Common Issues Seen by Support and Other Topics

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Agenda

- APM Technical Support overview

- Finding information <u>before</u> opening a case.

- Overall common themes of cases

- Top 3 APM Introscope support cases.

- Top 3 APM CE support cases

- Questions

- Thanks to Mary Clark (overall) Matt Muskaloon/Sergio Morales Correa (Content) & Vijay Shankar Venkatachalam (Content/Questions).

Support Overview

APM Technical Support Overview

- Follow-the-sun worldwide staff support for Production Down issues.

- Continuous improvement organization
  - Process
  - Product
  - People

- Learning organization

- Cases
  - Thinking beyond the case
  - Promoting best practices
  - Goal: A Stable/Scalable Environment!

Engaging with Technical Support

- When getting a new case, the Support Engineer wants to determine
  - If it is a new issue or a reoccurrence of an old issue. (When did it last work?)
  - If the problem is constant, frequent, or occasional.
  - If this a new or old environment.
  - If something happened before the issue (Such as a reboot, install, upgrade).
  - If the scope is limited or widespread.
    - Are one or more clusters/environments impacted?
    - Are only some agents/EMs/databases/TIMs etc. having the issue but others are not?
  - What are the specifics of the environment?
  - What are the key errors in the logs?
  - What are the performance characteristics (Memory, CPU, Connections) at the time?
  - Event Correlation (e.g. matching up screenshots with logs.)
- Helping the Engineer answer these questions will likely speed up resolution

Engaging with Technical Support - continued

- Factors that could delay case resolution:
  - Incomplete or incorrect information
  - Multiple issues or open-ended case
  - Not being able to determine answers to previous questions.
  - Delays in case updates or Webex scheduling.
  - Not showing up for a Webex session ☹
  - Logs and files from different time periods (before/after issue occurred).
  - Customer unable to reproduce issue.
  - Delays in implementing suggested changes.
  - Infrequent or complex cases (cluster-wide, multiple integrations).
  - Desired functionality is available only through an enhancement. (Ideation – Link)
  - When the issue is related to an extension or custom code/plugin needs to PS engagement

Finding Information Before Opening a Ticket

Best Practice Documents, Tuesday Tips, Top 20 Issues

- Before opening a case, there are a wealth of information resources:

- Document Library -- https://communities.ca.com/web/ca-wily-global-user-community/document-library

- Community Documents (34 Currently) https://communities.ca.com/web/ca-wily-global-user-community/document-library/-/document_library/view/18558982?&#p_20

- Tuesday Tips (46 Currently) https://communities.ca.com/web/ca-wily-global-user-community/message-board/-/message_boards?_19_mbCategoryId=16496410&#p_19

- APM Top Ten/Twenty accessed articles for previous month (23 Currently) -- https://communities.ca.com/web/ca-wily-global-user-community/message-board/-/message_boards?_19_topLink=my-posts&#p_19

What's On Support.CA.COM

- *Two Gems Under Product News:*

Product News

Date	Title
07/31/2013	Live - CA Application Performance Management Top Solutions for APM - Customer Experience Manager
07/31/2013	Live - CA Application Performance Management Top Solutions for APM - Enterprise Manager

