

# CA Wily Manager™ for CA SiteMinder®

## Versions:

SM r12.51

CA APM r9.5.1

CA Wily for SM Manager r12.0.4  
(32bit for SMPS) & (64bit for SMWA)

Updated by Alan Baugher - Dec 2013

# Deck Layout

## ■ What

- What is CA Wily / CA APM? A view into key features and pictures of historical SM data.

## ■ Why

- Why should these tools be deployed? What value do they bring.
- Identify key SM issues that could be resolved quicker to lower cost and effort.

## ■ How

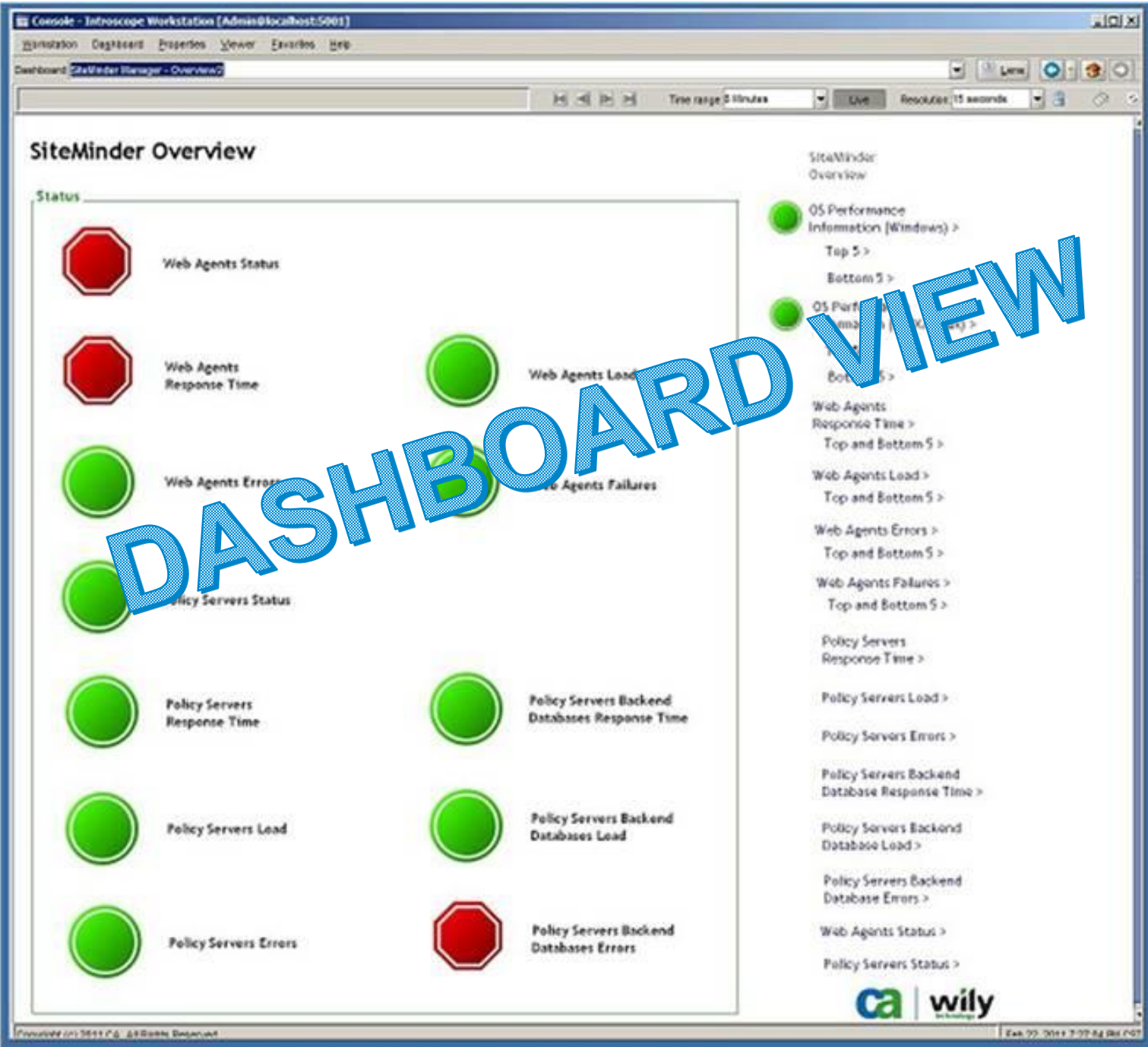
- How may they be deployed rapidly and with standardized configurations to expand upon a base SM deployment.
- Deployed on CentOS x64 with CA SM r12.51
- Need to deploy both 32bit for SMPS and 64bit for SMWA to avoid over customization of base installers of SMM (CA Wily for SM Manager)

# Key features of the CA Wily Manager for SiteMinder

Manager for SiteMinder provides CA Wily Introscope with CA SiteMinder metric data. It enables the use of Introscope to monitor the performance impact of CA SiteMinder on your application infrastructure. This package will expand upon the CA APM (Wily) SM Powerpackage of SM Web Application Agents.

Key features include:

- A real-time monitor of availability, health, and operational performance for each CA SiteMinder Web Agent and CA SiteMinder Policy Server.
- An operating system monitor to measure the status of each web server hosting a CA SiteMinder Web Agent and CA SiteMinder Policy Server.
- A real-time monitor of availability, load, and performance for each CA SiteMinder data store.
- Programmable alerts.
- Customizable dashboards for visualizing CA SiteMinder availability, health, and performance.
- Alerts through console, email, or other means when CA SiteMinder metrics violate programmable alerting levels.
- Customized reports on CA SiteMinder availability, health, and performance over a specific time frame.
- Integration with commonly-used enterprise monitoring systems.



## SiteMinder Policy Server Backend Database Errors

Backend Database Total Errors Per Interval

[illegible]

### Policy Store Errors



### Key Store Errors



### User State Errors




Ⓢ Ⓣ "SaveOverwrite": 1, "Policy": "Breeds For Interval" = 0



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Ⓢ = "superdense"; title = "Green for interval = 11"

[SiteMinder Overview](#) 

OS Performance  
Information (Windows) >

Top 5 »

Bottom 5 &gt;

OS Performance  
Information (UNIX/Linux) >

Top 5 &gt;

Letter 32

Web Agents  
Response Time >

Top and Bottom 3 >

Web Agents Load &gt;

Top and Bottom 5 &gt;

[Web Agents Errors >](#)

Top and Bottom 3 &gt;

[Web Agents Failures >](#)

Top and Bottom 5 >

Policy Servers  
Response Time >[Policy Servers Load >](#)[Policy Servers Errors >](#)

Policy Servers Backend  
Database Response Time :

Policy Servers Backend  
Database Load >

### Policy Servers Backend Database Errors

[Web Agents Status >](#)[Policy Servers Status >](#)

\*SuperDomain\Win7-64\StdIndexManager\StdIndexResponder\StdIndexPolicy Server\301-535-sunt\Databases\UserStore\LDAP\myUserDirectory

Map | Browse

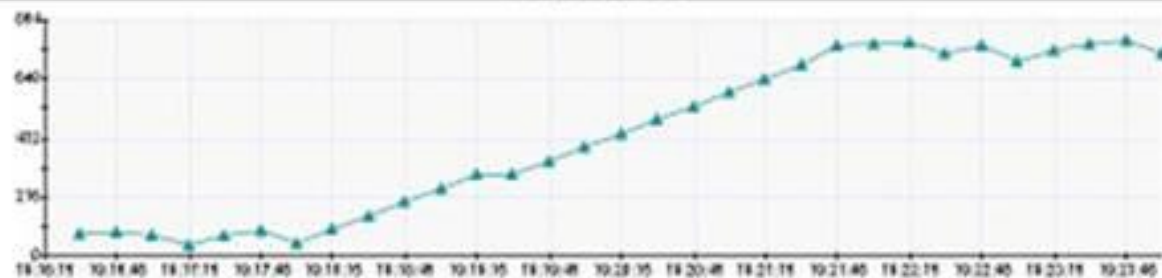
SuperDomain  
Custom Metric Host (Virtual)  
Win7-64  
NET  
AppServers  
CEM  
Databases  
Extensions  
PowerPacks  
SOA  
StdIndexManager  
StdIndexResponder ("SuperDomain")

Std Host  
Std Port  
Java Version  
Launch Time  
VirtualMachine  
EPAgent  
OC Heap  
Host  
Metrics  
OSResource-Sensors  
StdIndex  
Policy Server  
301-535-sunt  
Caching  
Databases  
Average Response Time (ms)  
Errors Per Interval  
Responses Per Interval  
KeyStore  
PolicyStore  
UserStore  
Average Response Time (ms)  
Errors Per Interval  
Responses Per Interval  
LDAP  
myUserDirectory

StdIndex | General | Tracks | Errors | Search | Metric Chart

UserStore Information

Average Response Time



Responses Per Interval



Errors Per Interval





## SiteMinder Web Agents Response Time

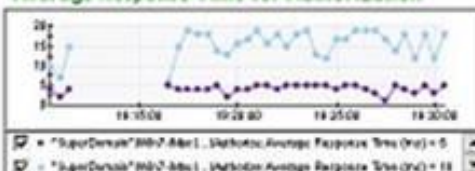
### Average Response Time for all the Web Agents



### Average Response Time for Login



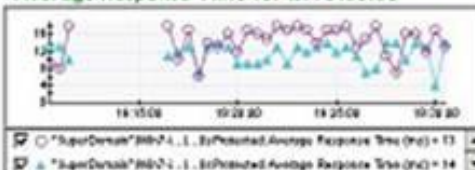
### Average Response Time for Authorization



