



IBM Software Group

Automating problem identification using IBM Autonomic Computing technology

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WebSphere® Support Technical Exchange



Agenda

- The business cases for Log Analysis
- Tool overview
 - ▶ IBM Support Assistant
 - ▶ Log Analyzer
 - ▶ Symptom Editor
- Case study
 - ▶ A recurring security error in a WAS installation

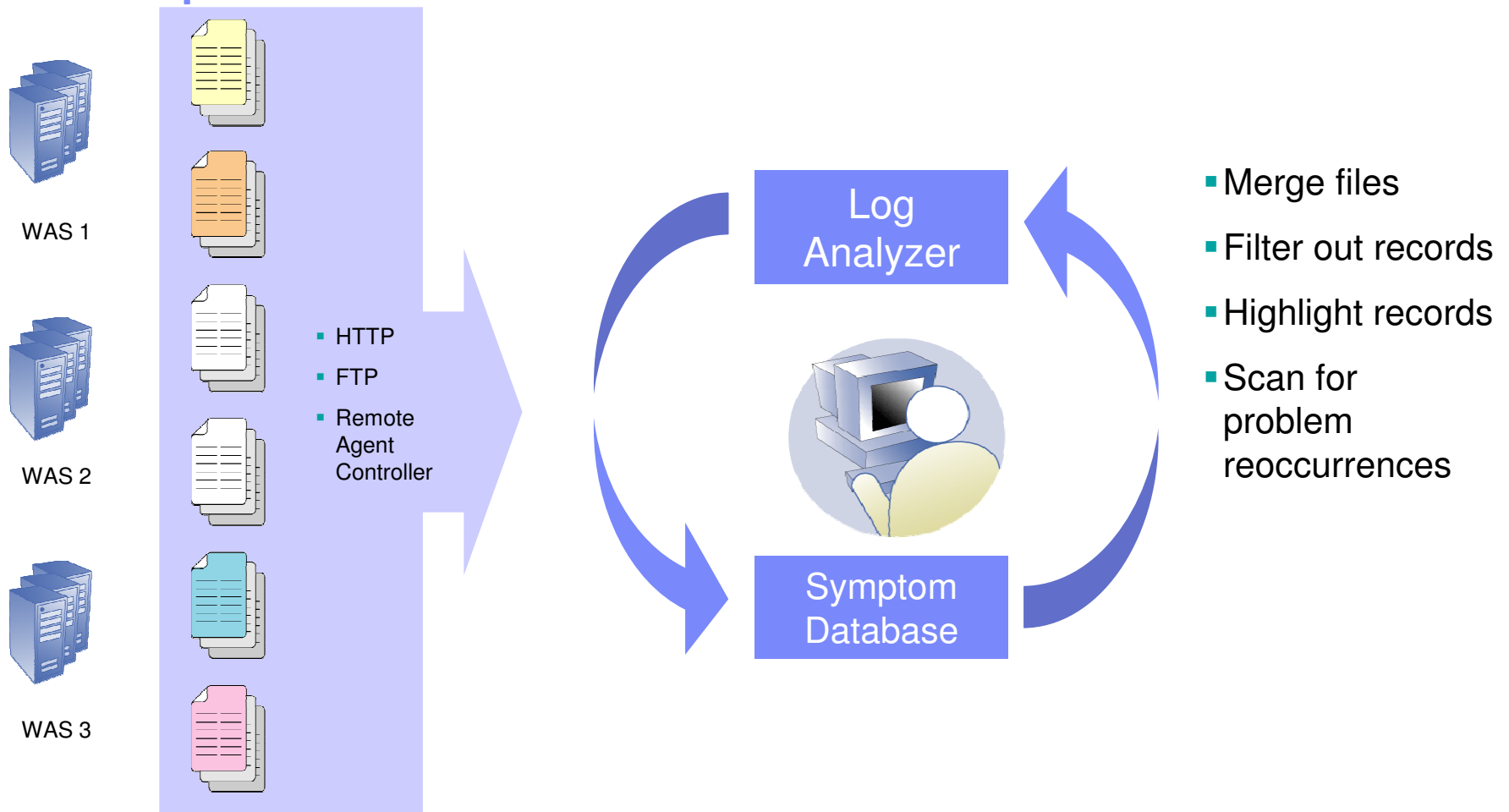


When customers call...

- Recreate the problem
- Run a diagnosis tool
- Google...Google again
- Ask a coworker...wait for him to Google...again
- When all else fails, read the logs entries, all thousands...Google them



