' expanded to 'Object Permissions Explorer'. The main pane shows the 'Object Search' results for the folder '/Vegas Enterprises'. A table lists the effective permissions for various identities across different repositories.

Effective permissions for: /Vegas Enterprises
Filter: name, display name, or logins ids contain

Display Name	Login Ids	Access Level	RM	WM	WMM	CM	R	W	C	D	A
1 SAS Administrator	dbmsowner, jmdbadmin, rmd...	Update metadata & data, Administrator	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Search Interface to SAS C...	sassearch@saspw	Update metadata & data, Administrator	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 SAS Environment Manager ...	sasevdb, sasevs@saspw	Update metadata & data, Administrator	✓	✓	✓	✓	✓	✓	✓	✓	✓
4 Jane Jacobs (Unrestricted)	AdminJane@saspw	Update metadata & data, Administrator	✓	✓	✓	✓	✓	✓	✓	✓	✓
5 Koby Kogan (Unrestricted)	AdminKoby@saspw	Update metadata & data, Administrator	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 SAS Demo User	sasdemo	Update metadata, View data, Administrator	✓	✓	✓	✓	✓	✗	✗	✗	✓
7 Jane Jacobs	demojane	Update metadata, View data, Administrator	✓	✓	✓	✓	✓	✗	✗	✗	✓
8 Koby Kogan	demokoby	Update metadata, View data, Administrator	✓	✓	✓	✓	✓	✗	✗	✗	✓
9 SAS Administrators	jmdbuser, rmdbuser	Update metadata, View data, Administrator	✓	✓	✓	✓	✓	✗	✗	✗	✓
10 Vegas Enterprises: Admins...		Update metadata, View data, Administrator	✓	✓	✓	✓	✓	✗	✗	✗	✓
11 Charles Caxton	democharles	Update folder members, Update data	✓	✓	✓	✓	✓	✓	✓	✓	✗
12 Barbara Bennings	demobarbara	Update folder members, Update data	✓	✗	✓	✓	✓	✓	✓	✓	✗
13 Vegas Enterprises: Data In...		Update folder members, Update data	✓	✗	✓	✓	✓	✓	✓	✓	✗
14 SAS Trusted User	sastrust@saspw	View metadata & data	✓	✗	✗	✗	✓	✗	✗	✗	✗
15 SAS Anonymous Web User	webanon@saspw	View metadata & data	✓	✗	✗	✗	✓	✗	✗	✗	✗
16 SAS Data Remediation Ser...	sasrmdt@saspw	View metadata & data	✓	✗	✗	✗	✓	✗	✗	✗	✗
17 Mike Mitchell	klemmike	View metadata & data	✓	✗	✗	✗	✓	✗	✗	✗	✗



#2 “What does this person have access to?”

Metacoda
Identity
Permissions
Explorer

The screenshot displays the SAS Management Console interface. On the left, a tree view shows the repository structure, with 'Metacoda' expanded to show various tools, including 'Identity Permissions Explorer'. The main window is divided into two panes. The top pane shows a list of users with columns for 'Display Name', 'Description', and 'Login Ids'. The user 'Barbara Bennings' is selected. The bottom pane shows a table of permissions for the selected user across various metadata objects.

Display Name	Description	Login Ids
1 Aaron Atkins	Business Analyst II	demoaaron
2 Alice Adams	CEO	demoalice
3 Barbara Bennings	Data Integration Developer I	demobarbara
4 BI Dashboard Administrators	The members of this group are allowed to administer content for the SAS BI Dashboard product. The ...	
5 BI Dashboard Users	The members of this group are allowed general viewing access of content for the SAS BI Dashboard ...	
6 BI Web Services Users	Allows members to create and delete SAS BI Web Services.	
7 Bob Baxter	CFO	demobob
8 Carol Charleston	Sales Director (US)	democarol
9 Charles Caxton	Data Integration Developer II	democharles
10 David Doyle	Account Rep. (US)	demodavid
11 Demo: Group Contains Self 1	Demonstrates a group that contains itself as a member through a nested group (Demo: Contains Sel...	
12 Demo: Group Contains Self 2	(see description for 'Demo: Contains Self 1')	
13 Dorothy Dickens	Data Analyst I	demodorothy
14 Euan Easton	Data Analyst II	demoeuan
15 Eve Evans	Sales Director (CA)	demoeve