### Average Response Time for Validation



### Average Response Time for IsProtected



< SiteMinder Overview

OS Performance

Information (Windows) >

Top 5 >

Bottom 5 >

OS Performance

Information (UNIX/Linux) >

Top 5 >

Bottom 5 >

Web Agents

Response Time

Top and Bottom 5 >

Web Agents Load >

Top and Bottom 5 >

Web Agents Errors >

Top and Bottom 5 >

Web Agents Failures >

Top and Bottom 5 >

Policy Servers

Response Time >

Policy Servers Load >

Policy Servers Errors >

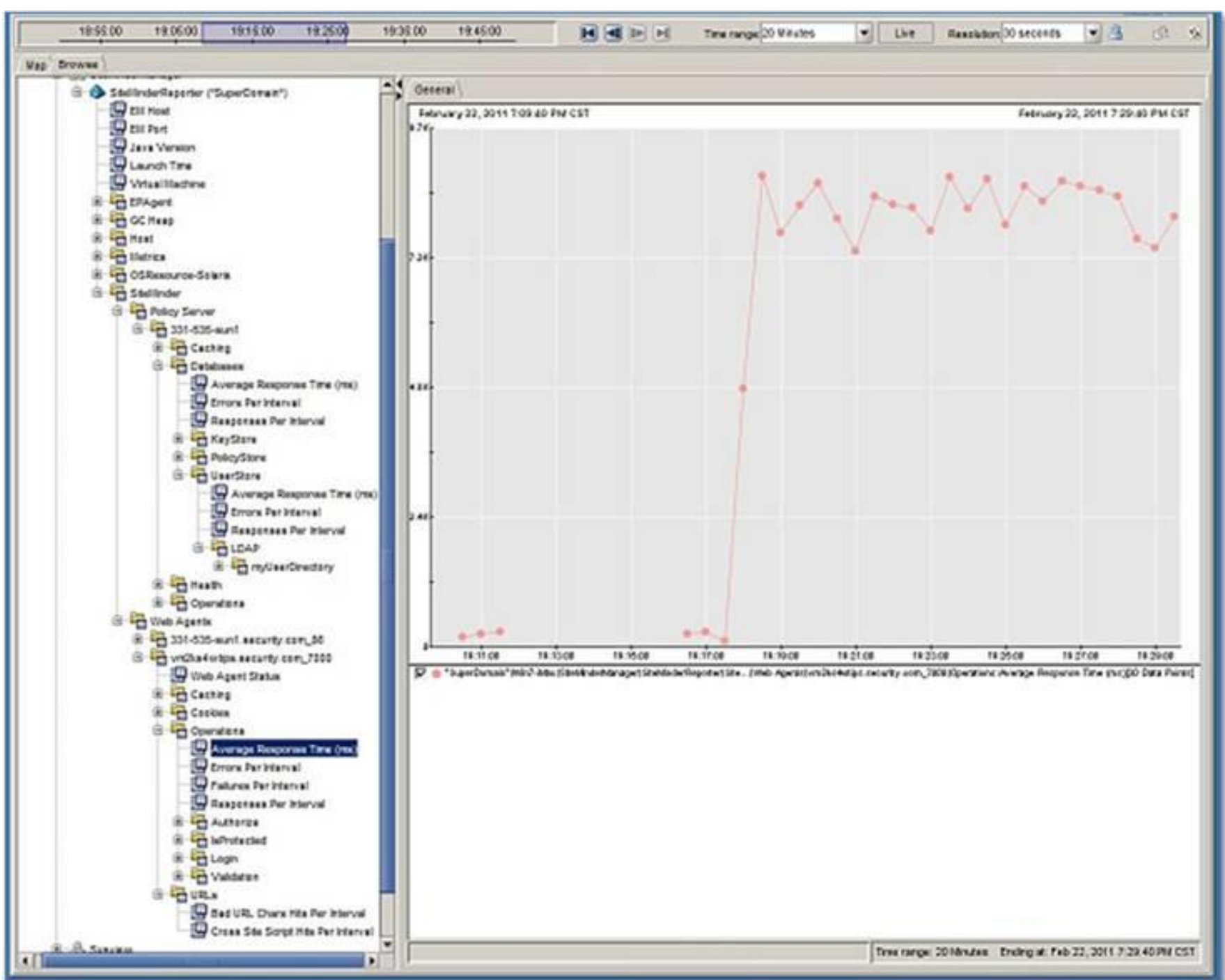
Policy Servers Backend  
Database Response Time >

Policy Servers Backend  
Database Load >

Policy Servers Backend  
Database Errors >

Web Agents Status >

Policy Servers Status >





# Common SiteMinder Issues

How Wily Can Help

# Common SiteMinder Issues

1. LDAP Connections
2. Socket Connections Maxing Out
3. Performance Statistics for SiteMinder
4. Network “blips”
5. Catching Errors
6. Alerting and Reporting

# Scenario #1: LDAP Connections

- Wily Manager for SiteMinder monitors the unique Policy Server connections to LDAP or ODBC user/policy/key stores.
- Each Policy Server reports its connections to each external data store.
- SMM can alert when the average response time for an LDAP that is slow, or when the load across a given LDAP from a Policy Server exceeds baseline levels.
- If an LDAP server is shared among several Policy Servers, SMM2 can be configured to give a cumulative load metric showing the overall load placed by SiteMinder Policy Servers on that LDAP server and alert accordingly.

# Scenario #2: Socket Connections Maxing Out

- SiteMinder Policy Server socket connections can be consumed to an unhealthy level, resulting in slow SiteMinder performance.
- SMM can alert when overall socket consumption exceeds acceptable thresholds.
- In some cases, certain directories are assigned a subset of the overall available socket connections.
- This subset can be consumed, even when overall socket consumption remains below the warning threshold.
- These problems can be identified because socket availability limits the number of operations that the Policy Server can execute.

# Scenario #3: SiteMinder Performance Statistics

- Look at performance and load measured across all three tiers.
  - At the agent tier, the performance shows end-user performance for each SiteMinder agent – and broken down by operation. A slow agent on a specific operation (say, Login) indicates a poor login performance.
  - It is also important to see if the slowdowns are accompanied by periods of low cache hit ratio (excessive calls to the Policy Server), or abnormal metrics from the underlying OS platform (OS-related performance problems).
  - At the Policy Server tier, operation performance can either be correlated to slow back-end performance on a data store, low cache ratio, or it may be an indicator of a set of socket connections with limited availability from the Policy Server to a back end data store.

# Scenario #4: Network “blips”

- For instance, if an agent shows slow performance, but a Policy Server shows consistent operations response within the acceptable performance range, this could be a network problem.
- Or a spurious Policy Server-data store connection could also be a sign of a bad network connection between a Policy Server and Data Store.
- Any errors exposed by the calls to the back end data stores can also indicate broken data connections between Policy Server and data store – which might be unique to the Policy Server or shown across multiple Policy Servers accessing a shared data store.



# Scenario #5: Catching Errors

- Agent errors are reported by the Agent on each operation.
- Agent failures, which typically result in a 500 error, are also reported.

# Scenarios #6: Alerting and Reporting

- Introscope can alert and report on any metric or metric group.
- Alerts can include email, workstation pop-up, or any scripted action.
- Reporting can be done ad-hoc or via scheduled job.

# Why is Wily Used to Manage More Critical Applications Than Any Other Provider?

- **Originator of and Leader in J2EE application management**

- Patented core technology part of **Java standard** (JSR-163)
- Introduced agents to monitor **.NET** applications
- Introduced agents to monitor **SiteMinder** Web Agents, Policy Servers, and connected Backends

- **Ability to monitor applications with:**

- **End-to-end** visibility, from User to back-end Systems
- **Low Overhead, Always-on** performance recording
- **All the Transactions** Diagnostics:
  - Deep **real-time** monitoring of 100% of real transactions

- **Single management system for All application stakeholders**

- For Business and IT
- Expert and Non-expert Operations
- User-customized

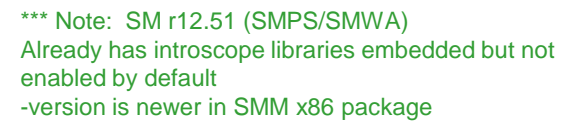
- **Fast implementation — End the pain, fast**