When problem hits

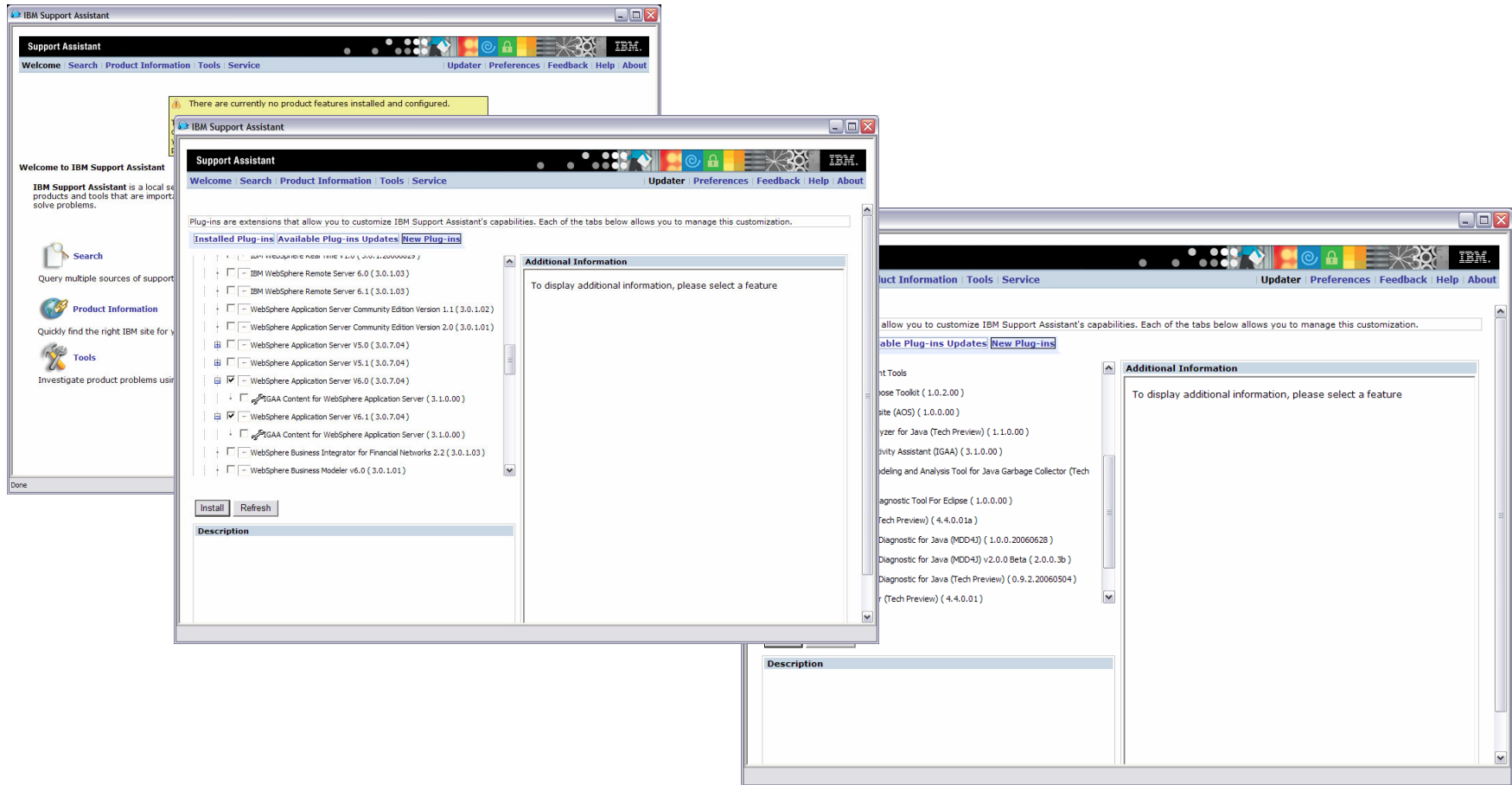


IBM Support Assistant

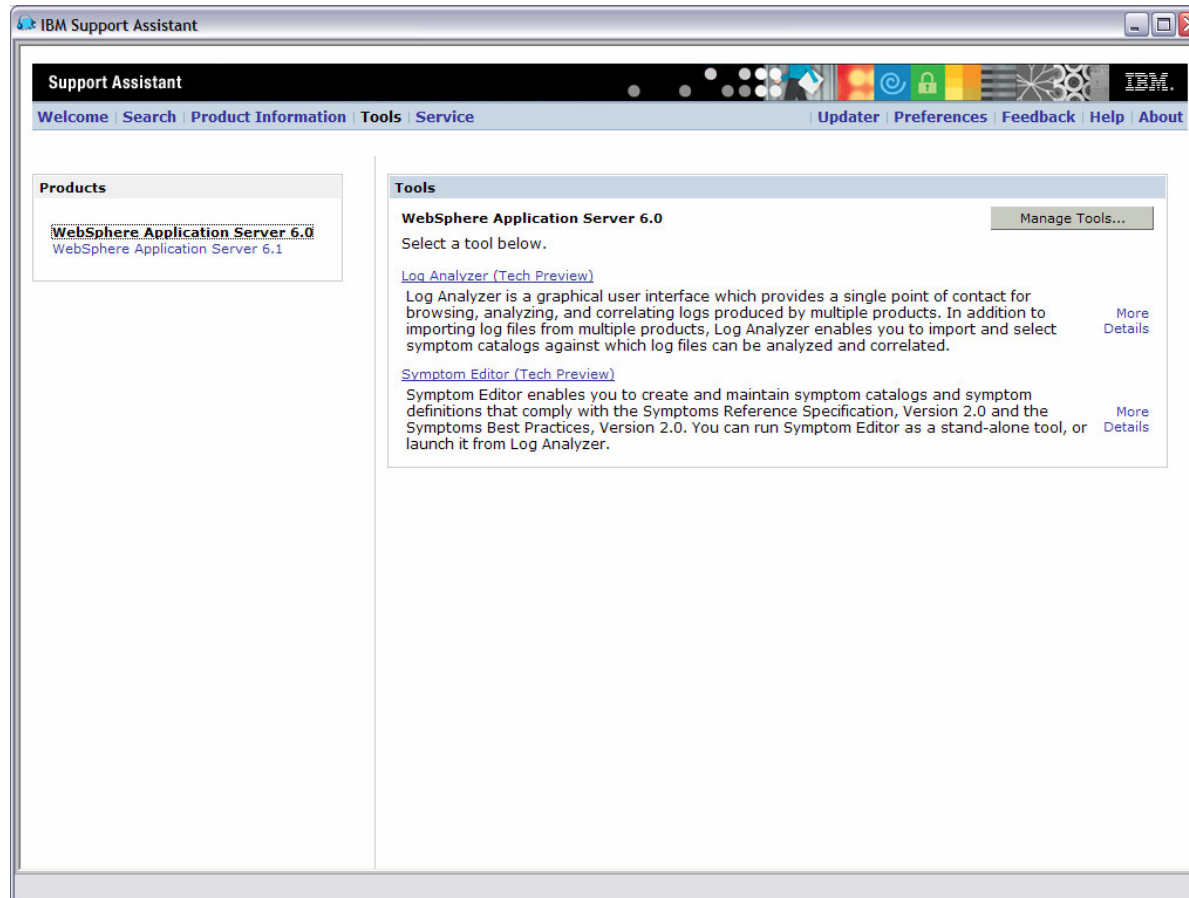
- Download
- Install product plug ins
 - ▶ WebSphere Application Server
 - ▶ Other IBM products
- Install tool plug ins
 - ▶ Log Analyzer
 - ▶ Symptom Editor
- <http://www.ibm.com/software/support/isa/>



Product specific and common plug ins

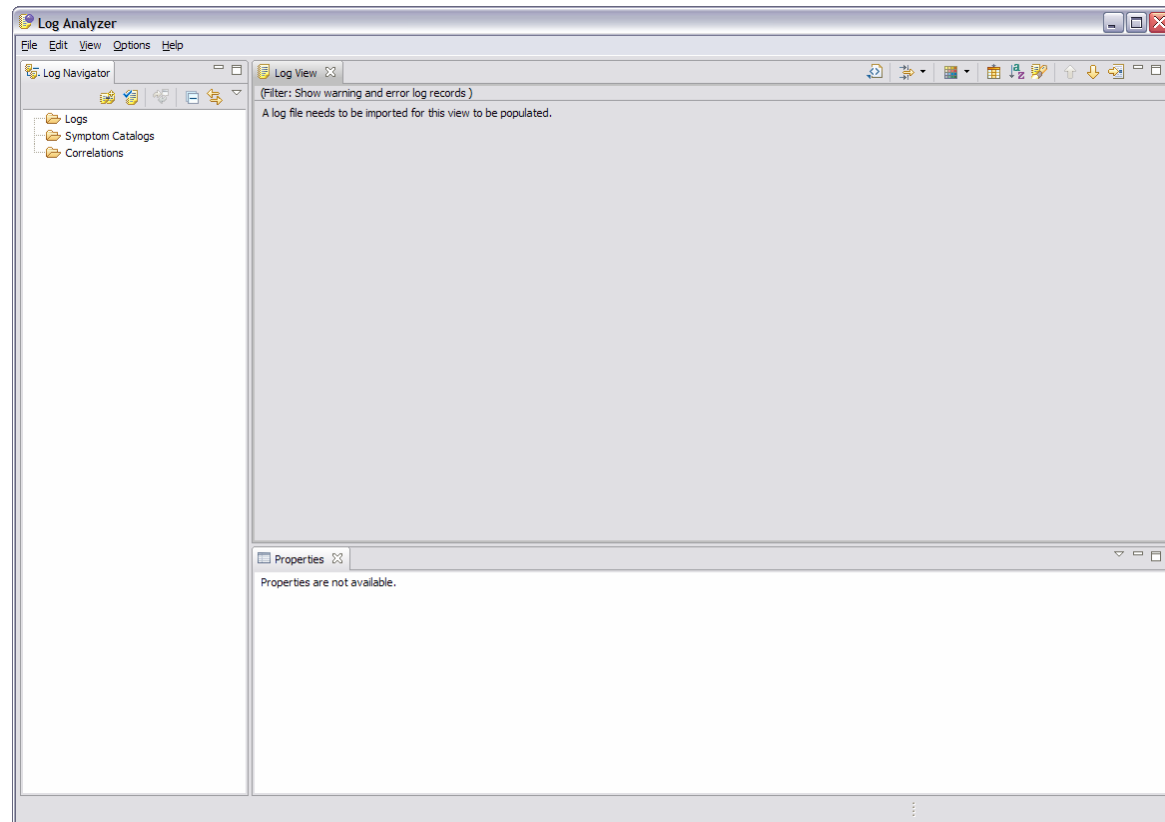


Select a product...and...launch a tool



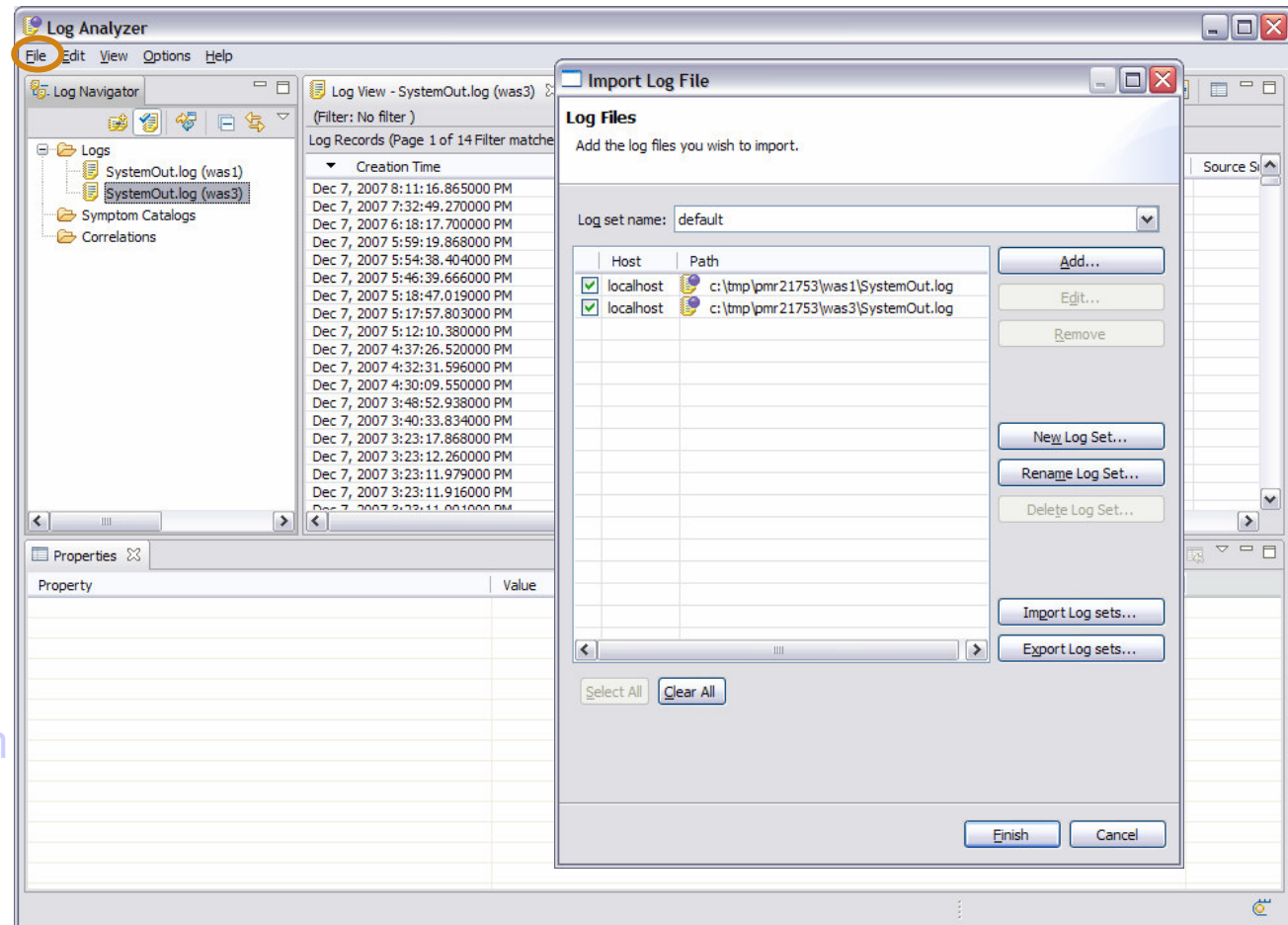
Log Analyzer Main Screen

- Import log files
- Merge log files
- Apply filters
- Apply highlighters
- Choose and reorder columns
- Import symptom databases
- Scan for symptom matches