Name	Preassigned?	Assigned Servers	Access Level	RM	WM	CM	R	W	C	D	I	S	U	CT	DT
1 SAS Sample Data Library	No	SASApp	Update metadata & data	✓	✓	✓	✓	✓	✓	✓					
2 SASApp - SASDATA	Yes	SASApp	Update metadata & data	✓	✓	✓	✓	✓	✓	✓					
3 PostgreSQL Demo Library	Yes	SASApp	Update metadata & data	✓	✓	✓	✓	✓	✓	✓					
4 MySQL Demo Library	Yes	SASApp	Update metadata & data	✓	✓	✓	✓	✓	✓	✓					
5 HR Library	Yes	SASApp	View metadata & data	✓	✗	✗	✓	✗	✗	✗					
6 STP Samples	Yes	SASApp	View metadata	✓	✗	✗	✗	✗	✗	✗					
7 SASApp - wrstemp	Yes	SASApp	View metadata	✓	✗	✗	✗	✗	✗	✗					
8 SASApp - wrsdist	Yes	SASApp	View metadata	✓	✗	✗	✗	✗	✗	✗					
9 Oracle Finance Library	No	SASApp	Hide metadata	✗	✗	✗	✗	✗	✗	✗					



FAQ: Follow up questions

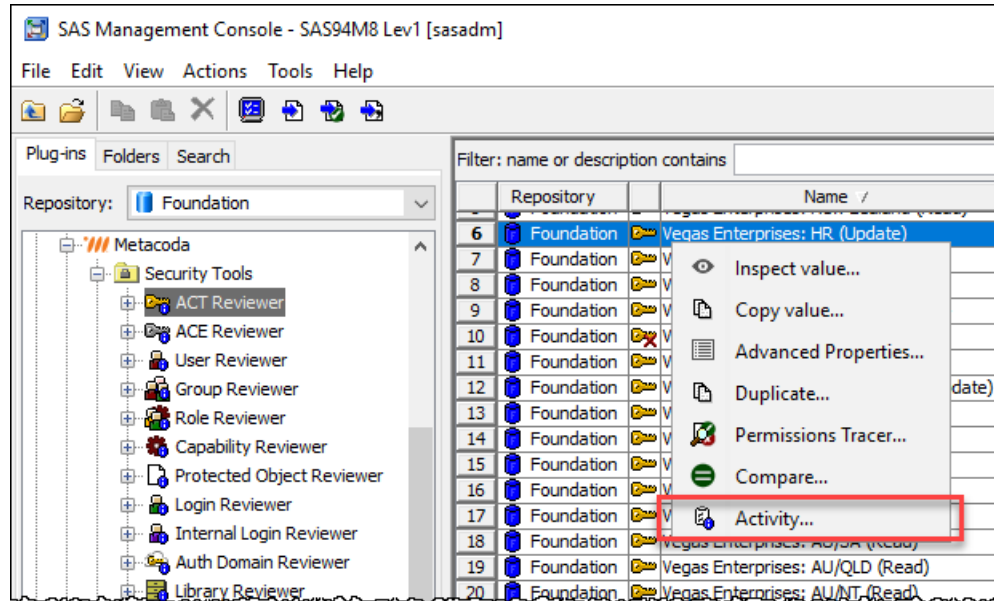
- Also audit type questions
- Related to history / activity ...
 - “What has been done to this thing?”
 - “What has this person done?”
- We often direct people to SAS Environment Manager APM
- Now we have an Activity Reviewer plug-in too

Why?

- SAS Environment Manager APM not enabled by default
- Times have changed – open-source DevOps software
- Recency – show recent activity – in seconds vs 24 hours
- Performance – show recent activity quickly
- **Context** – show activity for the things I'm looking at

Context: Activity On Object

#1 “What has been done to this thing?”