# Siteminder and Wily (APM) LAB



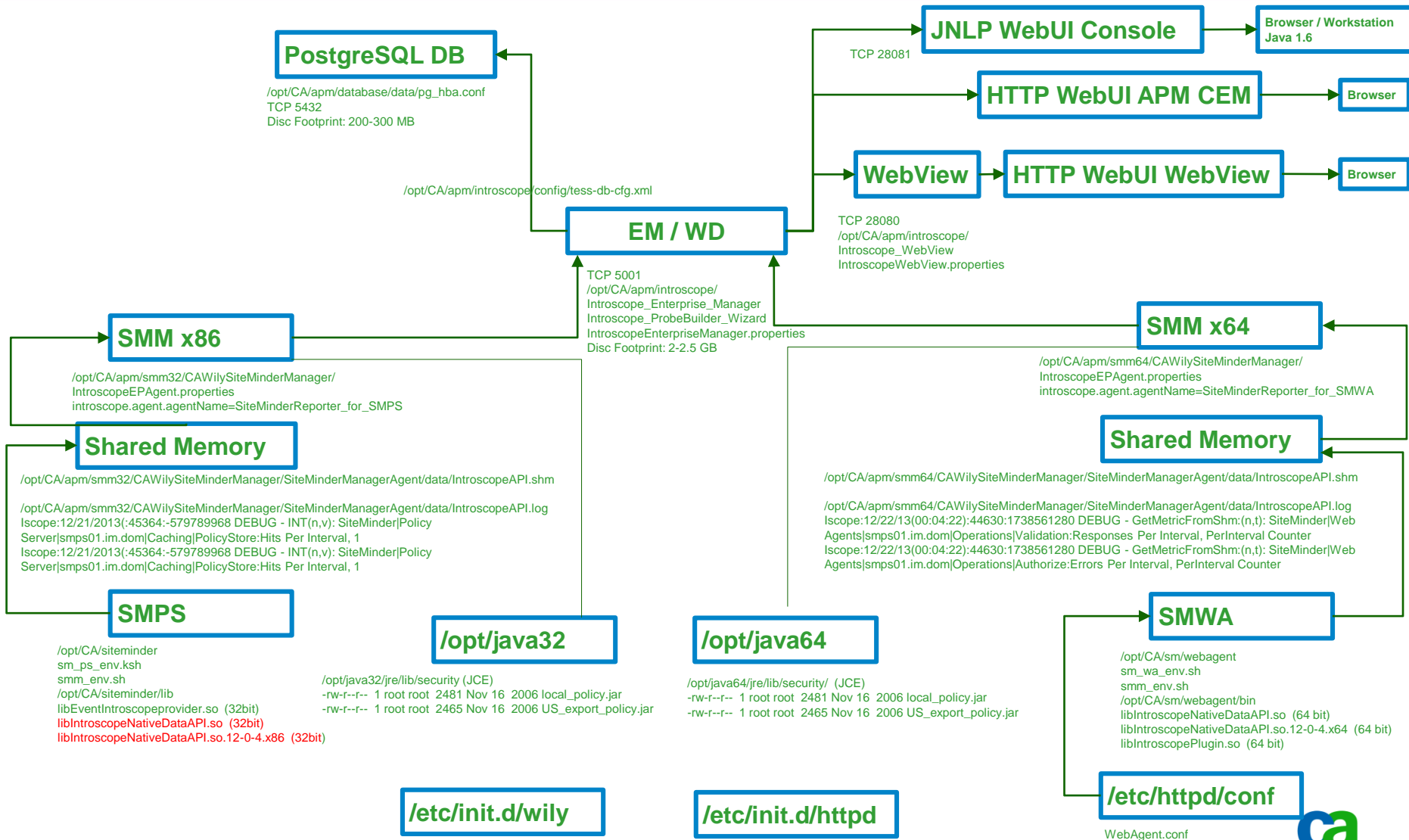
Alan Baugher

Dec 2013



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# SMM for SMPS / SMWA





# STEPS FOR DEPLOYMENT ON CENTOS 6.4 with CA SM r12.51

- Overview for installation of CA APM (Wily) tools to support historical and real-time view of SM PS and SM Web Agents with a DashBoard
  - See page 9. of Wily Manager for SM User Guide for key benefits.
  - Web server and application server-based security - When SiteMinder security is enforced using both the SiteMinder Web Agent and SiteMinder ASA, it is possible to have four (4) sets of data:
    - SiteMinder Web Agent metrics from the Wily Manager for SiteMinder
    - SiteMinder PolicyServer metrics from the Wily Manager for SM
    - OS metrics from the Wily Manager for SM
    - SM Web Application Server metrics from the CA APM Introscope PowerPack for SiteMinder.

# Installation Assumptions

- Installation will be deployed on
  - - One (1) vmware image of CentOS 6.4 x64 where SM r12.51 is deployed as the SMPS and SMWA on Apache 2.2 with JAVA 1.6 x64/x86 installed; with 2 GB RAM and 2 – 20 GB HDD.
- - Workstation
  - - Xwindows emulator is available (Xming or similar; needed for installation check on CentOS; not needed for Windows OS install)
  - - Putty with X11 Forwarding enabled.

# Pre-Step: Acquire a wily license key

- Unable to progress without an evaluation license key.
  - Reach out to your local account team to request evaluation license or use a current EM license.
    - Acquire an 30 day evaluation license from CA Wily Support.
  - License file will have the format:  
WilyIntroscopeEval.2014.Aug.20.em.lic

# Step 01: Select Database

- 1. Select database to use
  - a. Postgresql (embedded database) [Use for quicker installation; disk sizing 200-300 MB]
  - b. Oracle (assumes client has already has this deployed with a service account)
- Note: The database is not used for the SM Components but is required to leverage the centralized APM Enterprise Management component.
- The database is minimally used. It is recommend to use the embedded database for a lab/dev environment, as data stored is not critical.

# Step 02: Download Wily Packages

- 2. Download three (3) packages: CA Support Site
  - a. Full CA APM (Wily) Tool set for EM components for the selected OS & embedded PostgreSQL DB for use (DEPLOYED)
    - - **introscope9.5.1.0linuxAMD64.bin** (GEN10101028E.tar) & **ca-eula.txt**
  - b. OSGI Extension Package (Includes SM Power Packages)
    - - **osgiPackages.v9.5.1.0.unix.tar** & **eula.txt** (DEPLOYED)
  - c. CA Wily for SM Package (Feb 18, 2013)
    - - **CAWilySiteMinderManager\_12.0.4.0Linux64Installer.tar** (CA Wily Base x64 for SMWA installer - DEPLOYED)
    - - **CAWilySiteMinderManager\_12.0.4.0Linux86Installer.tar** (CA Wily Base x86 for SMPS installer - DEPLOYED)
    - - CAWilySiteMinder\_Unix\_SNMPCollector\_8.0.tar (CA Wily SNMP Collector for SiteMinder for remote WA - \* NOT deployed for lab)
    - - CAWilySiteMinderManager\_12.0.4.0\_Unix\_DataTransferExt.tar (Share data between Introscope Enterprise Managers - \* NOT Deployed for lab)
    - - CAWilySiteMinderManager\_12.0.4.0\_Unix\_EM.tar (Base files on top of existing EM - \* NOT deployed for lab)

# Step 03/04: Prepare Environment

- 3. Prepare OS environment
  - a. Create new user to install Wily tools under: `useradd -m apm`
  - b. Create folder & sub-folders for Wily EM component and PostgreSQL DB: `/opt/CA/apm/introscope` (2-2.5 GB) & `/opt/CA/apm/database` (200-300 MB)
  - c. Update ownership: `chown -R apm:apm /opt/CA/apm`
  - d. Update `.bash_profile` to change dir to `/opt/CA/apm/introscope`
- 4. Copy packages and extract contents to an installation folder on the OS: e.g. `/tmp/apm`
  - - Extract CA APM and OSGI to same folder
  - - Extract CA Wily for SM to a sub folder (to avoid collisions of file names)



# Step 05/06: Create silent Install Script

- 5. Create silent install script for EM; and execute installation as root;
  - To ensure RC (/etc/init.d) scripts are created & WA webconf.conf is updated & postgres account is created.
  - See example on prior slide.
- 6. Update ca-eula.txt (for EM install) and eula.txt (for OSGI component)
  - Do not remove text; ONLY change text at bottom of files to "accept"
  - otherwise files will be rejected as updated incorrectly.
- Example:
  - CA-EULA=accept (ca-eula.txt)
  - LGPL=accept (eula.txt)

# Step 07: Install CA APM EM

- 7. Install CA APM EM package.
  - a. `su - root` {Install as root to simplify steps}
  - b. `cd /tmp/apm/ (/media/apm)`
  - c. `./introscope9.5.1.0linuxAMD64.bin -f silent.txt`
- ERROR below will occur during installation if no Xwindows libraries are available OR DISPLAY variable is NOT populated OR no XWindow Emulator is available during installation check.
  - - \*\*\* Invocation of this Java Application has caused an InvocationTargetException. This application will now exit. (LAX)
    - Stack Trace: `java.lang.NoClassDefFoundError: Could not initialize class sun.awt.X11GraphicsEnvironment`
    - 
    - RESOLUTION: Validate X11 libraries exist.
    - - Only need the minimal libraries needed for forwarding X11; not full X11 desktop libraries. Use keysearch "X11 forwarding"
    - `yum install xorg-x11-xauth`
    - Putty SSH connection with X11 forwarding enabled (this should set the DISPLAY variable to current workstation IP address)
    - `DISPLAY=workstation_IP:0.0` (or similar where you have an emulated X11 desktop tool running) {set | grep DISPLAY}
    - XMING running / accepting request on workstation (<http://sourceforge.net/projects/xming/>)

# Step 08: Validate CA APM EM

- 8. Validate installation of
  - - CA APM EM to /opt/CA/apm/introscope
  - - File check only for ownership
  - - chown -R apm:apm /opt/CA/apm/introscope
  - - Copy license file to /opt/CA/apm/introscope/license folder
  - Example: WilyIntroscopeEval.2014.Aug.20.em.lic
  - 
  - - PostgreSQL DB to /opt/CA/apm/database
    - a. Ensure folders/files are owned by postgres
    - b. su - postgres (to ensure account exists and cd /opt/CA/apm/database to ensure no permission issues)
    - c. chmod 755 /opt/CA/apm (to ensure postgres can access the parent folders to then access the database folder)
    -
  - - Reboot and validate PostgreSQL startup script is working fine.
  - ps -ef | grep postgres {should see DB processes running}
  - netstat -an | grep 5432 {should see network connections for the DB listener port}

# Step 09: Validate EM Startup

- 9. Start CA APM EM to validate no issues with license or path issues {if possible open two(2) remote console sessions to assist with validation}
- a. su - apm
- b. cd /opt/CA/apm/introscope/bin
- c. Execute the base CA APM EM startup file (./EMCtrl.sh) (WatchDog.sh will start EMCtrl and itself - no need at this step)
- d. View the logs for CA APM EM and check for any ERROR messages: `grep "\[ERROR" *`
  - - validate no JAVA\_HOME path issues for EM or any component.
  - - If necessary, update JAVA\_HOME in base OS or within individual files for CA APM
  - - WatchDog.sh will use the CA APM embedded java jre: `JAVA_HOME=${WILYHOME}/jre` if JAVA\_HOME is null
- 
- - Updated the following scripts under /opt/CA/apm to use JAVA JDK 1.6
- Introscope\_Enterprise\_Manager:JAVA\_HOME=/opt/java64/jre
- Introscope\_ProbeBuilder\_Wizard:JAVA\_HOME=/opt/java64/jre
- Introscope\_WebView:JAVA\_HOME=/opt/java64/jre

# Step 10: Install Wily for SM

- 10. Install the CA Wily for SM packages (both 32 and 64 bit versions in different paths)
  - a. `cd /tmp/apm`
  - b. `su - root` (to ease installation; will update permission afterwards)
  - c. `./install.bin -i silent -f ./silent.properties`
- Where silent install script will deploy both version into different folders
  - 32 bit within `/opt/CA/apm/smm32/`
  - 64 bit within `/opt/CA/apm/smm64`

# Step 11: Post-Step Check for SMWA

- /etc/httpd/conf/WebAgent.conf
- # Added for CA Wily for SM 2013-12-16 AB
- # Set for BOTH as we have both
- # Manager for SiteMinder and Introscope PowerPack for SiteMinder Agent installed
- EnableIntroscopeAgentSupport=BOTH
- EnableMonitoring="YES"
- LoadPlugin="/opt/CA/sm/webagent/bin/libIntroscopePlugin.so"



# Step 12: Post-Step Check for SMWA

- /opt/CA/sm/webagent/bin
- Validate these libraries existing in the SM WA bin folder
  - -rwxrwxr-x 1 apache apache 186313 Apr 16 2013 libIntroscopePlugin.so {Included in SM PS ISO/install}
  - -rwxr-xr-x 1 apache apache 167104 Dec 16 16:19 libIntroscopeNativeDataAPI.so {Added later for CA Wily for SM}
- /opt/CA/sm/webagent
- Validate the CA Wily for SM environment file was copied to SM WA folder
  - /opt/CA/sm/webagent/smm\_env.sh {copy from CA Wily for SM path}
- View / Update /opt/CA/sm/webagent/ca\_wa\_env.sh & Append the following to the end of the file
  - #CA Wily Manager for SiteMinder Web Access Manager profile file
  - . /opt/CA/sm/webagent/smm\_env.sh

# Step 13: Post-Step Check for SMPS

- Validate the CA Wily for SM environment file was copied to SM PS folder
- Update /opt/CA/siteminder/ca\_ps\_env.ksh & Append the following to the end of the file
  - # AB - For CA Wily Libraries - 2013-12-17
  - . "\$NETE\_PS\_ROOT/smm\_env.sh"
- Validate these libraries existing in the SM PS lib folder
  - -rwxrwxr-x 1 smuser smuser 20631 Apr 16 2013 libEventIntroscopeprovider.so
  - -rwxrwxr-x 1 smuser smuser 130304 Apr 16 2013 libIntroscopeNativeDataAPI.so (Update this file from SMM)
- Update SMPS Event Handler for Logging via XPSConfig
  - XPSConfig: XPS: 5: C: /opt/CA/siteminder/lib/libEventIntroscopeprovider.so Q: Q: Q:
  - NO Requirement TO ADD libIntroscopeNativeDataAPI.so to XPS.