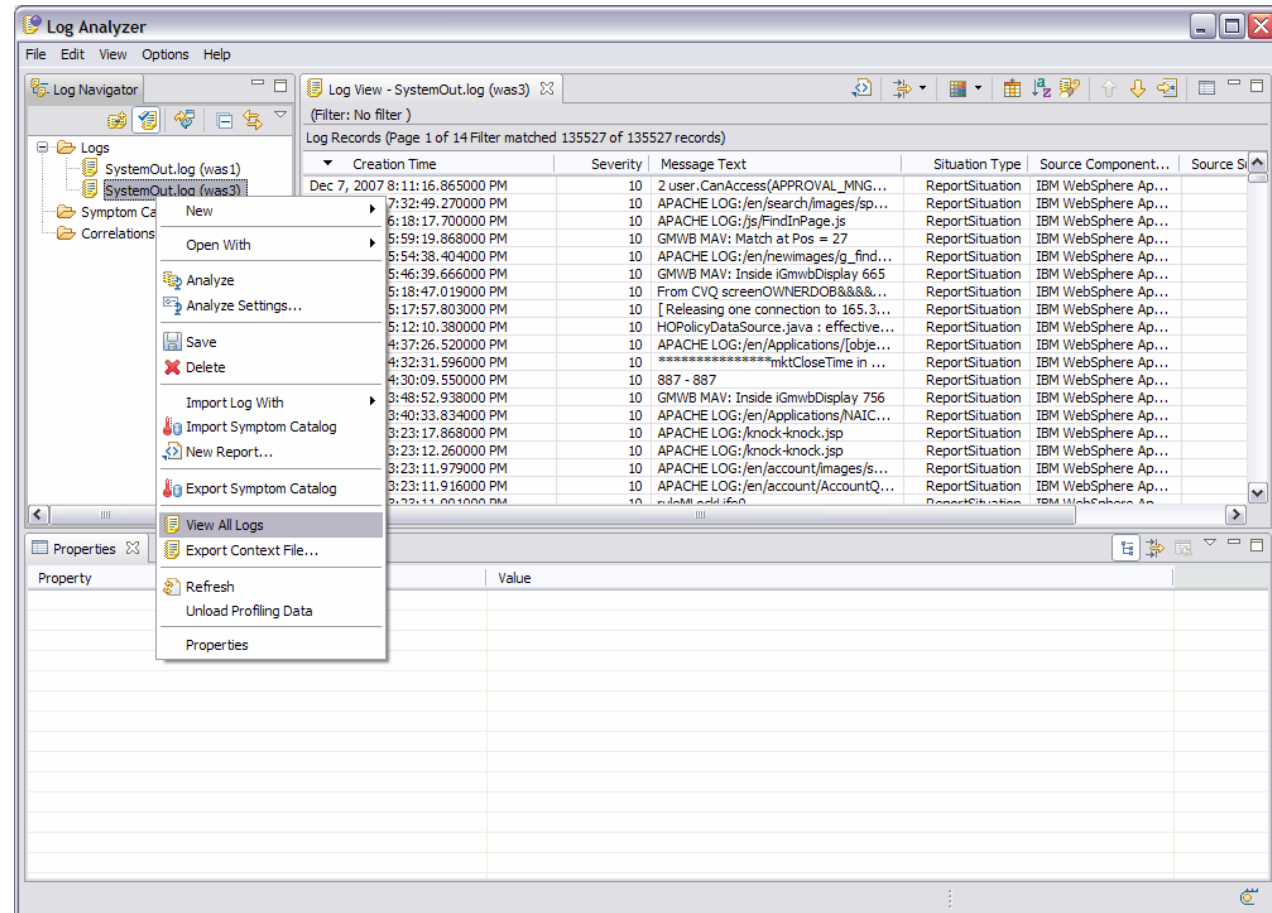
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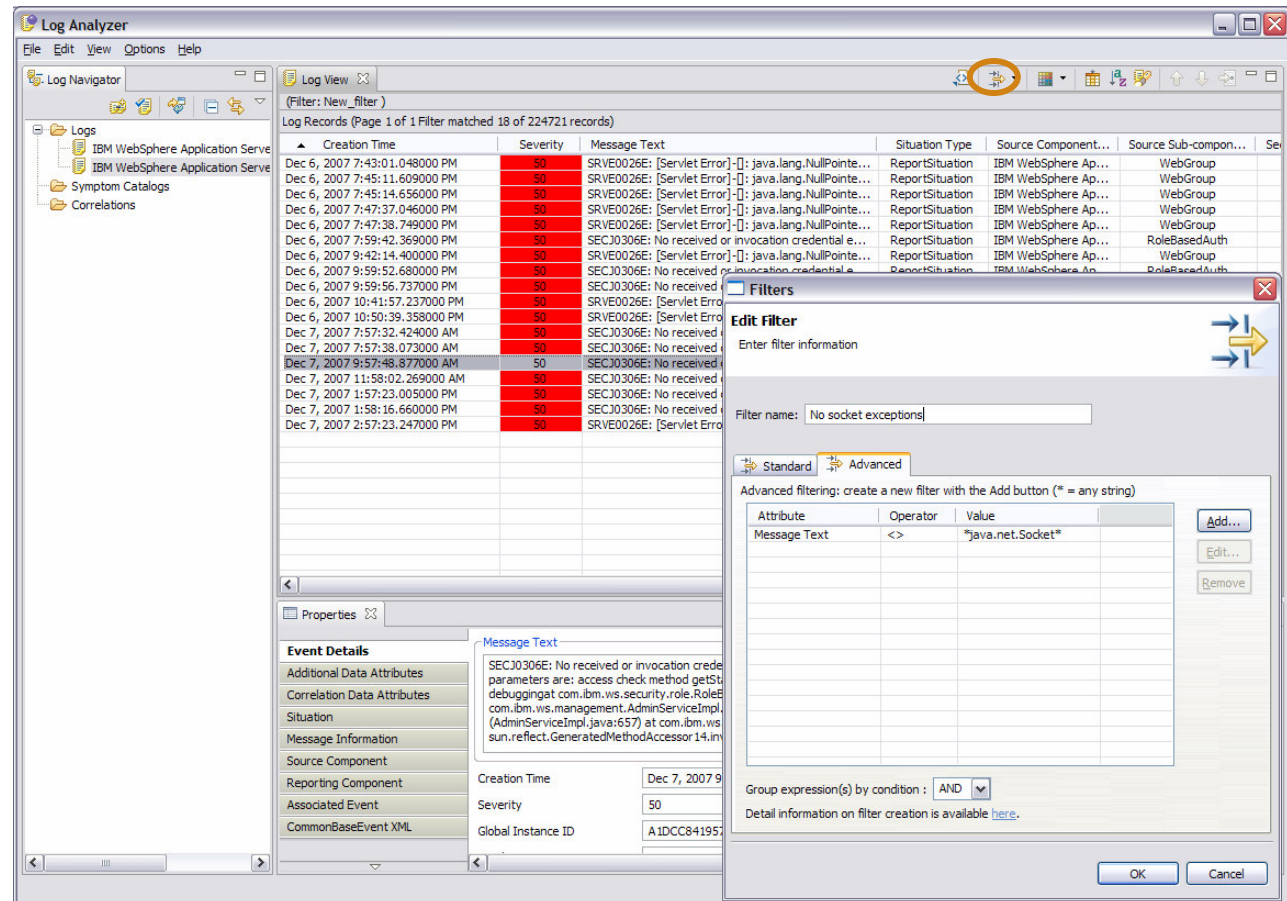
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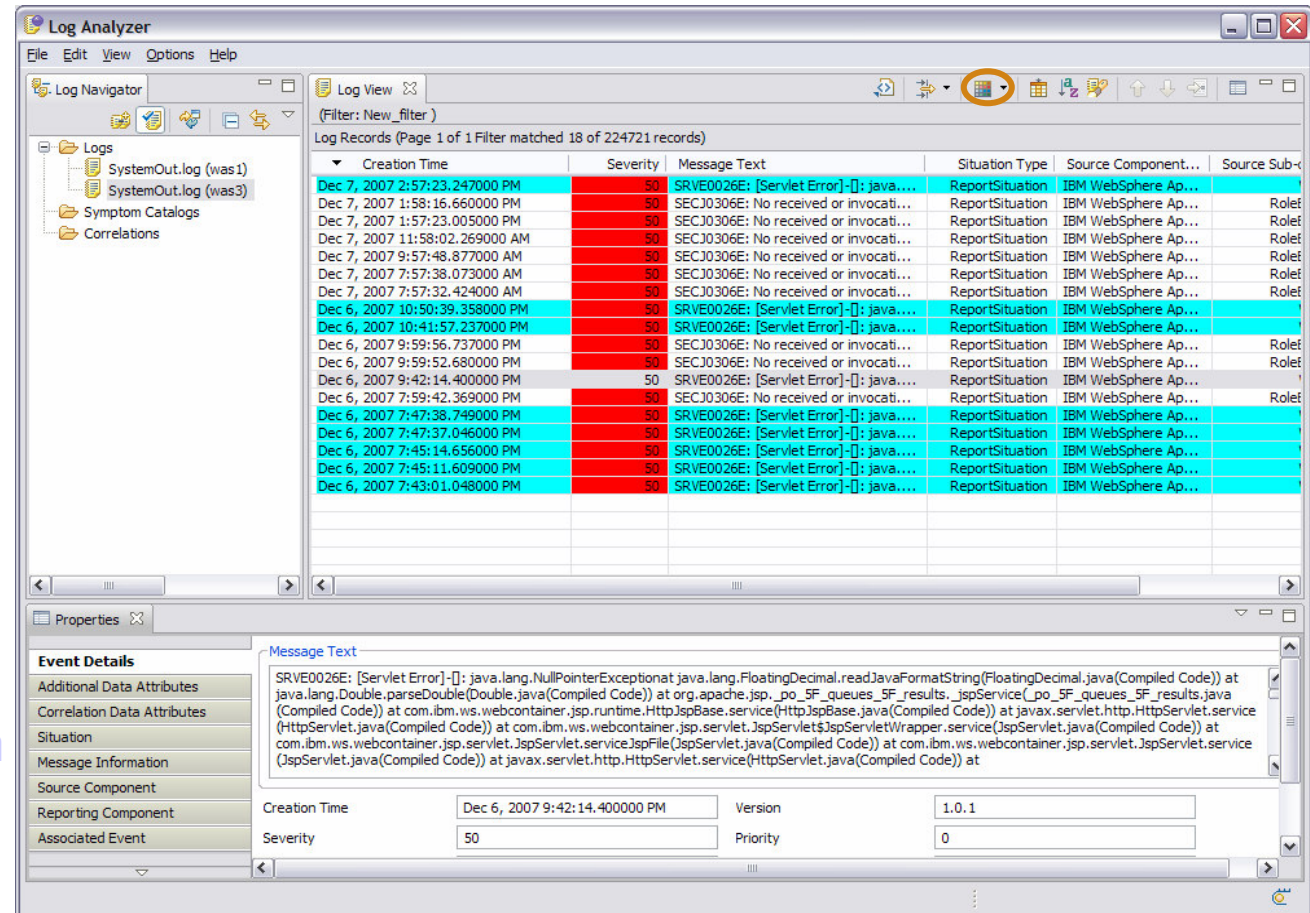
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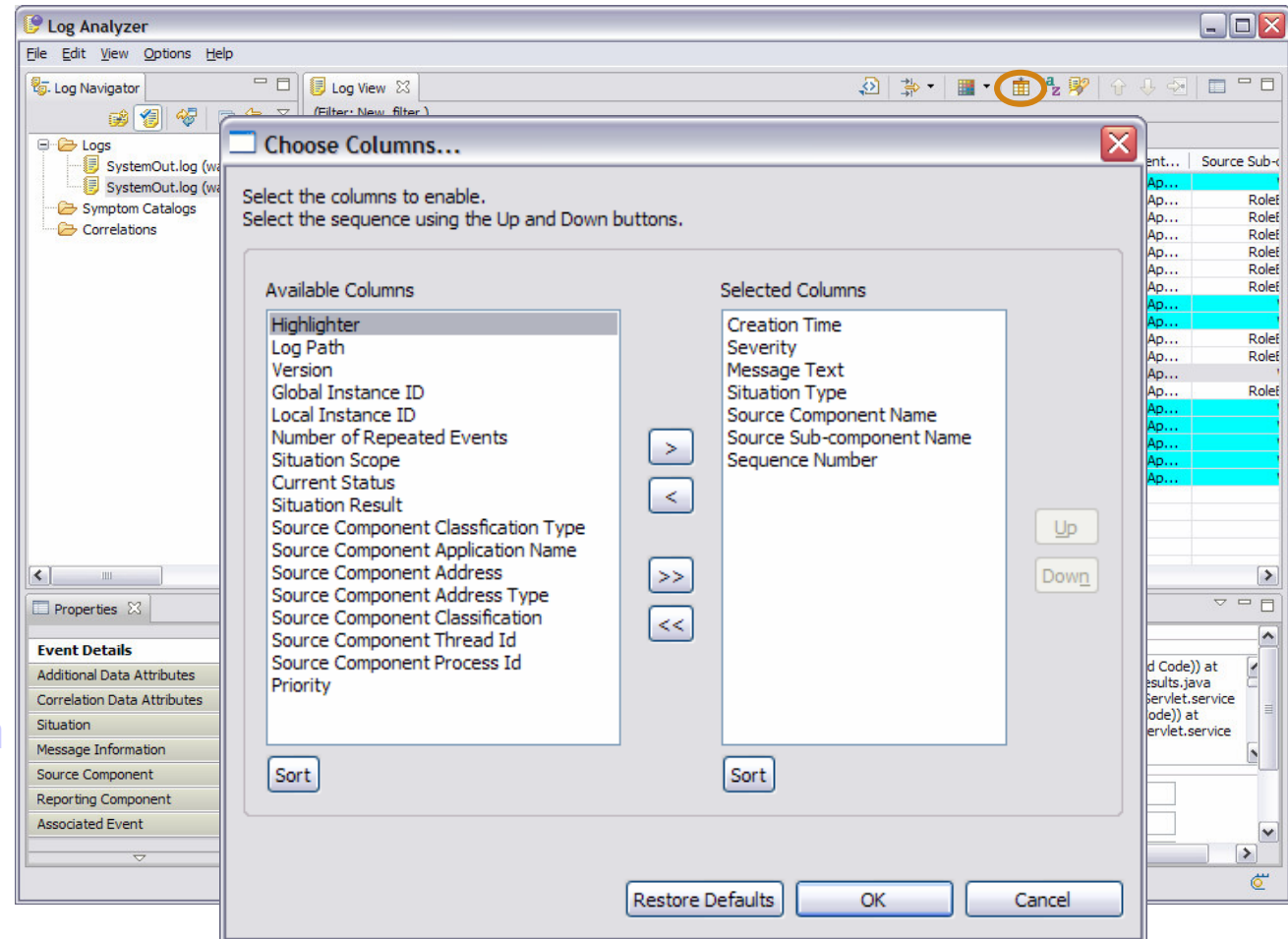