Context: Activity On Object

The screenshot displays the SAS Management Console interface. At the top, the title bar reads "SAS Management Console - SAS94M8 Lev1 [sasadm]". Below the title bar is a menu bar with "File", "Edit", "View", "Actions", "Tools", and "Help". A toolbar with various icons is positioned below the menu bar.

The main window is divided into several sections:

- Left Panel:** A tree view showing the repository structure. The "Foundation" repository is selected, and the "ACT Reviewer" tool is highlighted under "Security Tools".
- Top Panel:** A table listing Access Control Templates (ACTs). The filter is "name or description contains".

Repository	Name /	Description	Protected?	In Use?	Redundant?
6	Foundation Vegas Enterprises: HR (Update)	An ACT that can be applied to open up write access to the Vegas Enterprises HR staff	Yes	Yes	No
7	Foundation Vegas Enterprises: Hide	A custom ACT for Vegas Enterprises that hides metadata from all but administrators and services.	Yes	Yes	No
8	Foundation Vegas Enterprises: Finance (Update)	An ACT that can be applied to open up write access to the Vegas Enterprises Finance staff.	Yes	Yes	No
9	Foundation Vegas Enterprises: Executives (Read)	An ACT that can be applied to open up read access to the Vegas Enterprises Executives	Yes	Yes	No

The **Activity** window is open, showing details for the selected object: "Vegas Enterprises: HR (Update)".

Object: Vegas Enterprises: HR (Update)
Identity: (any)
Search: *

	Timestamp	Component	Log Level	Message	Message Type	Appname	Client IP	Obj Id	User
1	2023-09-17T08:11:26.643	SAS Metadata Server	INFO	Access Control change on ObjectType=AccessControlTemplate, Name=Vegas Enterprises: HR (Update), Ob...	Access Control			ASTBCWB...AO000000	sasadm@saspw
2	2023-09-17T08:11:04.990	SAS Metadata Server	INFO	Audit Public Object Type=Access control template Name=Vegas Enterprises: HR (Update) ObjId=ASTBCWB...	Public Object			ASTBCWB...AO000000	sasadm@saspw
3	2023-09-17T08:11:04.990	SAS Metadata Server	INFO	Changed AccessControlTemplate Name=Vegas Enterprises: HR (Update), ObjId=ASTBCWB...AO000000.	Access Control			ASTBCWB...AO000000	sasadm@saspw

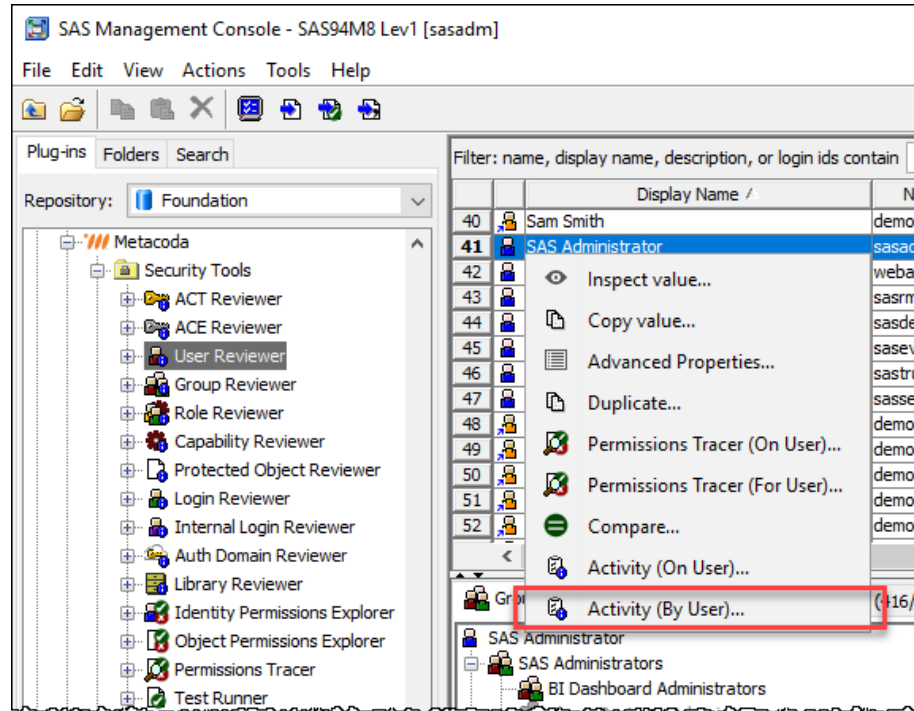
Displaying the most recent 3 log records that match the specified search criteria.