# Step 14: Create custom startup script for /etc/init.d with chkconfig

- See below

# Startup Script for EM,WD,SMx2,WV /etc/init.d/wily

```
#!/bin/bash
# chkconfig: 2345 99 15
# description: Autostart for CA APM EM (Enterprise Manager), CA APM WD (WatchDog)
# , SM Wily Agent, and CA APM WebView (Web Services)
# Used to auto start and address permissions issues with PID creation and
# temporary files used by CA APM e.g. /tmp/userCache.data
EM_HOME="/opt/CA/apm/introscope"
APM_HOME="/opt/CA/apm"
APM_USER=apm
PID1=$(ps -ef | grep WatchDog.jar | grep -v grep | awk '{print $2}')
PID2=$(ps -ef | grep Introscope_Enterprise_Manager.lax | grep -v grep | awk '{print $2}')
PID3=$(ps -ef | grep IntroscopeNativeDataReporter.exe | grep -v grep | awk '{print $2}')
PID4=$(ps -ef | grep Introscope_WebView.lax | grep -v grep | awk '{print $2}')
# Start the services for CA APM: EM, WD, SM, WebView
start() {
    if [ "" `ps -ef | grep Introscope_Enterprise_Manager.lax | grep -v grep` " != "" ]
    then
        echo "APM WD Running PID: $PID1"
        echo "APM EM Running PID: $PID2"
        echo "Wily SM Agent Running PID: $PID3"
        echo "WebView Console Running PID: $PID4"
    else
        echo "Starting CA APM EM, WD, WV and Wily for SM"
        echo "Please wait 30-40 seconds"
        su - $APM_USER -c "cd $EM_HOME/bin;$EM_HOME/bin/WatchDog.sh watch" >/dev/null 2>&1 &
        sleep 30
        su - $APM_USER -c "cd
$APM_HOME/smm32/CAWilySiteMinderManager/SiteMinderManagerAgent;$APM_HOME/smm32/CAWilySiteMinderManager/SiteMinderManagerAgent/StartAgent.sh start" >/dev/null 2>&1 &
        sleep 10
        su - $APM_USER -c "cd
$APM_HOME/smm64/CAWilySiteMinderManager/SiteMinderManagerAgent;$APM_HOME/smm64/CAWilySiteMinderManager/SiteMinderManagerAgent/StartAgent.sh start" >/dev/null 2>&1 &
        sleep 10
        su - $APM_USER -c "$EM_HOME/Introscope_WebView" >/dev/null 2>&1 &
        sleep 5
        PID1=$(ps -ef | grep WatchDog.jar | grep -v grep | awk '{print $2}')
        PID2=$(ps -ef | grep Introscope_Enterprise_Manager.lax | grep -v grep | awk '{print $2}')
        PID3=$(ps -ef | grep IntroscopeNativeDataReporter.exe | grep -v grep | awk '{print $2}')
        PID4=$(ps -ef | grep Introscope_WebView.lax | grep -v grep | awk '{print $2}')
        echo "APM WD Started PID: $PID1"
        echo "APM EM Started PID: $PID2"
        echo "Wily SM Agent Started PID: $PID3"
        echo "WebView Console Started PID: $PID4"
    fi
}
```

```
# Collect status
status(){
    echo "APM WD Running PID: $PID1"
    echo "APM EM Running PID: $PID2"
    echo "Wily SM Agent Running PID: $PID3"
    echo "WebView Console Running PID: $PID4"
    echo "---"
}
# Stop the CA APM / Wily Services
stop(){
    kill -9 `ps -ef | grep Introscope_WebView | grep -v grep | awk '{print $2}'` >/dev/null 2>&1
    kill -9 `ps -ef | grep IntroscopeNativeDataReporter.exe | grep -v grep | awk '{print $2}'` >/dev/null 2>&1
    kill -9 `ps -ef | grep Introscope_Enterprise_Manager.lax | grep -v grep | awk '{print $2}'` >/dev/null 2>&1
    kill `ps -ef | grep WatchDog.jar | grep -v grep | awk '{print $2}'` >/dev/null 2>&1
    echo
    echo "CA APM / Wily Stopping."
    echo
    echo "-Please wait 1 minute before re-starting to allow vmstat processes to finish closing"
    echo "-Execute ps -ef | grep apm to view running processes."
    echo "-Only postgres sql process should be active under the apm userid"
    echo
    ps -ef | grep apm | grep -v grep
    echo
}
### function main ###
case "$1" in
start)
    start
    ;;
stop)
    stop
    ;;
status)
    status Introscope_WebView
    ;;
restart|reload|coldrestart)
    stop
    start
    ;;
*)
    echo $"Usage: $0 {start|stop|restart|reload|status}"
    exit 1
esac
exit 0
```

# 32 bit list of IntroscopeNativeReporter

- `smpls01:/opt/CA/apm/smm32/CAWilySiteMinderManager/SiteMinderManagerAgent root# ./IntroscopeNativeDataReporter.sh -list`
- Shared File: `/opt/CA/apm/smm32/CAWilySiteMinderManager/SiteMinderManagerAgent/data/IntroscopeAPI.shm`
- Metric Counters:
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Caching|PolicyStore:Misses Per Interval`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|Request Queue:Current Length`
  - Type: `AverageCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|LDAPDatabase|smpls_userstore|Operations|UserStore:Average Response Time (ms)`
  - Type: `AverageCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Operations|IsProtected:Average Response Time (ms)`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|Sockets:Currently In Use`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|Request Queue:Max Length`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Operations|Authorize:Responses Per Interval`
  - Type: `AverageCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Operations|Authorize:Average Response Time (ms)`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Operations|IsProtected:Responses Per Interval`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|Worker Threads:Currently in Use`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Operations|Login:Responses Per Interval`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Database|Operations|PolicyStore:Responses Per Interval`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|Worker Threads:Max Count`
  - Type: `AverageCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Operations|Login:Average Response Time (ms)`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Database|Operations|PolicyStore:Errors Per Interval`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|High Priority Request Queue:Current Length`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Caching|Authorization:Hits Per Interval`
  - Type: `AverageCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Database|Operations|PolicyStore:Average Response Time (ms)`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|Sockets:Max Count`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|LDAPDatabase|smpls_userstore|Operations|UserStore:Responses Per Interval`
  - Type: `FlucluatingCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Health|High Priority Request Queue:Max Length`
  - Type: `PerIntervalCounter` Name: `SiteMinder|Policy Server|smpls01.im.dom|Caching|PolicyStore:Hits Per Interval`
- Traces:
- Trace Threshold: -1
- Connections: 1

# 64 bit list of IntroscopeNativeReporter

- smps01:/opt/CA/apm/smm32/CAWilySiteMinderManager/SiteMinderManagerAgent root# /opt/CA/apm/smm64/CAWilySiteMinderManager/SiteMinderManagerAgent/IntroscopeNativeDataReporter.sh -list
- Shared File: /opt/CA/apm/smm64/CAWilySiteMinderManager/SiteMinderManagerAgent/data/IntroscopeAPI.shm

- Metric Counters:

- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Validation:Failures Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Login:Errors Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Login:Responses Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|URLs:Cross Site Script Hits Per Interval
- Type: AverageCounter Name: SiteMinder|Web Agents|smmps01.im.dom:Average Response Time (ms)
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|Resource:Hits Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Authorize:Responses Per Interval
- Type: AverageCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|IsProtected:Average Response Time (ms)
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|User Session:Hits Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Validation:Errors Per Interval
- Type: AverageCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Login:Average Response Time (ms)
- Type: AverageCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Authorize:Average Response Time (ms)
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Cookies:Expired Cookie Hits Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|IsProtected:Errors Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|URLs:Bad URL Chars Hits Per Interval
- Type: AverageCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|Resource:Average Cache Size
- Type: FlucuatingCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|Resource:Max Cache Size
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Login:Failures Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|Resource:Misses Per Interval
- Type: FlucuatingCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|User Session:Max Cache Size
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|User Session:Misses Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Authorize:Failures Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Cookies:Bad Cookie Hits Per Interval
- Type: AverageCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Caching|User Session:Average Cache Size
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom:Responses Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Validation:Responses Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|Authorize:Errors Per Interval
- Type: PerIntervalCounter Name: SiteMinder|Web Agents|smmps01.im.dom|Operations|IsProtected:Responses Per Interval

- Traces:

- Trace Threshold: -1

# SM Console – Top – Web Agents

APM WebView - Mozilla Firefox

File Edit View History Bookmarks Tools Help

ca APM WebView x https://smpls01.im....m/smps/index.html x +

smpls01.im.dom:28080/#console;db=SiteMinder+Manager++Overview;mm=SiteMinder+Manager;tr=0

Most Visited LAB URL CA URLs CA Bookshelf vSphere Web Client CPU-Z Validator 4.0 Untrusted Connection SM LAB

Share Browser WebEx

ca APM WebView technologies

Time Window: Live Change Start Time: << < > >>






(3) admin (Logout) Help



Home Console Investigator Tools Management

Dashboard: SiteMinder Manager - Overview (SiteMinder Manager in \*SuperDomain\*)