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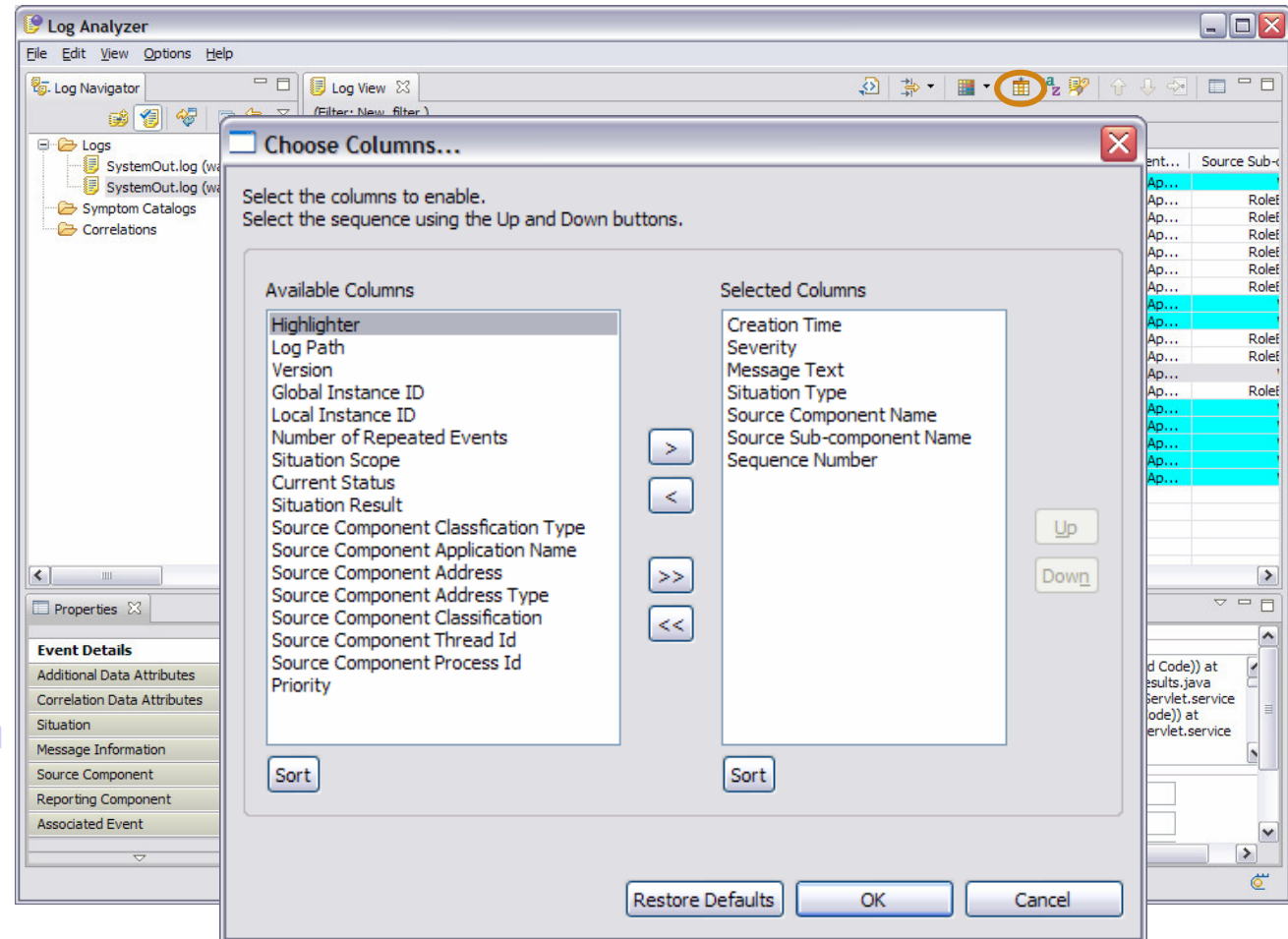
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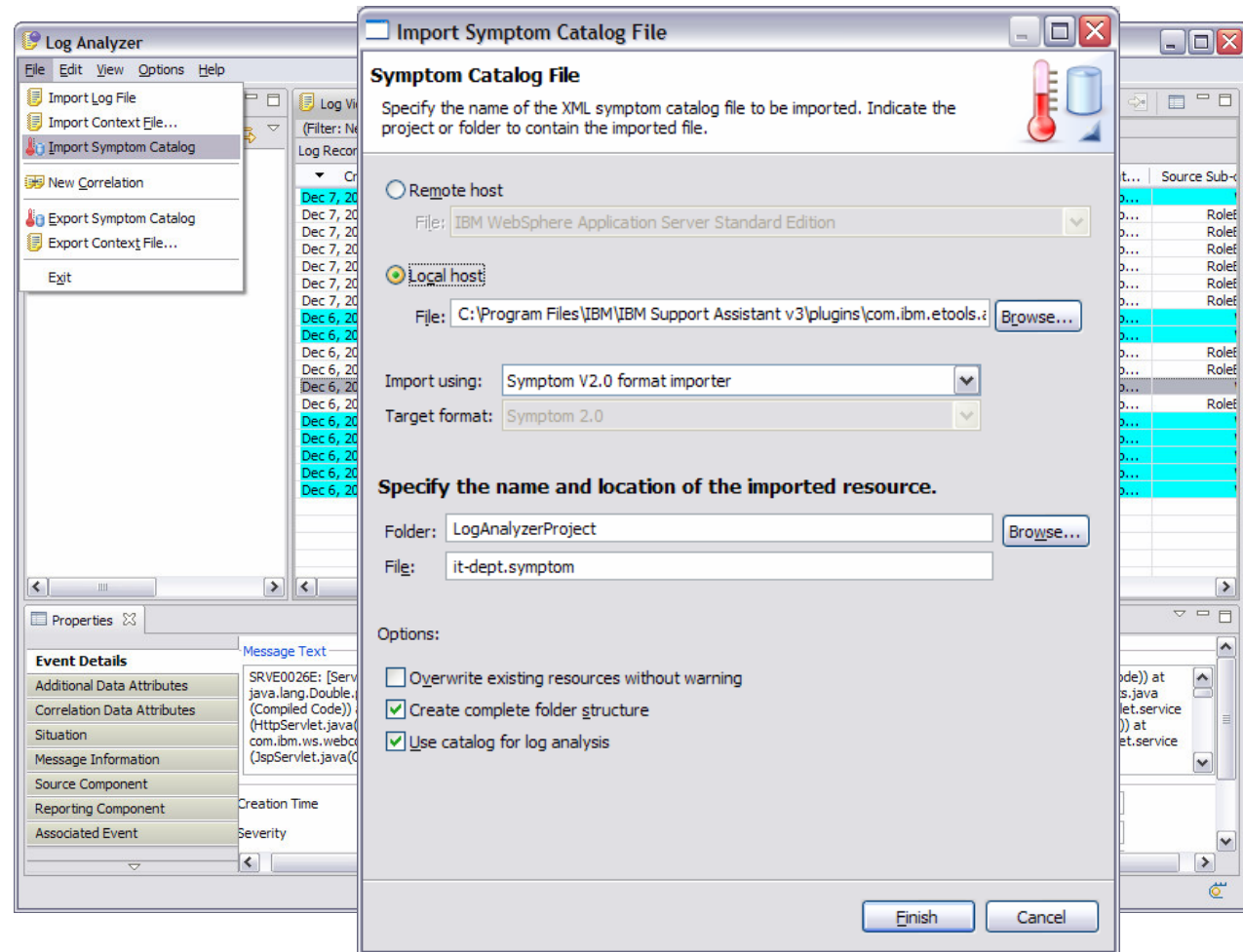
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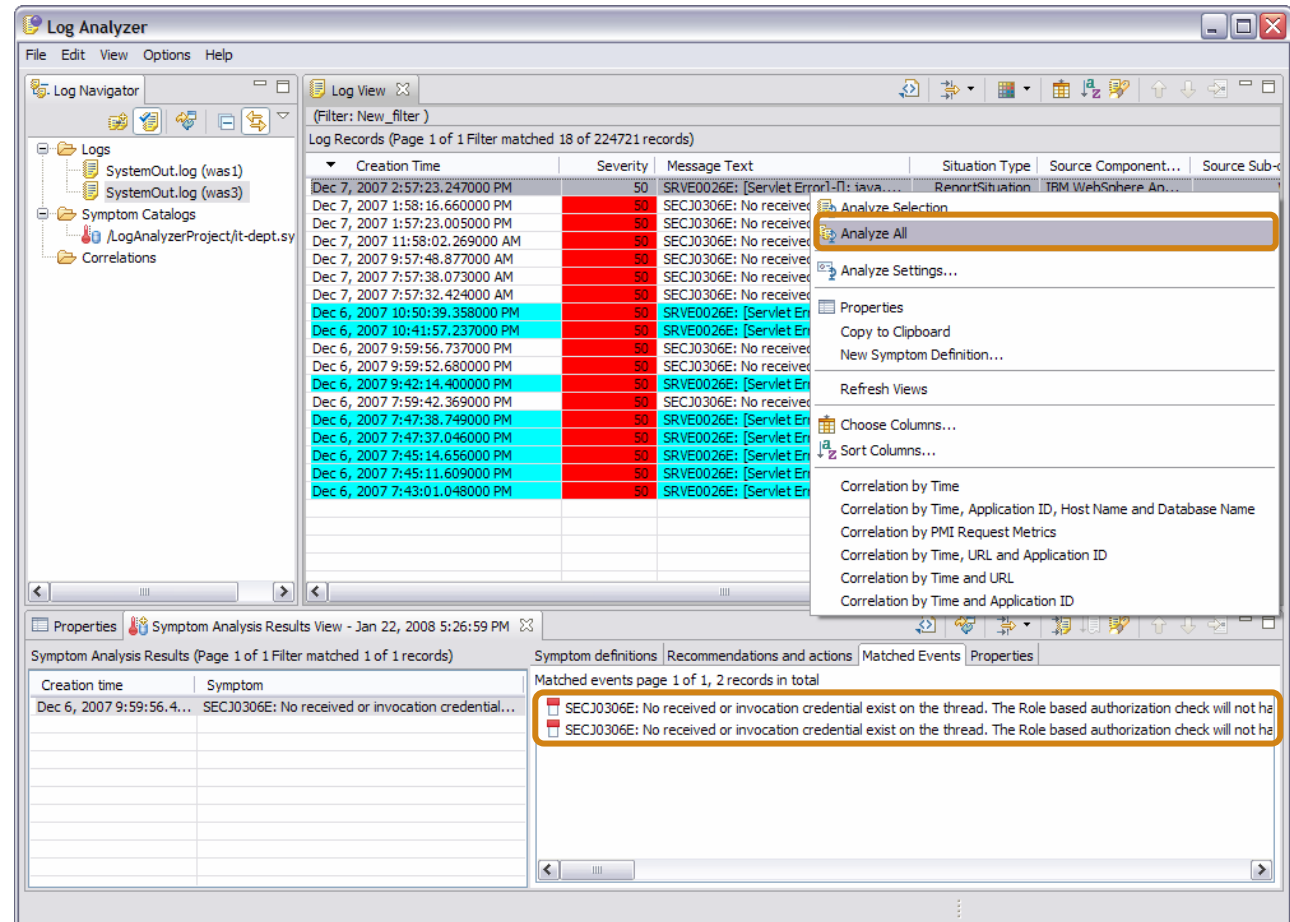
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Log Analyzer Main Screen