CA Application Performance Management
Top Solution Documents - EM

CA Application Performance Management Top Solution Documents - CEM

Last Updated: July 27, 2013

Doc ID #:	Category:	Technical Support Document:	Last Modified:
TEC534291	Performance	Top 10 recommendations for Clustering Performance issues v8	11/07/12
TEC595953	Performance	Cluster running slow, poor response time, can't navigate, can't do a transaction trace, load balancing not working properly. Where should I look next?	07/23/13
TEC595877	Error	Agent metrics are not getting reported in the Investigator tree due to breaching the agent metric limit	07/22/13
TEC595381	Error	Workstation or Enterprise Manager OutOfMemory due to SOA Dependency Map keeps growing	07/19/13
TEC533725	Performance	Introscope EM - Resource recommendations	11/29/12
TEC533582	Error	Changing Agent Domain older agent data are lost in Investigator/dashboards	11/28/12
TEC533771	Error	Fixing Corrupt Transaction Trace Database	11/27/12
TEC533903	Performance	Troubleshooting Common EM Performance Problems	11/27/12
TEC595655	Performance	CA APM Workstation Logon very slow	07/18/13
TEC565842	Performance	OutOfMemoryException in MOM	03/10/12
TEC595024	Error	Not able to load Agent.dll - .NET Agent fails to monitor a .NET application	07/08/13
TEC595292	Error	.NET agent installation Microsoft Avicode profiler preventing instrumentation but perfmon metrics are reporting	07/12/13

What about Knowledgebase? (KBs)

- Not your grandparents' KB system.

- Major initiative to greatly increase KB content.
  - Each engineer is required to produce one high-quality KB article a week
  - Faster Turnaround (As quick as 24 hours from creation to publishing!)

- Please keep checking this space for updates:

  https://support.ca.com/irj/portal/prddtlshome?prdhmpgform=p&productID=5974#kbupdates

Latest Knowledge Base Updates

Date	Title
08/08/2013	How to purge or reduce size of APM database in Postgres?
08/08/2013	How to create the APM db in Oracle 11gR2
08/07/2013	CA Insight DPM Lite 1.5 (in APM 9.1) vs CA Insight DPM (standalone)
08/07/2013	How to install DPM 11.6 + Oracle DB 11gR2 32bit + APM 9.5 + Introscope Integration on Windows
08/05/2013	What does the following message mean? "Waited 120000 ms But did not receive the response for the message com.wily.isengard.messageprimitives.service.CompressedMessageServiceCallMessage"
→ View all	

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Recommended Reading/Product Status

- https://support.ca.com/irj/portal/prddtlshome?prdhmpgform=p&productID=5974#kbupdates

Recommended Reading

- Top 20 Knowledge Documents for CEM
- Top 20 Knowledge Documents for EM
- CA Application Performance Management Sizing Tools
- CA Application Performance Management: Enterprise Manager Performance Tips Interactive UI
- CA Application Performance Management: Enterprise Manager Performance Tips
- CA Application Performance Management ReadMe r9.1.0.2
- Update on APM r9.1.1 Customer Download from CA Support Online
- CA Application Performance Management/Catalyst Connectors Solutions & Patches
- CA Wily APM Solution Module Index
- Documentation/Manuals for CA Wily

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Product Status

- CA Application Performance Management Fix Strategy
- CA Executive Insight Solutions Roadmap
- Application Performance Management Cloud Monitor Product Roadmap
- Product Technical Advisories
- CA Application Performance Management Defect Resolution Policy
- Application Performance Management Compatibility Guides
- CA APM Product Release and Support Announcements
- CA APM Release and Support Lifecycle Dates
- CA Service Operations Management Product Roadmap
- Application Performance Management Roadmap

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Remote Engineer (Formerly CADCF)

- This tool is now available from the main "Open a case" page for easy accessibility.

- The CA Common Diagnostic facility (CACDF) is a tool provided by CA to automate the collection of problem solving diagnostic data for your installed CA software products. Each product that leverages CACDF requires a script.

- Saves time typing and gathering logs.

- Supports Various UNIX and Windows platforms for CA Solutions including APM.

Overall Common Themes of Cases

Overall Common Themes of Cases

- **Fast Growing Environments**

  - Architecture and Configuration settings not optimized. Servers added reactively.

  - Not cleaning up (too many metrics, transaction defects, dependency maps, etc.)

  - Not frequently reviewing logs to address new issues.

  - As your environment grows, proactive performance issues tuning is a must.