At the bottom of the console, a status bar shows: "Found 36 Access Control Templates (ACTs) in 2.609 seconds." The system tray includes the user "sasadm@saspw as Unrestricted" and the session ID "sas94m8lnx01 : 8561".



Context: Activity By User

#2 “What has this person done?”



Context: Activity By User

SAS Management Console - SAS94M8 Lev1 [sasadm]

File Edit View Actions Tools Help

Plug-ins Folders Search

Repository: Foundation

Filter: name, display name, description, or login ids contain

ID	Display Name /	Name	Description	Title	Protected?
40	Sam Smith	demosam	Account Rep. (AU/ACT)	Account Rep. (AU/ACT)	No
41	SAS Administrator	sasadm			No
42	SAS Anonymous Web User	webanon			No
43	SAS Data Remediation Services User	sasrmdt			No
44	SAS Demo User	sasdemo			Yes
45	SAS Environment Manager Service Account	sasenvs	SAS Environment Manager Service Account		No
46	SAS Trusted User	sasustr			No

Activity

Object: (any)

Identity: SAS Administrator

Search: *

	Timestamp	Component	Log Level	Message	Message Type	Appname	Client IP	Obj Id	User
1	2023-09-17T08:11:26.643	SAS Metadata Server	INFO	Access Control change on Object type=AccessControlTemplate, Name=Vegas Enterprises: HR (Upda...	Access Control			ASTBCWBV.A000000	sasadm@saspw
2	2023-09-17T08:11:04.990	SAS Metadata Server	INFO	Audit Public Object Type=Access control template Name=Vegas Enterprises: HR (Update) ObjId=A5...	Public Object			ASTBCWBV.A000000	sasadm@saspw
3	2023-09-17T08:11:04.990	SAS Metadata Server	INFO	Changed AccessControlTemplate Name=Vegas Enterprises: HR (Update), ObjId=ASTBCWBV.A0000...	Access Control			ASTBCWBV.A000000	sasadm@saspw
4	2023-09-17T07:58:43.721	SAS Metadata Server	INFO	New client connection (1405) accepted from server port 8561 for user sasadm@saspw. Encryption le...	Connection	SASManage...	::ffff:192.168.222.12		sasadm@saspw
5	2023-09-17T07:58:43.721	SAS Metadata Server	INFO	Request made to cluster SASMeta - Logical Metadata Server (ASTBCWBV.AX000001).	Connection				sasadm@saspw
6	2023-09-17T07:58:43.721	SAS Metadata Server	INFO	Redirect client in cluster SASMeta - Logical Metadata Server (ASTBCWBV.AX000001) to server SASM...	Connection				sasadm@saspw
7	2023-09-16T16:25:21.568	SAS Metadata Server	INFO	Client connection 1405 for user sasadm@saspw closed.	Connection				sasadm@saspw
8	2023-09-16T14:17:59.970	SAS Metadata Server	INFO	Audit Public Object Type=Library Name=HR Library ObjId=ASTBCWBV.B5000005 has been updated.	Public Object			ASTBCWBV.B5000005	sasadm@saspw
9	2023-09-16T14:17:59.943	SAS Metadata Server	INFO	Audit Public Object Type=Library Name=HR Library ObjId=ASTBCWBV.B5000005 has been updated.	Public Object			ASTBCWBV.B5000005	sasadm@saspw
10	2023-09-16T14:17:59.943	SAS Metadata Server	INFO	Access Control change on Object type=SASLibrary, Name=HR Library, ObjId=ASTBCWBV.B5000005.	Access Control			ASTBCWBV.B5000005	sasadm@saspw
11	2023-09-16T13:54:48.108	SAS Metadata Server	INFO	Request made to cluster SASMeta - Logical Metadata Server (ASTBCWBV.AX000001).	Connection				sasadm@saspw
12	2023-09-16T13:54:48.108	SAS Metadata Server	INFO	Redirect client in cluster SASMeta - Logical Metadata Server (ASTBCWBV.AX000001) to server SASM...	Connection				sasadm@saspw
13	2023-09-16T13:54:48.096	SAS Metadata Server	INFO	New client connection (1405) accepted from server port 8561 for user sasadm@saspw. Encry ption le...	Connection	SASManage...	::ffff:192.168.222.12		sasadm@saspw
14	2023-09-15T20:47:49.437	SAS Metadata Server	INFO	Client connection 1403 for user sasadm@saspw closed.	Connection				sasadm@saspw
15	2023-09-15T11:06:43.191	SAS Metadata Server	INFO	Client connection 1402 for user sasadm@saspw closed.	Connection				sasadm@saspw
16	2023-09-15T09:08:47.371	SAS Metadata Server	INFO	Audit Public Object Type=Library Name=HR Library ObjId=ASTBCWBV.B5000005 has been updated.	Public Object			ASTBCWBV.B5000005	sasadm@saspw
17	2023-09-15T09:08:47.342	SAS Metadata Server	INFO	Audit Public Object Type=Library Name=HR Library ObjId=ASTBCWBV.B5000005 has been updated.	Public Object			ASTBCWBV.B5000005	sasadm@saspw
18	2023-09-15T09:08:47.342	SAS Metadata Server	INFO	Access Control change on Object type=SASLibrary, Name=HR Library, ObjId=ASTBCWBV.B5000005.	Access Control			ASTBCWBV.B5000005	sasadm@saspw