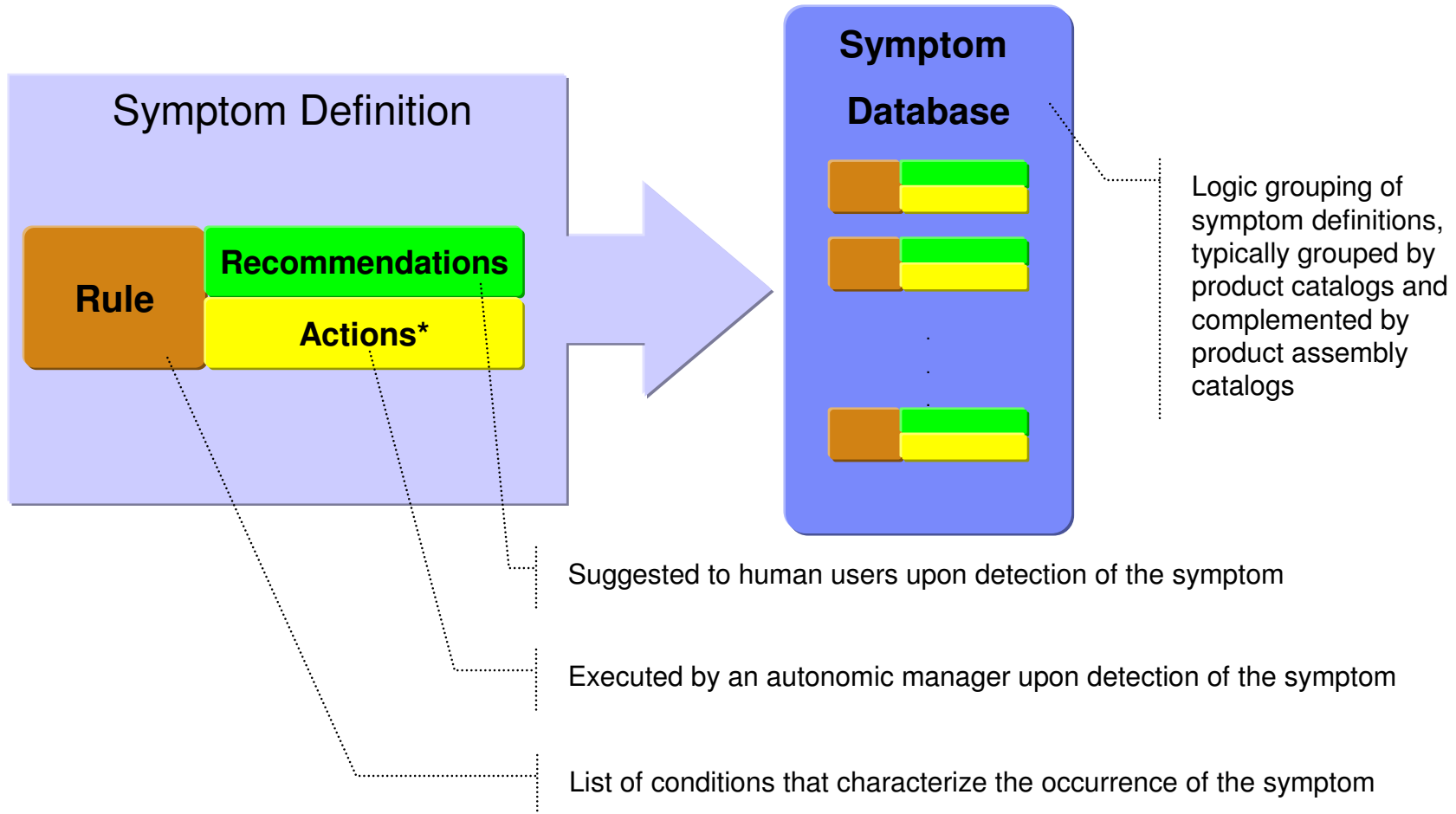
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Symptom matches, you say?