Overall Theme of Cases - continued

- **Suboptimal/Unsupported Environments**
  - Issues likely occur long before reported.
  - Running older releases where issues are not resolved.
  - Running versions of software that are incompatible with each other.
  - Running 32-bit OS/JRE when 64-bit is needed.
  - Sending dirty data or too much data to TIM or EM.
  - Attempting to run multiple EMs/Database/and other things on same server.
  - Environment not following Performance and Sizing Guidelines.
  - Not Looking at the Readme to learn about known issues.
- When Cheap Is Expensive

Top Three Introscope Issues

#1 Performance

- Issue: Environment is running too slow/Metrics are incomplete or show gaps
  - Note: Performance issues can mask conditions of clamping, cluster moving slowly, and other symptoms.

- What to Check:
  - Collector clock is too far skewed from MOM (or vice versa).
  - Outgoing message queue limit of <X> reached (unnecessary to go above 8000).
  - Enterprise Manager responding too slowly, disconnecting.
  - The Collector server1@5001 is responding slower than <X>ms and may be hung.
  - Check if using multiple Collectors on the same server.
  - Is clamping occurring?
  - Is this network-related?
  - Are MOM or Collectors overloaded?
  - How often are Agents disconnecting or reconnecting?
  - Check if using custom load balancing – Reason is that if load balancing is not properly configured, one collector could get hundreds of agents thus causing performance problem on it.
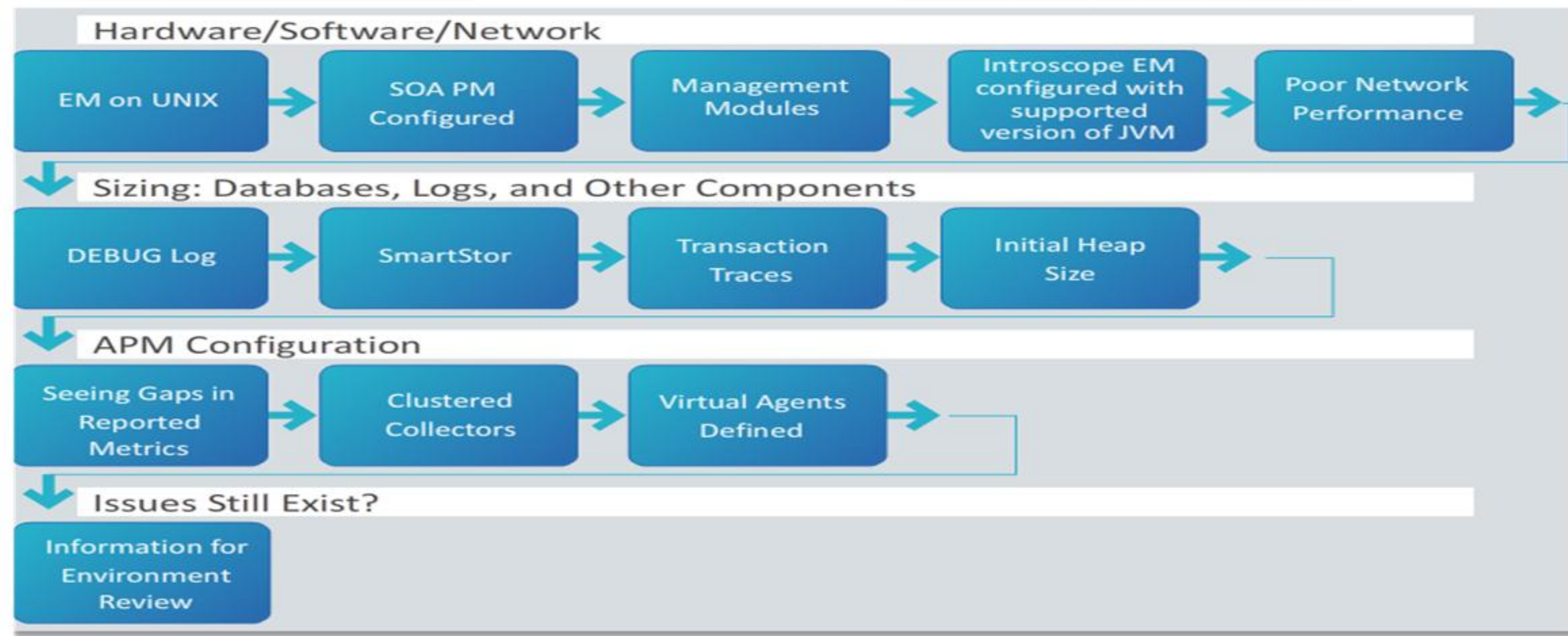
#1 Performance - continued