Displaying the most recent 1,000 log records that match the specified search criteria.

Found 58 users in 0.062 seconds.

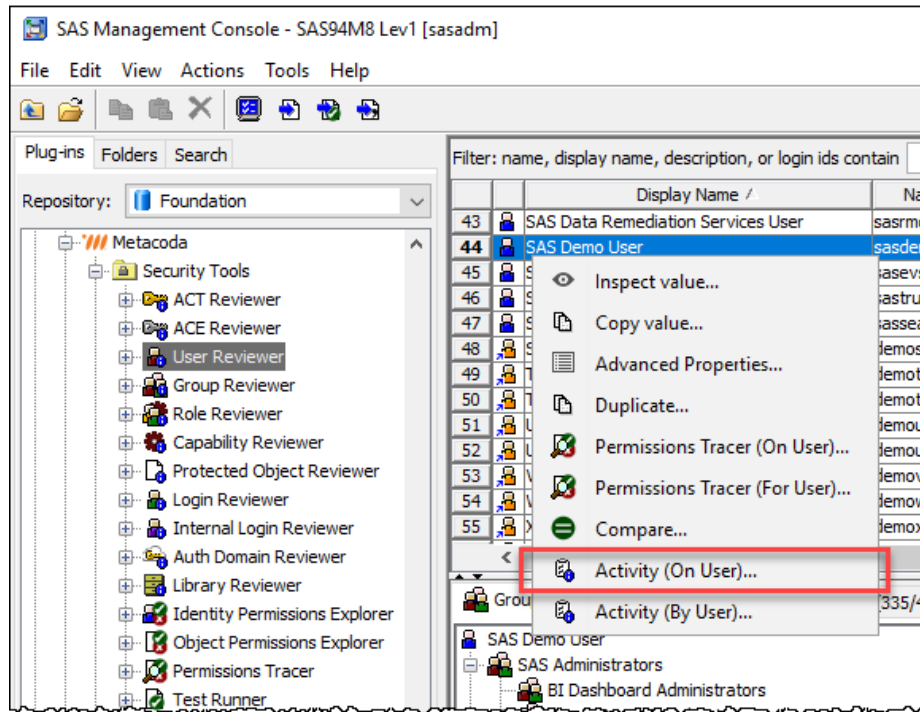
sasadm@saspw as Unrestricted | sas94m8lv01: 8561



Context: Activity On User (Object)

Users are objects too ...