## SiteMinder Overview

Status

-  [Web Agents Status](#)
-  [Web Agents Response Time](#)
-  [Web Agents Errors](#)
-  [Web Agents Load](#)
-  [Web Agents Failures](#)

- [SiteMinder Overview](#)
-  [OS Performance Information \(Windows\) >](#)
  - [Top 5 >](#)
  - [Bottom 5 >](#)
-  [OS Performance Information \(UNIX/Linux\) >](#)
  - [Top 5 >](#)
  - [Bottom 5 >](#)
- [Web Agents Response Time >](#)
  - [Top and Bottom 5 >](#)
- [Web Agents Load >](#)
  - [Top and Bottom 5 >](#)
- [Web Agents Errors >](#)
  - [Top and Bottom 5 >](#)

Dec 22, 2013 01:47:16 AM GMT-06:00

# SM Console – Bottom – SMPS

APM WebView - Mozilla Firefox

File Edit View History Bookmarks Tools Help

CA APM WebView x https://smpls01.im....m/smps/index.html x

smpls01.im.dom:28080/#console;db=SiteMinder+Manager+++Overview;mm=SiteMinder+Manager;tr=0

Most Visited LAB URL CA URLs CA Bookshelf vSphere Web Client CPU-Z Validator 4.0 Untrusted Connection SM LAB

Share Browser WebEx

CA APM WebView technologies

Time Window: Live Change Start Time: << < > >> >>>






(3) admin (Logout) Help



Home Console Investigator Tools Management

Dashboard: SiteMinder Manager - Overview (SiteMinder Manager in \*SuperDomain\*)

## SiteMinder Overview

**Status**

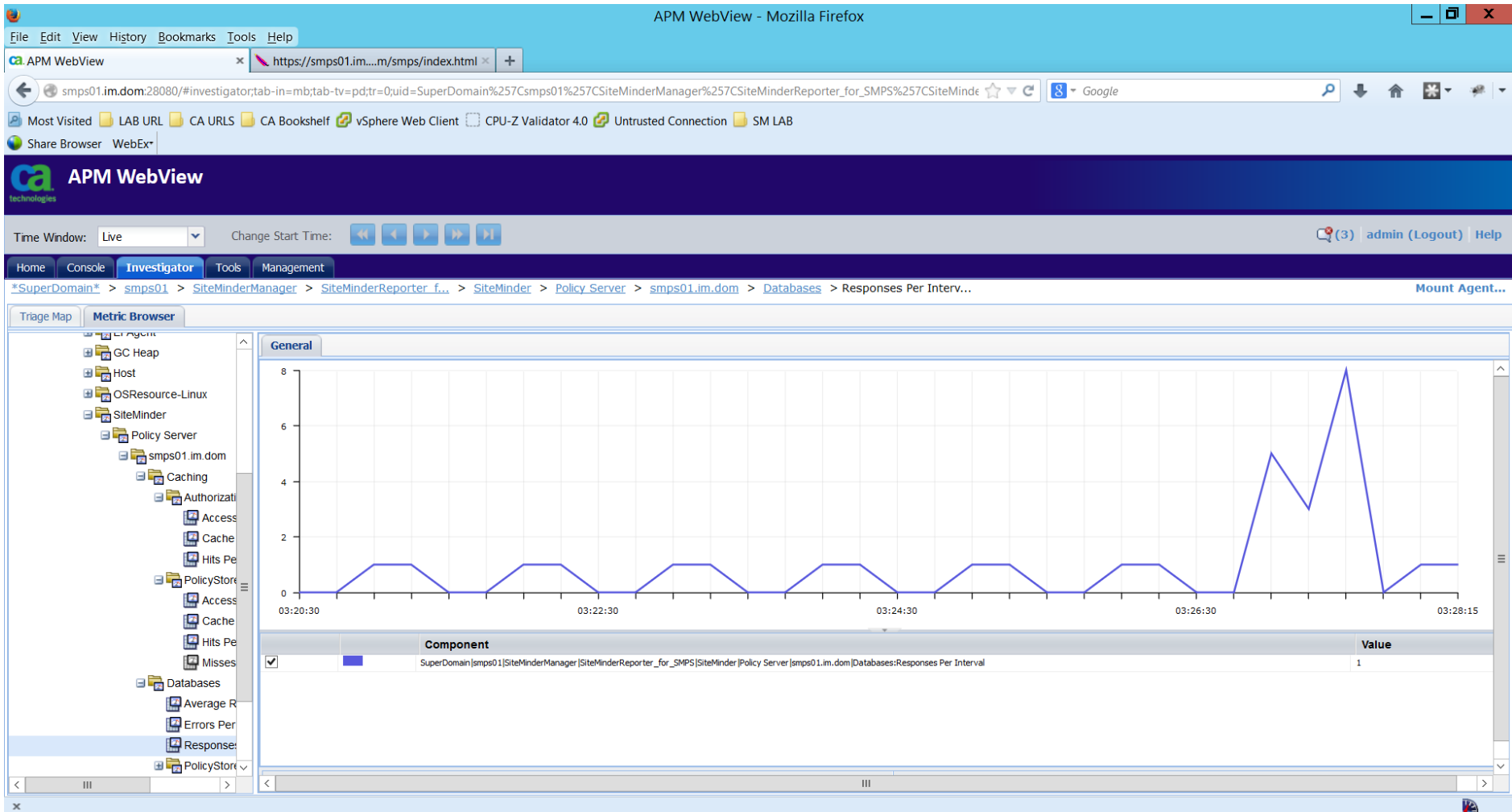
-  [Web Agents Status](#)
-  [Web Agents Response Time](#)
-  [Web Agents Errors](#)
-  [Web Agents Load](#)
-  [Web Agents Failures](#)

- [SiteMinder Overview](#)
-  [OS Performance Information \(Windows\) >](#)
  - [Top 5 >](#)
  - [Bottom 5 >](#)
-  [OS Performance Information \(UNIX/Linux\) >](#)
  - [Top 5 >](#)
  - [Bottom 5 >](#)
- [Web Agents Response Time >](#)
  - [Top and Bottom 5 >](#)
- [Web Agents Load >](#)
  - [Top and Bottom 5 >](#)
- [Web Agents Errors >](#)
  - [Top and Bottom 5 >](#)

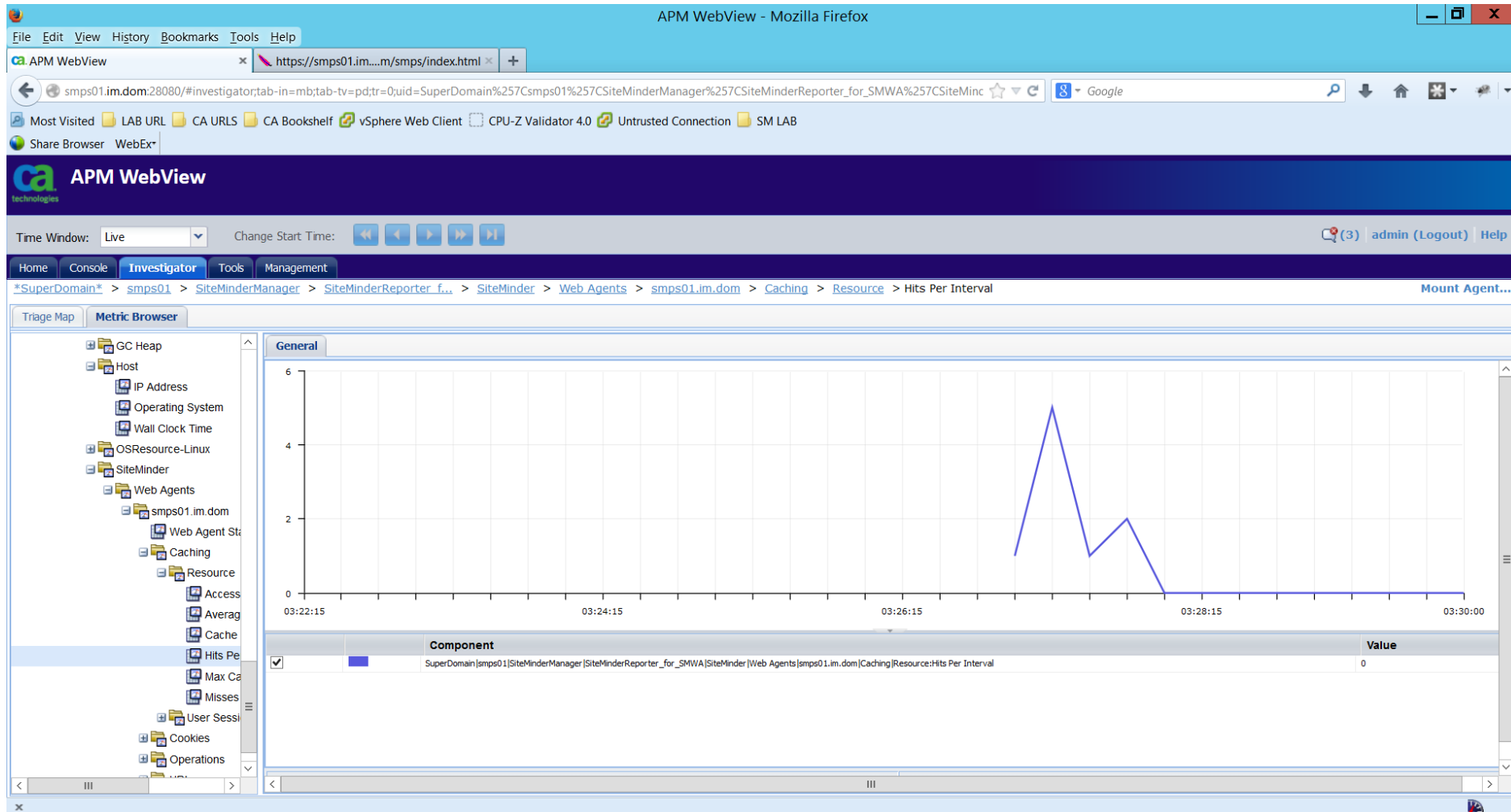
Dec 22, 2013 01:47:16 AM GMT-06:00



# SM PS Metrics



# SM WA Metrics



# SM WA Metrics

APM WebView - Mozilla Firefox

File Edit View History Bookmarks Tools Help

CA APM WebView x https://smpls01.im...m/smps/index.html

smpls01.im.dom:28080/#investigator;tab-in=mb;tab-tv=pd;tr=0;uid=SuperDomain%257Csmps01%257CSiteMinderManager%257CSiteMinderReporter%257CSiteMinder%257CWeb Agents%257Csmpls01.im.dom:Web Agent Status