- Possible Quick Fix; Add the following settings on MOM and all Collectors. A restart of all EM's is required:
  - transport.outgoingMessageQueueSize=6000
  - transport.override.isengard.high.concurrency.pool.min.size=10
  - transport.override.isengard.high.concurrency.pool.max.size=10
  - Increase heap size. Make sure to set the initial heap size (-Xms) equal to the maximum heap size (-Xmx) in the Introscope Enterprise Manager.lax or EMService.conf. Note that this may/may not help
  - Increase clamps/ clean up metrics.
  - Improve network latency.
  - Review architecture to see if another server is needed.
  - Investigate why MOM and Collectors are overloaded.

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APM Performance Tips Website

- Review APM Performance Tips Website. -- https://content.plateau.com/nocache-content/ca/extended/product/apm/index.html.

Application Performance Management: Enterprise Manager Performance Tips

If you are experiencing missing data points in graphs or dashboards, agent /collectors disconnections, OutOfMemory messages or other like symptoms, click an item below and review the tips provided for possible solutions. Please try and resolve your issue using these tips before calling CA Technologies Support. All of these tips and more are available in the APM Sizing and Performance Guide. Access a complete list of all tips: Enterprise Manager Performance Tips

Hardware/Software/Network

EM on UNIX → SOA PM Configured → Management Modules → Introscope EM configured with supported version of JVM → Poor Network Performance

Sizing: Databases, Logs, and Other Components

DEBUG Log → SmartStor → Transaction Traces → Initial Heap Size

APM Configuration

Seeing Gaps in Reported Metrics → Clustered Collectors → Virtual Agents Defined

Issues Still Exist?

Information for Environment Review

#2 Agent Memory Leaks

- Issue: Agent memory footprint increases over time

- What to Check:
  - Using Full rather than Typical PBL.
  - If Introscope 8.2 and higher, is this setting enabled? **introscope.agent.reduceAgentMemoryOverhead=true**
  - Are custom pbds/ third-party software also involved?
  - Is this a known issue for a particular release?
  - If introscope.autoprobe.deepinheritance.enabled=true
  - JRE version and vendor used
  - Tracers used (Disable any unneeded tracers and tracers that could impact memory such as Socket/Network tracers)
  - If upgraded to 9.1 and using mixed mode (i.e. Running legacy tracers with the CA APM agent in new mode)

#2 Agent Memory Leaks - continued

- Possible Quick Fixes
  - Change vendor and JRE version
  - Switch from -javaagent to –Xbootclasspath
  - Disable introscope.autoprobe.deepinheritance.enabled
  - Remove unneeded PBDs and custom PBDs
  - Disable tracers using high memory (network, filesystem and System file metrics in toggles pbd)
  - Disable SQLAgent
  - Disable JMX collection by setting introscope.agent.jmx.enable=false
  - Disable any impacting extensions

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#3 Loadbalancing Issues

- Issue:
  - Load Balancing is not working.
  - Agents connecting to wrong Collector.
  - Cluster is frequently unbalanced
  - Agent connected to Enterprise Manager but does not show up in the workstation

- Next Step/Possible Quick Hits:
  - See if tied to cluster slowness
  - Wait 60 seconds for rebalancing to take place (And read loadbalancing.xml)
  - Loadbalancing.xml is configured incorrectly
  - Check introscope.enterprisemanager.loadbalancing.interval to see how often load balancer re-assigns agents to balance cluster.
  - If Agent not showing up in workstation, might be in disallowed mode. In disallowed mode agent connects to EM but does not report any metrics.