Symptom Definitions and Symptom Databases



Symptom examples

event .msgid=CEI0011E and
situation.category=connect

“...verify that the JMS message provider used by the Common Event Infrastructure is up and running, you can find the provider hostname by...”

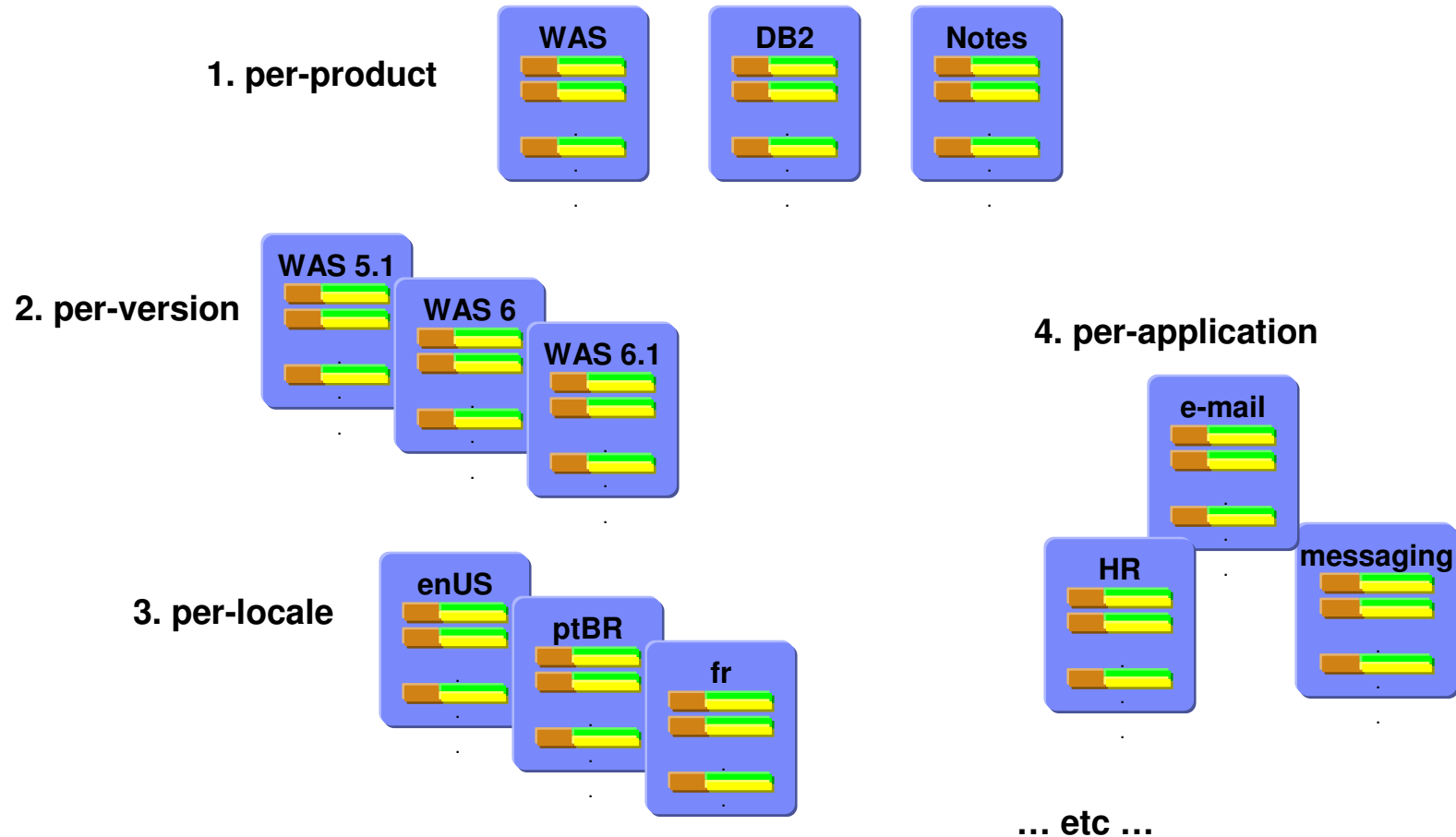
No Actions

event .msgid=CEI0011E and
situation.category=connect
AND
previously.observed.event.msg
id=JMS0089I

“The JMS server used by the Common Event Infrastructure is stopped”