Most Visited LAB URL CA URLs CA Bookshelf vSphere Web Client CPU-Z Validator 4.0 Untrusted Connection SM LAB

Share Browser WebEx

APM WebView

Time Window: Live Change Start Time: << < > >>

Home Console Investigator Tools Management

\*SuperDomain\* > smpls01 > SiteMinderManager > SiteMinderReporter (...) > SiteMinder > Web Agents > smpls01.im.dom > Web Agent Status

Triage Map Metric Browser

- Custom Metric Host (Virtual)
- smpls01
  - SiteMinderManager
    - SiteMinderReporter ("SuperDomain")
      - EM Host
      - EM Port
      - Java Version
      - Launch Time
      - Virtual Machine
    - EPAgent
    - GC Heap
    - Host
    - OSResource-Linux
    - SiteMinder
      - Web Agents
        - smpls01.im.dom
          - Web Agent Status
          - Caching
          - Resource
          - User Session
          - Cookies
          - Bad Cookie Hits Per Inter

General Traces Errors Search Metric Count

\*SuperDomain\*[smpls01]SiteMinderManager[SiteMinderReporter[SiteMinder]Web Agents]smpls01.im.dom:Web Agent Status

smpls01

APM WebView - Mozilla Firefox

File Edit View History Bookmarks Tools Help

CA APM WebView x https://smpls01.im...m/smps/index.html

smpls01.im.dom:28080/#investigator;tab-in=mb;tab-tv=pd;tr=0;uid=SuperDomain%257Csmps01%257CSiteMinderManager%257CSiteMinderReporter%257CSiteMinder%257CWeb Agents%257Csmpls01.im.dom:Web Agent Status

Most Visited LAB URL CA URLs CA Bookshelf vSphere Web Client CPU-Z Validator 4.0 Untrusted Connection SM LAB

Share Browser WebEx

APM WebView

Time Window: Live Change Start Time: << < > >>

Home Console Investigator Tools Management

\*SuperDomain\* > smpls01 > SiteMinderManager > SiteMinderReporter (...) > SiteMinder > Web Agents > smpls01.im.dom > Web Agent Status

Triage Map Metric Browser

- Custom Metric Host (Virtual)
- smpls01
  - SiteMinderManager
    - SiteMinderReporter ("SuperDomain")
      - EM Host
      - EM Port
      - Java Version
      - Launch Time
      - Virtual Machine
    - EPAgent
    - GC Heap
    - Host
    - OSResource-Linux
    - SiteMinder
      - Web Agents
        - smpls01.im.dom
          - Web Agent Status
          - Caching
          - Resource
          - User Session
          - Cookies
          - Bad Cookie Hits Per Inter

General Traces Errors Search Metric Count

\*SuperDomain\*[smpls01]SiteMinderManager[SiteMinderReporter[SiteMinder]Web Agents]smpls01.im.dom:Web Agent Status

smpls01

# SM PS View of Metrics

The screenshot displays the APM WebView interface. At the top, the browser address bar shows the URL: `smps01.im.dom:28080/#investigator;tab-in=mb;tab-tv=pd;tr=0;uid=SuperDomain%257Csmps01%257CSiteMinderManager%257CSiteMinderReporter%257CSiteMinder%257CPc`. Below the address bar, there are several tabs: "Most Visited", "LAB URL", "CA URLs", "CA Bookshelf", "vSphere Web Client", "CPU-Z Validator 4.0", "Untrusted Connection", and "SM LAB". The main header of the application is dark blue with the "ca technologies" logo and the text "APM WebView". Below the header, there is a "Time Window" dropdown set to "Live" and a "Change Start Time" section with navigation buttons. A navigation bar contains tabs for "Home", "Console", "Investigator" (which is active), "Tools", and "Management". Below the navigation bar, a breadcrumb trail shows the path: `*SuperDomain* > smps01 > SiteMinderManager > SiteMinderReporter (... > SiteMinder > Policy Server`. The main content area is divided into two sections. On the left is the "Triage Map" with a "Metric Browser" tab. It shows a hierarchical tree of metrics, including "Virtual Machine", "EPAgent", "GC Heap", "Bytes In Use", "Bytes Total", "Host", "OSResource-Linux", "SiteMinder", "Policy Server", "smps01.im.dom", "Caching", "Databases", "Average Respons", "Errors Per Interva", "Responses Per In", "PolicyStore", "Average Resp", "Errors Per Inte", "Responses Pe", "UserStore", and "Health". On the right is a panel with tabs for "General", "Traces", "Errors", "Search", and "Metric Count". The "General" tab is active, displaying the path: `*SuperDomain*|smps01|SiteMinderManager|SiteMinderReporter|SiteMinder|Policy Server`. The bottom of the interface has a status bar with navigation arrows and a close button.

# 32 bit library files for SMPS lib folder

- `smpls01:/opt/CA/siteminder/lib root# ls -lart *scope*`
- `-rwxrwxr-x 1 smuser smuser 184344 Jul 29 2010 libIntroScopeNativeDataAPI.so.12-0-1-4.x86`
- `-rwxrwxr-x 1 smuser smuser 20631 Apr 16 2013 libEventIntroScopeprovider.so`
- `-rwxrwxr-x 1 smuser smuser 130304 Apr 16 2013 libIntroScopeNativeDataAPI.so.SMr1251.org`
- `-rwxrwxr-x 1 smuser smuser 184952 May 17 2013 libIntroScopeNativeDataAPI.so.12-0-4.x86`
- `-rwxrwxr-x 1 smuser smuser 167104 May 17 2013 libIntroScopeNativeDataAPI.so.12-0-4.x64`
- `lrwxrwxrwx 1 root root 40 Dec 21 01:57 libIntroScopeNativeDataAPI.so -> libIntroScopeNativeDataAPI.so.12-0-4.x86`

Note: No errors from XPSConfig

```
smpls01:/opt/CA/siteminder smuser$ XPSConfig
[XPSConfig - XPS Version 12.51.0000.905]
Log output: XPSConfig.2013-12-21_020629.log
(WARN) : [sm-xpsxps-03500] CA.SPS: No product library.
```

## PARAMETER MENU\*\*\*\*\*CA.XPS::\$AuditSMHandlers

```
Name:      AuditSMHandlers [CA.XPS::$AuditSMHandlers]
Type:      String
Scope:     Local
Export?    no
Report?    no
Remote Access:  None
Description:  Comma-separated list of legacy SiteMinder Custom Event
              Handler libraries.
License Type:  None
Default Value: (not set)

Current Value:  "/opt/CA/siteminder/lib/libEventIntroScopeprovider.so"
```

# /apps/apm/database/data/pg\_hba.conf

```
# TYPE DATABASE USER CIDR-ADDRESS METHOD
```

```
# IPv4 local connections:
```

```
#host all all 127.0.0.1/32 md5
```

```
# IPv6 local connections:
```

```
#host all all ::1/128 md5
```

```
# "local" is for Unix domain socket connections only
```

```
local all all password
```

```
#local all postgres ident sameuser
```

```
# 2013-12-20 - AB - Changed from password to trust
```

```
# IPv4 local connections
```

```
host all all 127.0.0.1/32 trust
```

```
host all all 0.0.0.0/0 trust
```

```
# IPv6 all connections:
```

```
host all all ::/0 trust
```

```
host all all ::1/128 trust
```

<http://www.postgresql.org/docs/9.1/static/auth-pg-hba-conf.html>

# APM Media Install Folder (/media/apm)

```
smmps01:/media/apm root# ls -al *
```

```
-rwxr-xr-x 1 postgres postgres 3550 Dec 22 00:00 postgresql_db_config.pg_hba.conf  
-rw-r--r-- 1 apm apm 379 Dec 15 19:52 WilyIntroscopeEval.2014.Aug.20.em.lic
```

```
step01_base_em:
```

```
-rw-rw-rw- 1 apm apm 22159 Dec 20 17:17 01_silent_DB_only.properties  
-rw-r----- 1 apm apm 22257 Dec 21 03:36 02_silent_SM_Small.properties  
-r--r--r-- 1 apm apm 321150 Dec 14 23:37 ca-eula.txt  
-r--r--r-- 1 apm apm 2386 Dec 14 23:41 eula.txt  
-r-xr-xr-x 1 apm apm 658506882 Oct 9 15:24 introscope9.5.1.0linuxAMD64.bin  
-rw-r--r-- 1 apm apm 37406720 Dec 14 20:36 osgiPackages.v9.5.1.0.unix.tar
```

```
step02_wily_for_sm:
```

```
-rwxr-xr-x 1 apm apm 63189421 May 17 2013 install.bin.x64  
-rwxr-xr-x 1 apm apm 68775150 May 17 2013 install.bin.x86  
-rwxrwxr-x 1 root root 7108 Dec 22 01:26 IntroscopeEPAgent.properties.32ver  
-rwxrwxr-x 1 root root 7108 Dec 22 01:27 IntroscopeEPAgent.properties.64ver  
-rw-r--r-- 1 apm apm 711 Dec 21 22:20 silent_install_smwa_os.properties.x64  
-rw-r--r-- 1 apm apm 805 Dec 21 22:22 silent_install_smpps_os.properties.x86  
-rwxrwxr-x 1 root root 13610 Dec 21 22:27 StartAgent.sh.32ver  
-rwxrwxr-x 1 root root 13610 Dec 21 22:32 StartAgent.sh.64ver
```

## Install As Root User

```
./introscope9.5.1.0linuxAMD64.bin -f 01_silent_DB_only.properties  
./introscope9.5.1.0linuxAMD64.bin -f 02_silent_SM_Small.properties
```

## Install As Root User

```
./install.bin.x64 -I silent -f silent_install_smwa_os.properties.x64  
./install.bin.x86 -I silent -f silent_install_smpps_os.properties.x32
```

# Running APM PROCESSES

`ps -ef | grep apm | grep -v grep`

**DATABASE USED BY CA APM** (embedded postgresql DB – 200-300 MB)

```
postgres 2411 1 0 21:33 ? 00:00:00 /apps/apm/database/bin/postgres -D /opt/CA/apm/database/data
```