#1 “What has been done to this thing (person)?”



Context: Activity On User (Object)

The screenshot displays the SAS Management Console interface. The main window shows a list of users with the following data:

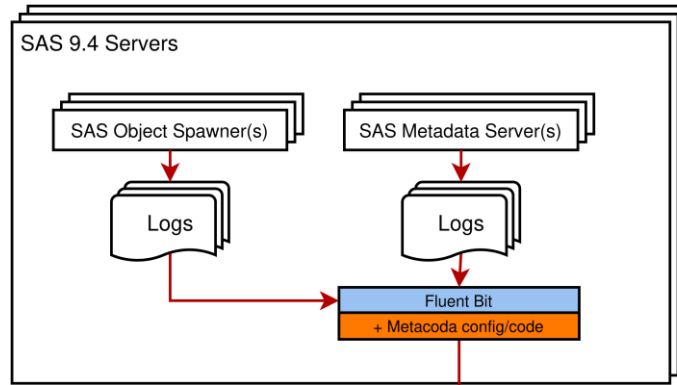
ID	Display Name	Name	Description	Title	Protected?
43	SAS Data Remediation Services User	sasrmdt			No
44	SAS Demo User	sasdemo			Yes
45	SAS Environment Manager Service Account	sasevs	SAS Environment Manager Service Account		No
46	SAS Trusted User	sastrust			No
47	Search Interface to SAS Content User	saissrch			No
48	Susan Schmidt	demosusan	Accountant (AU)	Accountant (AU)	No
49	Tara Thompson	demotara	SAS Data Manager (AU)	SAS Data Manager (AU)	No

An 'Activity' dialog box is open, showing details for the selected user 'SAS Demo User'. The activity log contains the following records:

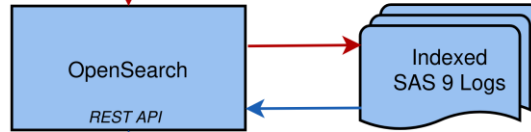
Timestamp	Component	Log Level	Message	Message Type	Appname	Client IP	Obj Id	User
2023-09-17T08:22:22.947	SAS Metadata Server	INFO	Audit Public Object Type=User Name=sasdemo ObjId=ASTBCWBY.AP000003 has been updated.	Identity			ASTBCWBY.AP000003	sasadm@saspw
2023-09-17T08:22:22.947	SAS Metadata Server	INFO	Changed IdentityType=Person Name=sasdemo, ObjId=ASTBCWBY.AP000003.	Identity			ASTBCWBY.AP000003	sasadm@saspw

At the bottom of the console, a status bar indicates 'Found 58 users in 0.062 seconds.' and the user 'sasadm@saspw as Unrestricted' is logged in.

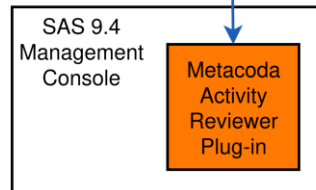
Metacoda Activity Reviewer Architecture



Collect Logs



Store Logs



Query Logs

Demonstration

Metacoda Security Plug-ins: Licensing

- Annual Renewable License
- Single-Site License
 - one organization
 - priced based on number of metadata environments
 - unlimited software installs

	Starter	Premium	Enterprise
Metacoda Identity Sync Plug-in	✓	✓	✓
Metacoda Security Plug-ins		✓	✓
Metacoda Testing Framework Metacoda Activity Reviewer			✓



Metacoda Security Plug-ins - Licensing

- Includes:
 - Access to all software updates and documentation
 - Technical support
- 1 month free evaluations available



Questions?





Contact Us



Email: info@metacoda.com



Web: www.metacoda.com



Twitter: twitter.com/metacoda



Facebook: facebook.com/Metacoda



LinkedIn: linkedin.com/company/metacoda



YouTube: www.youtube.com/user/metacoda





PRODUCTIVITY THROUGH METADATA VISIBILITY