- Determine if using agent controllability feature of 9.1

  - Agents can be redirected to other collectors.

  - Agents can be disconnected

  - Agents can be stopped from sending data

- While not restarting any component(Agent/MOM/Collector)!!!

- Key Settings

  - `introscope.apm.agentcontrol.agent.allowed=false (If false,must match regex in loadbalancing.xml)`

  - `introscope.apm.agentcontrol.agent.emlistlookup.enable=true (Lookup EMs in stand-alone EM as well as collector)`

  - `introscope.enterprisemanager.agent.disallowed.connection.limit=0 (Maximum # of disallowed agents)`

  - `introscope.apm.agentcontrol.agent.reconnect.wait=45 (When disallowed agent limit hit, period in seconds to wait before attempting to reconnect)`

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Top Three CEM Issues

#1 TIM

- TIM Issues:
  - Restarts
  - Logs filled with errors
  - Not seeing traffic
  - SSL issues

- Next Steps
  - Look at TIM logs and configuration
  - Determine if too much data or issues with network data (no protocol filtering, high duplicate ACKs/ out of order packets)
  - Determine if network connection/Web Server Filters/MTP Hardware Filters are filtering traffic
  - Check if issues with SSL private keys/passphrases/cipher suites (Diffie Hellman)/TLS version (1.1/1.2 = Bad Data error messages)

- **Possible Quick Fixes**
  - Filtering
  - SSL Private Keys/Cipher Suites, TLS
  - Traffic quality/load
  - Increase TIM WatchDog memory
  - Change TIM settings
    - ConnectionTimeoutInSeconds =60.
    - SslSessionAgeOutCount=1000
    - SslSessionAgeOutSeconds=2700 (45 minutes)

#2 Not Able to Record

- Issue: Not able to record a transaction

- Next Steps:
  - Does it show up in tcpdump on TIM
  - Does it show up in TIM logs (Request AND Response)
  - See #1 TIM
  - Are the right headers attached? (Accept-Language, Content-Type)?
  - Is Content Type defined in TESS-default.properties
  - Is IP address/Server changing?
  - If recording, clean cache, start with new browser window, turn off web page caching
  - May need to add recorder.main parameter to tess-customer.properties to capture file extensions and MIME content types. In EM_HOME/config/tess-default.properties . Restart Collector after change.
    - recorder.mainComponentTrustedContentTypes=**x-application/amf** text/plain text/html text/xml application/x-java-serialized-object
    - recorder.mainComponentExtensions=.asp .htm .html .jsp .php .swe .fcc .dll .shtml .exe

- Possible Quick Fixes
  - Make changes to tess-default/customer.properties
  - Fix network issues (filtering, quality, round trip)
  - Try with another recording mechanism, desktop, IP subnet, browser, etc.
  - Try in non-production/different environment
  - Fix SSL issues (why not showing up in logs)

#3 Not Seeing Defects/Reports

- Issue: Not Seeing Any/All Defects or Reports

- Next Steps:
  - Is data backing up on TIM (/etc/wily/cem/tim/data/out)?
  - Investigate network traffic issues (filtering, round trips, quality)
  - Has this happened for a long time and partitions are not being cleaned up?
  - Are there issues with SSL private keys (wrong key, passphrase, ciphersuite, TLS version)
  - Are the "two enables in place?"
  - Check value of Last Aggregated Row for Daily Table (*select max(ts_last_aggregated_row) from ts_st_ts_us_dly;*)
  - Is TIM Collector overloaded and not doing its job?
  - Are there different/incompatible versions between EM and TIM?
  - Are there database issues?

- **Possible Quick Fixes**
  - Update Last Aggregated Rows on key statistical tables (ask support for help)
  - Restart Collector
  - If running defects and stats aggregation in a separate JVM change ThreadStackSize to 256 in tess-default.properties
  - Look at EM and database performance and settings
  - Move to 64 bit OS/JRE

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Questions?

- Questions