**CA APM WEB CONSOLE** (Started by init.d script to execute under correct userID=apm; executed with TCP port 28080)

```
root 2600 1 0 21:33 ? 00:00:00 su - apm -c /opt/CA/apm/introscope/Introscope_WebView
apm 2606 2600 12 21:33 ? 00:00:34 /opt/java64/jre/bin/java -Xms128m -Xmx512m -Djava.awt.headless=true -
Dorg.owasp.esapi.resources=./config/esapi -Dsun.java2d.noddraw=true -XX:PermSize=128m -XX:MaxPermSize=256m
com.zerog.lax.LAX /opt/CA/apm/introscope/Introscope_WebView.lax /tmp/env.properties.2606
```

**CA Wily for Siteminder Manager (32 bit)** (Add on package for SMPS monitoring)

```
apm 2775 1 0 21:33 ? 00:00:02
/opt/CA/apm/smm32/CAWilySiteMinderManager/SiteMinderManagerAgent/IntroscopeNativeDataReporter.exe
apm 2860 2775 0 21:33 ? 00:00:00 /usr/bin/perl epaplugins//linux//vmstat.pl
apm 2866 2861 0 21:33 ? 00:00:00 vmstat 7
```

**CA Wily for Siteminder Manager (64 bit)** (Add on package for SMWA monitoring)

```
apm 2774 1 0 21:33 ? 00:00:02
/opt/CA/apm/smm64/CAWilySiteMinderManager/SiteMinderManagerAgent/IntroscopeNativeDataReporter.exe
apm 2860 2774 0 21:33 ? 00:00:00 /usr/bin/perl epaplugins//linux//vmstat.pl
apm 2865 2860 0 21:33 ? 00:00:00 vmstat 7
```

**CA APM Enterprise Manager** (primary service) + WatchDog (restarts EM if needed) (Provide J2EE – aka SM WAS monitoring)

```
apm 2797 1 0 21:33 ? 00:00:00 ../jre/bin/java -jar WatchDog.jar _runwatchdog -watch -port 4321 -startcmd
/opt/CA/apm/introscope/bin/../Introscope_Enterprise_Manager -interval 10
apm 2916 2797 55 21:33 ? 00:02:33 /opt/java64/jre/bin/java -Xms512m -Xmx1024m -XX:MaxPermSize=256m -
Dorg.owasp.esapi.resources=./config/esapi -Djava.awt.headless=true com.zerog.lax.LAX
/opt/CA/apm/introscope/bin/../Introscope_Enterprise_Manager.lax /tmp/env.properties.2916
```



# Silent Install for CA APM EM -01

01\_silent\_DB\_only.properties | grep -v "#"

{show file without comment markers}

```
ca-eulaFile=/media/apm/step01_base_em/ca-eula.txt
USER_INSTALL_DIR=/opt/CA/apm/introscope
silentInstallChosenFeatures=Database
externalComponentPackage=/media/apm/osgiPackages.v9.5.1.0.unix.tar
eulaFile=/media/apm/eula.txt
shouldUpgrade=false
emPort=5001
emWebPort=28081
emAdminPassword=Password01
emGuestPassword=Password01
shouldClusterEm=false
emTxTraceDataShelfLife=14
emTxTraceDir=traces
emTxTraceDiskSpaceCap=
emDataStoreDir=data
emThreadDumpDir=threaddumps
emLaxNICurrentVm=/opt/java64/jre/bin/java
emLaxNIJavaOptionAdditional=-Xms512m -Xmx1024m -XX:MaxPermSize=256m -
Dorg.owasp.esapi.resources=./config/esapi -Djava.awt.headless=true
chosenDatabaseIsPostgres=true
chosenDatabaseIsOracle=false
dbHost=smps01.im.dom
dbPort=5432
dbName=cemdb
dbUser=admin
dbPassword=Password01
databaseDir=/opt/CA/apm/database
dbAdminUser=postgres
dbAdminPassword=Password01
dbInstallScriptTimeoutInMillis=240000
useExistingSchemaForOracle=false
shouldConfigWvAsService=false
INSTALLER_UI=silent
```

# Silent Install for CA APM EM -02

02\_silent\_SM\_Small.properties | grep -v "#"

{show file without comment markers}

```
ca-eulaFile=/media/apm/step01_base_em/ca-eula.txt
USER_INSTALL_DIR=/opt/CA/apm/introscope
silentInstallChosenFeatures=Enterprise Manager,WebView,ProbeBuilder,Database
externalComponentPackage=/media/apm/step01_base_em/osgiPackages.v9.5.1.0.unix.tar
eulaFile=/media/apm/step01_base_em/eula.txt
shouldUpgrade=false
wilyLicenseFile=/media/apm/WilyIntroscopeEval.2014.Aug.20.em.lic
emPort=5001
emWebPort=28081
emAdminPassword=Password01
emGuestPassword=Password01
shouldClusterEm=false
emTxTraceDataShelfLife=14
emTxTraceDir=traces
emTxTraceDiskSpaceCap=
emDataStoreDir=data
emThreadDumpDir=threaddumps
shouldEnableAPMIntegrationPackForADA=false
shouldEnableCAAPMForOracleDB=false
shouldEnableCAAPMForSharePointPortal=false
shouldEnableCAAPMForWebServers=true
shouldEnableCAAPMForWebLogic=false
shouldEnableCAAPMForWebLogicPortal=false
shouldEnableCAAPMForWebSphere=false
shouldEnableCAAPMForWebSpherePortal=false
shouldEnableCAAPMForWebSphereMQandMB=false
shouldEnableCAAPMForWebSphereZOS=false
shouldEnableCAAPMForIBMCTG=false
shouldEnableCAAPMForIBMzOSExtension=false
shouldEnableSysview=false
shouldEnableCAAPMForSiteMinder=true
shouldEnableCAAPMForSiteMinderSNMP=true
shouldEnableCAAPMForSOA=true
shouldEnableCAAPMForOSB=false
shouldEnableCAAPMForTibcoBW=false
shouldEnableCAAPMForTibcoEMS=false
shouldEnableCAAPMForWPSandWESB=false
shouldEnableCAAPMForWMBroker=false
shouldEnableCAAPMForWebMethodsIS=false
shouldEnableAPMIntegrationPackForCM=false
shouldEnableCAAPMIntegrationForCALISA=true
```

```
shouldConfigEmAsService=false
emAsServiceName=IScopeEM
emAsServiceDisplayName=Introscope Enterprise Manager
emLaxNICurrentVm=/opt/java64/jre/bin/java
emLaxNIJavaOptionAdditional=-Xms512m -Xmx1024m -XX:MaxPermSize=256m -
Dorg.owasp.esapi.resources=/config/esapi -Djava.awt.headless=true
chosenDatabaseIsPostgres=true
chosenDatabaseIsOracle=false
dbHost=smps01.im.dom
dbPort=5432
dbName=cemdb
dbUser=admin
dbPassword=Password01
databaseDir=/opt/CA/apm/database
dbAdminUser=postgres
dbAdminPassword=Password01
dbInstallScriptTimeoutInMillis=240000
validateDatabase=true
useExistingSchemaForOracle=false
wvPort=28080
wvEmHost=smps01.im.dom
wvEmPort=5001
shouldConfigWvAsService=false
wvAsServiceName=IScopeWV
wvAsServiceDisplayName=Introscope WebView
wvLaxNICurrentVm=/opt/java64/jre/bin/java
wvLaxNIJavaOptionAdditional=-Xms128m -Xmx512m -Djava.awt.headless=true -
Dorg.owasp.esapi.resources=/config/esapi -Dsun.java2d.nodraw=true -
XX:PermSize=128m -XX:MaxPermSize=256m
pbLaxNICurrentVm=/opt/java64/jre/bin/java
pbLaxNIJavaOptionAdditional=-Xms32m -Xmx64m -Djava.awt.headless=true
INSTALLER_UI=silent
```

# Silent Install for Wily Siteminder Manager Component – 32 bit for SMPS

`silent_install_smeps_os.properties.x86`

```
# SMM 32 bit Silent Install Script
# Use for SM PS
USER_INSTALL_DIR=/opt/CA/apm/smm32
CHOSEN_INSTALL_FEATURE_LIST=PolMon,ManMod,OSMon
# CA Siteminder PS Settings (Not in sample)
CA_PS_PATH=/opt/CA/siteminder
POLICY_SERVER_EXISTS=1
SMM_NETE_PS_ROOT=/opt/CA/siteminder
counterApacheWebServer=0
counterSunOneWebServer=0
counterIISWebServer=0
apacheWSCBox1=Selected
apacheInstalledPath1=
apacheConfPath1=
apacheWSCBox2=
apacheInstalledPath2=
apacheConfPath2=
sunOneWSCBox1=
sunOneInstallPath1=
sunOneInstanceName1=
sunOneWSCBox2=
sunOneInstallPath2=
sunOneInstanceName2=
IIS_WEB_AGENT_CONFIG_EXISTS=
IIS_WEB_AGENT_CONFIG=
iisWSCBox1=
iisInstallPath1=
EM_INSTALL_DIR=/opt/CA/apm/introscope
EM_VERSION_8=1
EM_VERSION_7.2.2=0
emName=localhost
emPort=5001
```

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# Silent Install for Wily Siteminder Manager Component – 64 bit for SMWA

silent\_install\_smwa\_os.properties.x64

```
# SMM 64 bit Silent Install Script
# Do not use for SM PS
USER_INSTALL_DIR=/opt/CA/apm/smm64
CHOSEN_INSTALL_FEATURE_LIST=WSAgent,ManMod,OSMon
counterApacheWebServer=1
counterSunOneWebServer=0
counterIISWebServer=0
apacheWSCBox1=Selected
apacheInstalledPath1=/usr/sbin/httpd
apacheConfPath1=/etc/httpd/conf/httpd.conf
apacheWSCBox2=
apacheInstalledPath2=
apacheConfPath2=
sunOneWSCBox1=
sunOneInstallPath1=
sunOneInstanceName1=
sunOneWSCBox2=
sunOneInstallPath2=
sunOneInstanceName2=
IIS_WEB_AGENT_CONFIG_EXISTS=
IIS_WEB_AGENT_CONFIG=
iisWSCBox1=
iisInstallPath1=
EM_INSTALL_DIR=/opt/CA/apm/introscope
EM_VERSION_8=1
EM_VERSION_7.2.2=0
emName=localhost
emPort=5001
```