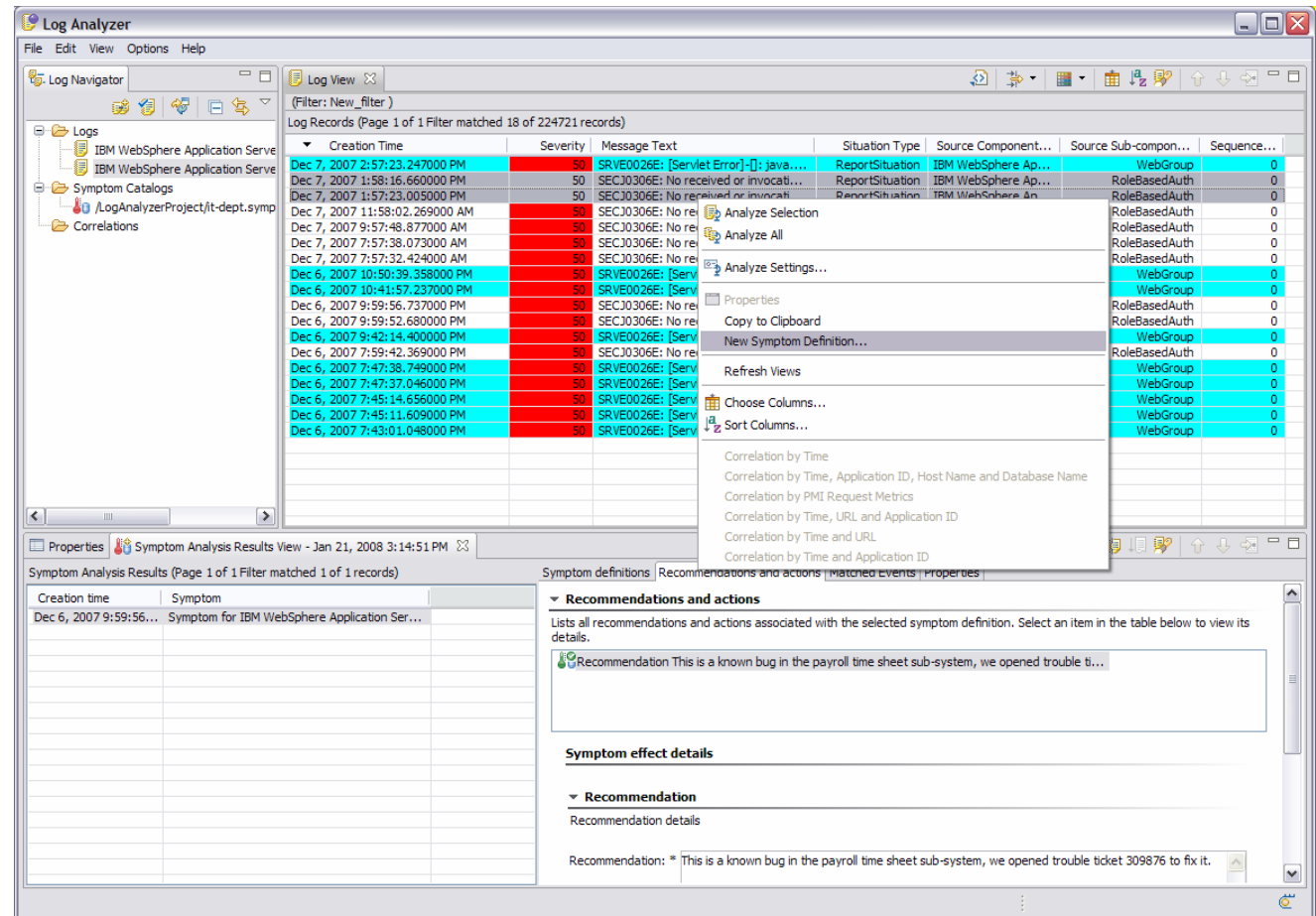
wsadmin -hostname {0} -f startjms.jacl

Symptom Databases (suggestions)



Creating new symptom definitions

1. Select events
2. Select pattern
3. Add recommendation
4. Share the symptom definitions



Creating new symptom definitions

Log Analyzer

File Edit View Options Help

Log Navigator

Log View

(Filter: New_filter)

Log Records (Page 1 of 1 Filter matched 18 of 224721 records)

Creation Time	Severity	Message Text	Situation Type	Source
Dec 7, 2007 2:57:23.247000 PM	50	SRVE0026E: [Servlet Error]-[]: java....	ReportSituation	IBM W
Dec 7, 2007 1:58:16.660000 PM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 7, 2007 1:57:23.005000 PM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 7, 2007 11:58:02.269000 AM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 7, 2007 9:57:48.877000 AM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 7, 2007 7:57:38.073000 AM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 7, 2007 7:57:32.424000 AM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 6, 2007 10:50:39.358000 PM	50	SRVE0026E: [Serv...	ReportSituation	IBM W
Dec 6, 2007 10:41:57.237000 PM	50	SRVE0026E: [Serv...	ReportSituation	IBM W
Dec 6, 2007 9:59:56.737000 PM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 6, 2007 9:59:52.680000 PM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 6, 2007 9:42:14.400000 PM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 6, 2007 7:59:42.369000 PM	50	SEC0306E: No received or invocati...	ReportSituation	IBM W
Dec 6, 2007 7:47:38.749000 PM	50	SRVE0026E: [Serv...	ReportSituation	IBM W
Dec 6, 2007 7:47:37.046000 PM	50	SRVE0026E: [Serv...	ReportSituation	IBM W
Dec 6, 2007 7:45:14.656000 PM	50	SRVE0026E: [Serv...	ReportSituation	IBM W
Dec 6, 2007 7:45:11.609000 PM	50	SRVE0026E: [Serv...	ReportSituation	IBM W
Dec 6, 2007 7:43:01.048000 PM	50	SRVE0026E: [Serv...	ReportSituation	IBM W

Properties Symptom Analysis Results View - Jan 21, 2008 3:14:51 PM

Symptom Analysis Results (Page 1 of 1 Filter matched 1 of 1 records)

Creation time	Symptom
Dec 6, 2007 9:59:56...	Symptom for IBM WebSphere Application Ser...

Symptom definitions Recommendations and actions

Recommendations and actions

Lists all recommendations and actions associated with the selected symptom details.

Recommendation This is a known bug in the payroll time sheet sub-system

Symptom effect details

Recommendation

Recommendation details

Recommendation: * This is a known bug in the payroll time sheet sub-system, we opened trouble ticket

New Symptom Definition

Symptom Rule

Rules for identifying the symptom

Rule type: Sequence Pattern

Version: 1.0

Description: SEC0306E: No received or invocation credential exist on the thread. The Role based authorization check will not have an accessId of the caller to check. The parameters are: access check method getState on resource Server and module Server. The stack trace is java.lang.Exception: dump thread stack for debugging at com.ibm.ws.security.role.RoleBasedAuthorizerImpl.checkAccess

Event selector:

- Symptom for IBM WebSphere Application Server - Express_ProductName_20080121034018
 - Event Selector
 - If ANY of the following are true:
 - Event Selector
 - If ANY of the following are true:

Add... Delete

Rule qualified by each value of:

Attribute:

Sequence rule options:

Time window: 5

Symptom Recommendation and Action

Recommendations and actions for the symptom

Item: Symptom Effect for Symptom for IBM WebSphere Application Server - Express_ProductName_20080121034018

Version: 1.0

Description: SEC0306E: No received or invocation credential exist on the thread. The Role based authorization check will not have an accessId of the caller to check. The parameters are: access check method getState on resource Server and module Server. The stack trace is java.lang.Exception: dump thread stack for debugging at com.ibm.ws.security.role.RoleBasedAuthorizerImpl.checkAccess (RoleBasedAuthorizerImpl.java:262) at com.ibm.ws.management.AdminServiceImpl.invoke(AdminServiceImpl.java:1347) at com.ibm.ws.management.AdminServiceImpl.invoke(AdminServiceImpl.java:1373) at

Add Recommendation Add Action Delete

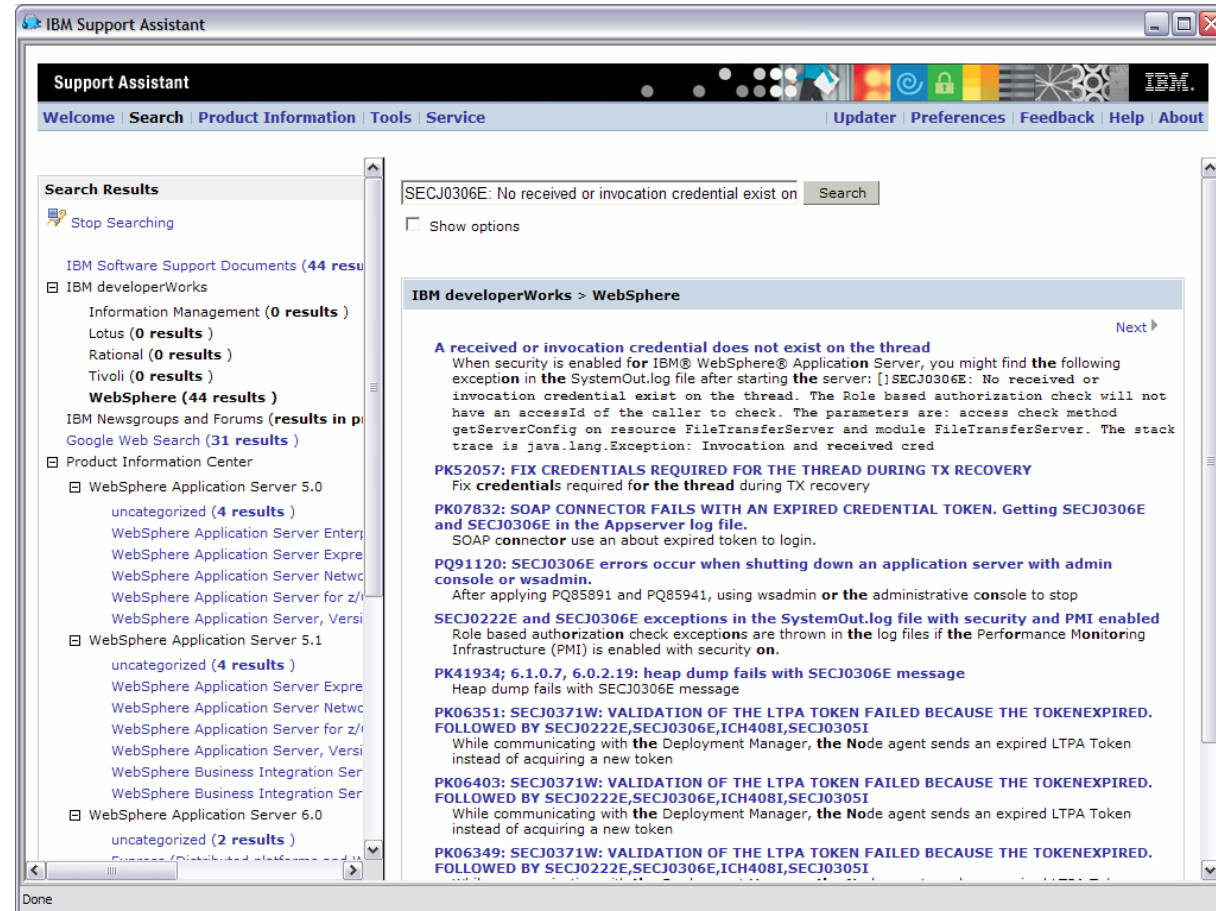
Recommendation: Multiple instances of the service are running on different services, contact application administrator and ask that he kills one of them.