# Background Notes for LAB



Alan Baugher

Dec 2013

# XPSConfig

## Correct library added to XPSConfig

```
▪ smps01:/opt/CA/siteminder smuser$ XPSConfig
▪ [XPSConfig - XPS Version 12.51.0000.905]
▪ Log output: XPSConfig.2013-12-16_163815.log
▪ (WARN) : [sm-xpsxps-03500] CA.SPS: No product library.

▪ PRODUCTS MENU*****CA

▪ CDS - CertificateDataStore          12 Parameters
▪ EPM - Enterprise Policy Management   3 Parameters
▪ FED - Federation                    3 Parameters
▪ SM - SiteMinder                     160 Parameters
▪ XPS - Extensible Policy Store        25 Parameters

▪ -----
▪ X - xTrace
▪ -----
▪ Q - Quit
▪ -----
▪ Enter Option (id or X or Q):

▪ PARAMETER MENU*****CA.XPS::$AuditSMHandlers

▪ Name:      AuditSMHandlers [CA.XPS::$AuditSMHandlers]
▪ Type:      String
▪ Scope:     Local
▪ Export?    no
▪ Report?    no
▪ Remote Access:  None
▪ Description:  Comma-separated list of legacy SiteMinder Custom Event
▪              Handler libraries.
▪ License Type:  None
▪ Default Value: (not set)

▪ Current Value:
▪ Pending Value:  "/opt/CA/siteminder/lib/libEventIntroscopeprovider.so"

▪ -----
```

## Incorrect library added to XPSConfig

```
▪ smps01:/opt/CA/siteminder smuser$ XPSConfig
▪ [XPSConfig - XPS Version 12.51.0000.905]
▪ Log output: XPSConfig.2013-12-17_131740.log
▪ (WARN) : [sm-xpsxps-03500] CA.SPS: No product library.
▪ (ERROR) : [sm-xpsxps-06790] Custom event handler library " /opt/CA/siteminder/lib/libIntroscopeNativeDataAPI.so" could not be loaded.

▪ PARAMETER MENU*****CA.XPS::$AuditSMHandlers

▪ Name:      AuditSMHandlers [CA.XPS::$AuditSMHandlers]
▪ Type:      String
▪ Scope:     Local
▪ Export?    no
▪ Report?    no
▪ Remote Access:  None
▪ Description:  Comma-separated list of legacy SiteMinder Custom Event
▪              Handler libraries.
▪ License Type:  None
▪ Default Value: (not set)

▪ Current Value:  "/opt/CA/siteminder/lib/libEventIntroscopeprovider.so"
▪ Pending Value:  "/opt/CA/siteminder/lib/libEventIntroscopeprovider.so, /opt/CA/siteminder/lib/libIntroscopeNativeDataAPI.so"

▪ -----
```

# View CA APM DB Tables

DbVisualizer Free 9.1.5 - CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL/cemdb/public/TABLE

File Edit View Database SQL Commander Tools Window Help

Databases Scripts Favorites

Connections

- CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL
  - cemdb (Default)
    - information\_schema
    - pg\_catalog
    - public
      - FOREIGN TABLE
      - INDEX
      - SEQUENCE
      - SYSTEM INDEX
      - SYSTEM TABLE
      - SYSTEM TOAST INDEX
      - SYSTEM TOAST TABLE
      - SYSTEM VIEW
      - TABLE
        - apm\_agent
        - apm\_edge
        - apm\_metric\_path
        - apm\_owner
        - apm\_vertex
        - apm\_vertex\_logical\_equivalence
        - apm\_vertex\_type
        - qrtz\_blob\_triggers
        - qrtz\_calendars
        - qrtz\_cron\_triggers
        - qrtz\_fired\_triggers
        - qrtz\_job\_details
        - qrtz\_job\_listeners
        - qrtz\_locks
        - qrtz\_paused\_trigger\_grps
        - qrtz\_scheduler\_state
        - qrtz\_simple\_triggers
        - qrtz\_trigger\_listeners
        - qrtz\_triggers
        - tang\_config
        - tang\_event\_types
        - tang\_events
        - ts\_app\_auth\_types

CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL TABLE x

Tables: TABLE Actions

CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL/cemdb/public/TABLE

Tables References

table_cat	table_schem	table_name	table_type	remarks
(null)	public	apm_agent	TABLE	(null)
(null)	public	apm_edge	TABLE	(null)
(null)	public	apm_metric_path	TABLE	(null)
(null)	public	apm_owner	TABLE	(null)
(null)	public	apm_vertex	TABLE	(null)
(null)	public	apm_vertex_logical_equivalence	TABLE	(null)
(null)	public	apm_vertex_type	TABLE	(null)
(null)	public	qrtz_blob_triggers	TABLE	(null)
(null)	public	qrtz_calendars	TABLE	(null)
(null)	public	qrtz_cron_triggers	TABLE	(null)
(null)	public	qrtz_fired_triggers	TABLE	(null)
(null)	public	qrtz_job_details	TABLE	(null)
(null)	public	qrtz_job_listeners	TABLE	(null)
(null)	public	qrtz_locks	TABLE	(null)
(null)	public	qrtz_paused_trigger_grps	TABLE	(null)
(null)	public	qrtz_scheduler_state	TABLE	(null)
(null)	public	qrtz_simple_triggers	TABLE	(null)
(null)	public	qrtz_trigger_listeners	TABLE	(null)
(null)	public	qrtz_triggers	TABLE	(null)
(null)	public	tang_config	TABLE	(null)
(null)	public	tang_event_types	TABLE	(null)
(null)	public	tang_events	TABLE	(null)
(null)	public	ts_app_auth_types	TABLE	(null)

- CA APM EM Database (PostgreSQL DB) view from workstation using free Dbvisualizer tool.
- <http://www.dbvis.com/download/>
- <http://www.dbvis.com/doc/postgresql-database-drivers/>

DbVisualizer Free 9.1.5 - CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL

File Edit View Database SQL Commander Tools Window Help

Databases Scripts Favorites

Database Connection: CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL Actions

Connection Properties Database Info Data Types

Settings Format: Server Info Database URL

Connection

Name: CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL

Database Type: PostgreSQL

Driver (ODBC): PostgreSQL

Database Server: smps01.in.dom

Database Port: 5432

Database: cemdb

Authentication

Database Userid: admin

Database Password: \*\*\*\*\*

Options

Auto Commit: ☒

Save Database Password: ☐ Save Between Sessions

Permission Mode: Development

Reconnect Disconnect Ping Server

Connection Message

PostgreSQL  
8.4.5  
PostgreSQL Native Driver  
PostgreSQL 9.2 JDBC4 (build 1002)

# CA APM may use SM authentication

DbVisualizer Free 9.1.5 - CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL/cemdb/public/TABLE/ts\_app\_auth\_types

File Edit View Database SQL Commander Tools Window Help

Databases Scripts Favorites

Table: ts\_app\_auth\_types

CA\_APM\_Wily\_EM\_Database\_on\_PostgreSQL/cemdb/public/TABLE/ts\_app\_auth\_types

Info Columns Data Row Count Primary Key Indexes Grants

	ts_id	version_info	ts_name	ts_soft_delete
1	1	1	Application Specific	false
2	2	1	CA SiteMinder	false
3	3	1	NTLM Authentication	false
4	4	1	Basic Authentication	false



```
/opt/CA/apm/database/uninstall-postgresql
```

# STOP ALL PROCESSES FIRST

Uninstallation Complete.

- 

# Ensure that `smm_env.sh`

- Is using 32 bit for SMPS for LD\_LIBRARY\_PATH
- And is using 64 bit for SMWA LD\_LIBRARY\_PATH

# Missing unlimited encryption JCE in x64 java

- Updated JCE to address error message;
- “unable to save database files due to missing certificates.”

# Check SM Audit Event Library

- smps01:/opt/CA/siteminder smuser\$ XPSConfig
  - [XPSConfig - XPS Version 12.51.0000.905]
  - Log output: XPSConfig.2013-12-20\_235545.log
  - (WARN) : [sm-xpsxps-03500] CA.SPS: No product library.
  - (ERROR) : [sm-xpsxps-06810] Failed to initialize event handler library "/opt/CA/siteminder/lib/libEventIntroscopeprovider.so"
- 
- Error occurs if following STEP 5; and copying a x64 bit library to siteminder policy server folder. Use x86 library for SMPS.
  - From the SiteMinderManagerAgent directory, copy the libIntroscopeNativeDataAPI.so to the policy server's lib directory.

# Create DB afterwards

- `/opt/CA/apm/introscope/install/database-scripts/unix/createdb-postgres.sh`
- `./createdb-postgres.sh smps01.im.dom /opt/CA/apm/database cemdb admin Password01 cemdb Password01 5432`
- Needs path to : `/apps/apm/introscope/database/bin/psql`
- Issue was due to adding/removing other postgresql versions on Centos.
  - `Yum install postgresql.x86_64`
  - `/usr/bin/psql`
  - `/apps/apm/introscope/database/bin/psql`
- `./introscope9.5.1.0linuxAMD64.bin -f silent_DB_only.txt`

# Update sudo list for apm/postgresql

- visudo (run as root)
  - ##### Added for SM use by smuser
  - User\_Alias SMUSER = smuser, camadmin, dsa, cabi, apm, postgres
  - Cmnd\_Alias TOOLS = /opt/CA/siteminder/bin/smconsole, /bin/su, /etc/init.d/httpd, /etc/init.d/httpd.fssui, /etc/init.d/dxserver, /bin/chown, /usr/bin/yum, /usr/bin/find
  - SMUSER ALL = NOPASSWD: TOOLS

# Ensure temp file is owned by apm

- `chown -R apm:apm /tmp/userCache.data`



# Semaphores Check

- Also, when nothing is running, can you check if you have any semaphore stuck around. I have seen that once you cannot properly start llawp process (as you are encountering now) you will end up with stuck semaphores and shared memory which will need to be removed.
- Below are the commands
- `ipcs -s` : list semaphores
- `ipcs -m` : list shared memory
- `ipcrm -s` : remove semaphores
- `ipcrm -m` : remove shared memory
- see:
- <https://support.ca.com/irj/portal/kbtech?docid=548482&searchID=TEC548482&fromKBResultsScreen=T>