Action: Multiple instances of the service are running on different services, contact application administrator and ask that he kills one of them.

Finish Cancel

Where do you get your recommendations?

- Colleagues
- “Oh, you knew about it...”
- ISA Federated Search

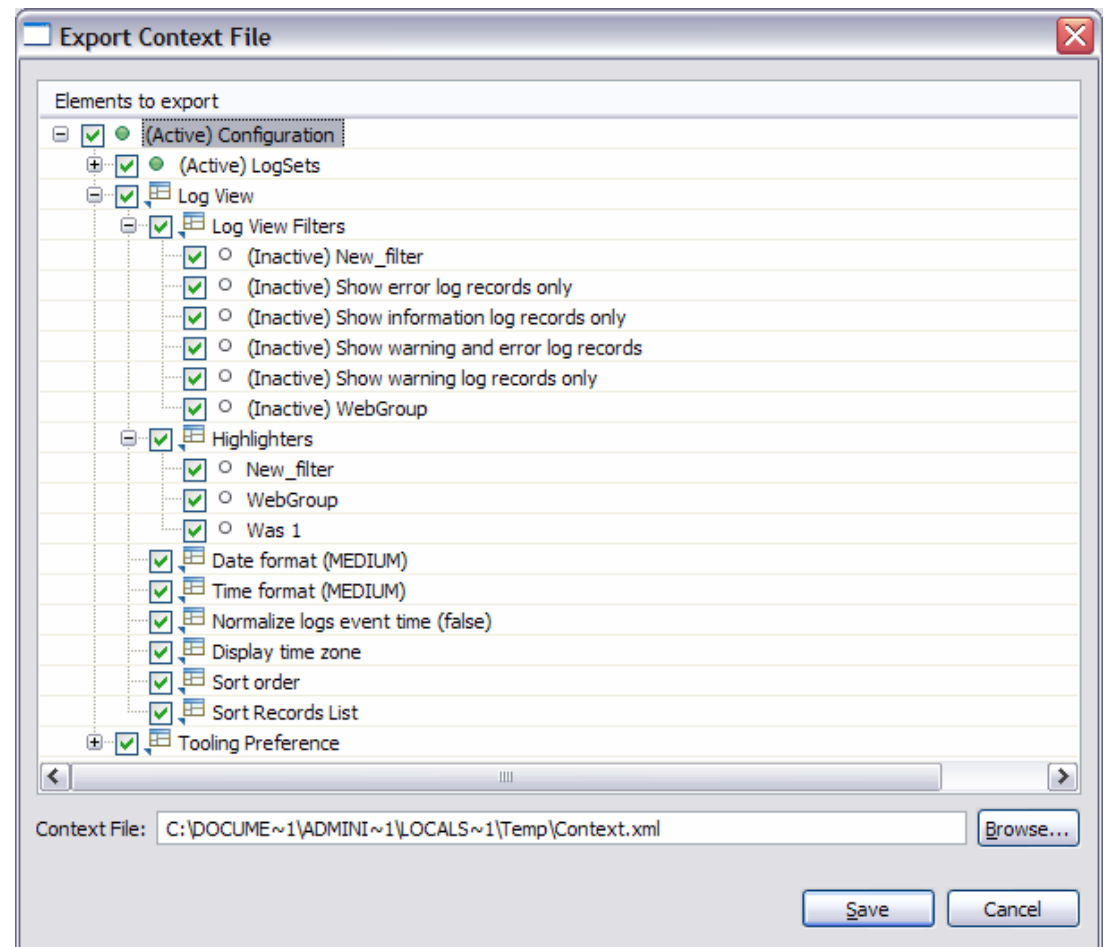


Sharing your settings and findings



Collaboration with other specialists

- Export and import configuration
- Filters
- Highlighters
- Sorting
- Column choices
- Data formats



Share the results...

Symptom Analysis Results (1 matches exported)

Creation time	Priority	Probability	Properties
Dec 6, 2007 9:59:56.400000 PM	50	100	<p>Resource IBM WebSphere Application Server - Express</p> <p>Descriptions SECJ0306E: No received or invocation credential exist on the thread. The Role based authorization check will not have an accessId of the caller to check. The parameters are: access check method getState on resource Server. The stack trace is java.lang.Exception: dump thread stack for debuggingat com.ibm.ws.security.role.RoleBasedAuthorizerImpl.checkAccess(RoleBasedAuthorizerImpl.java:292) at com.ibm.ws.management.AdminServiceImpl.preInvoke(AdminServiceImpl.java:1347) at com.ibm.ws.management.AdminServiceImpl.invoke(AdminServiceImpl.java:657) at com.ibm.ws.management.connector.AdminServiceDelegator.invoke(AdminServiceDelegator.java:130) at sun.reflect.GeneratedMethodAccessor14.invoke(Unknown Source) at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:Compiled Code) at java.lang.reflect.Method.invoke(Method.java:Compiled Code) at com.ibm.ws.management.connector.soap.SOAPConnector.invoke(SOAPConnector.java:Compiled Code) at com.ibm.ws.management.connector.soa</p> <p>Recommendations Multiple instances of the service are running on different services, contact application administrator and kill one of them.</p> <p>Matched Events Dec 6, 2007 9:59:52.680000 PM SECJ0306E: No received or invocation credential exist on the thread. The Role based authorization check will not have an accessId of the caller to check. The parameters are: access check method getState on resource Server and module Server. The stack trace is java.lang.Exception: dump thread stack for debuggingat com.ibm.ws.security.role.RoleBasedAuthorizerImpl.checkAccess(RoleBasedAuthorizerImpl.java:292) at com.ibm.ws.management.AdminServiceImpl.preInvoke(AdminServiceImpl.java:1347) at com.ibm.ws.management.AdminServiceImpl.invoke(AdminServiceImpl.java:657) at com.ibm.ws.management.connector.AdminServiceDelegator.invoke(AdminServiceDelegator.java:130) at sun.reflect.GeneratedMethodAccessor14.invoke(Unknown Source) at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:Compiled Code) at java.lang.reflect.Method.invoke(Method.java:Compiled Code) at com.ibm.ws.management.connector.soap.SOAPConnector.invoke(SOAPConnector.java:Compiled Code) at com.ibm.ws.management.connector.soa</p>

Situation Type	Source Component Name
ReportSituation	IBM WebSphere Application Server - Express
ReportSituation	IBM WebSphere Application Server - Express
	IBM

Summary

- Log Analyzer as a triage tool
- Filter what you do not want to see
- Highlight what it is important
- Record new found knowledge in a symptom definition
- Save your time...and others' too



Resources

- IBM Support Assistant
 - ▶ <http://www.ibm.com/software/support/isa/>
- Apache Derby (for large log support)
 - ▶ <http://db.apache.org/derby/>
- DB2® Express (for large log support)
 - ▶ <http://www.ibm.com/software/data/db2/udb/support/downloadv8.html>



Resources (symptoms databases)

- Symptoms deep-dive series
 - ▶ <http://www.ibm.com/developerworks/autonomic/library/ac-symptom1/>
- Eclipse Test & Performance Tools Platform
 - ▶ <http://www.eclipse.org/tptp/>
- Symptoms best-practice
 - ▶ http://download.boulder.ibm.com/ibmdl/pub/software/dw/opensource/btm/SymptomBestPractices_v2.0.pdf
- Symptom Catalog 2.0 specification
 - ▶ http://download.boulder.ibm.com/ibmdl/pub/software/dw/opensource/btm/SymptomSpec_v2.0.pdf



Additional WebSphere Product Resources

- Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at:
<http://www.ibm.com/developerworks/websphere/community/>
- Learn about other upcoming webcasts, conferences and events:
http://www.ibm.com/software/websphere/events_1.html
- Join the Global WebSphere User Group Community: <http://www.websphere.org>
- Access key product show-me demos and tutorials by visiting IBM Education Assistant:
<http://www.ibm.com/software/info/education/assistant>
- View a Flash replay with step-by-step instructions for using the Electronic Service Request (ESR) tool for submitting problems electronically:
<http://www.ibm.com/software/websphere/support/d2w.html>
- Sign up to receive weekly technical My support emails:
<http://www.ibm.com/software/support/einfo.html>



Questions and Answers

