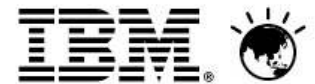


**Pulse**

IBM SolutionsConnect 2013

# Performance Analysis Tools for Maximo

11/06/2013





## Agenda

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- It's free!
- Crunch points
- HA/DR/Business Continuity
- IBM Support Assistant
- PerfMon (MAD)
- IBM Tivoli Monitoring Agent for Maximo
- IBM Smarter Performance Analysis Suite
- MustGather
- Maximo Asset Management Wiki
- ***log zipper***

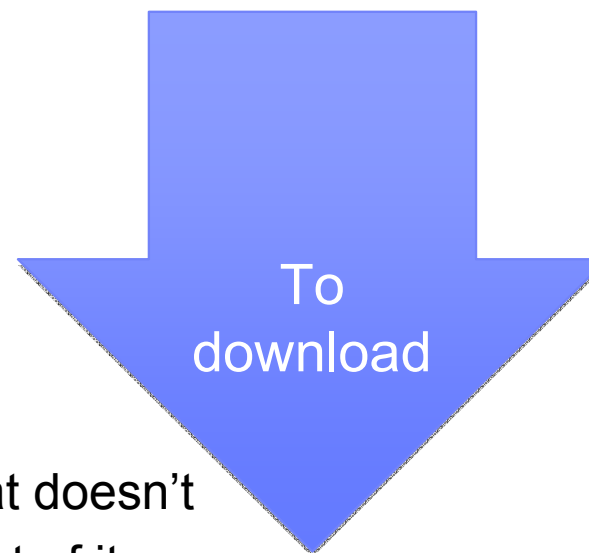
**IT'S FREE!**



## It's Free!

- Almost all the tools mentioned today are....

**FREE**



- Some have add-ons that do cost... of course what doesn't
- Some may require a consultant to get the best out of it

# CRUNCH POINTS



## Crunch Points

- System performance depends on more than the applications and the database.
- The network architecture affects performance.
- Application server configuration can hurt or improve performance.
- The way that you deploy IBM Tivoli service management products across servers affects the way the products perform.
- Many other factors come into play in providing the end-user experience of system performance.

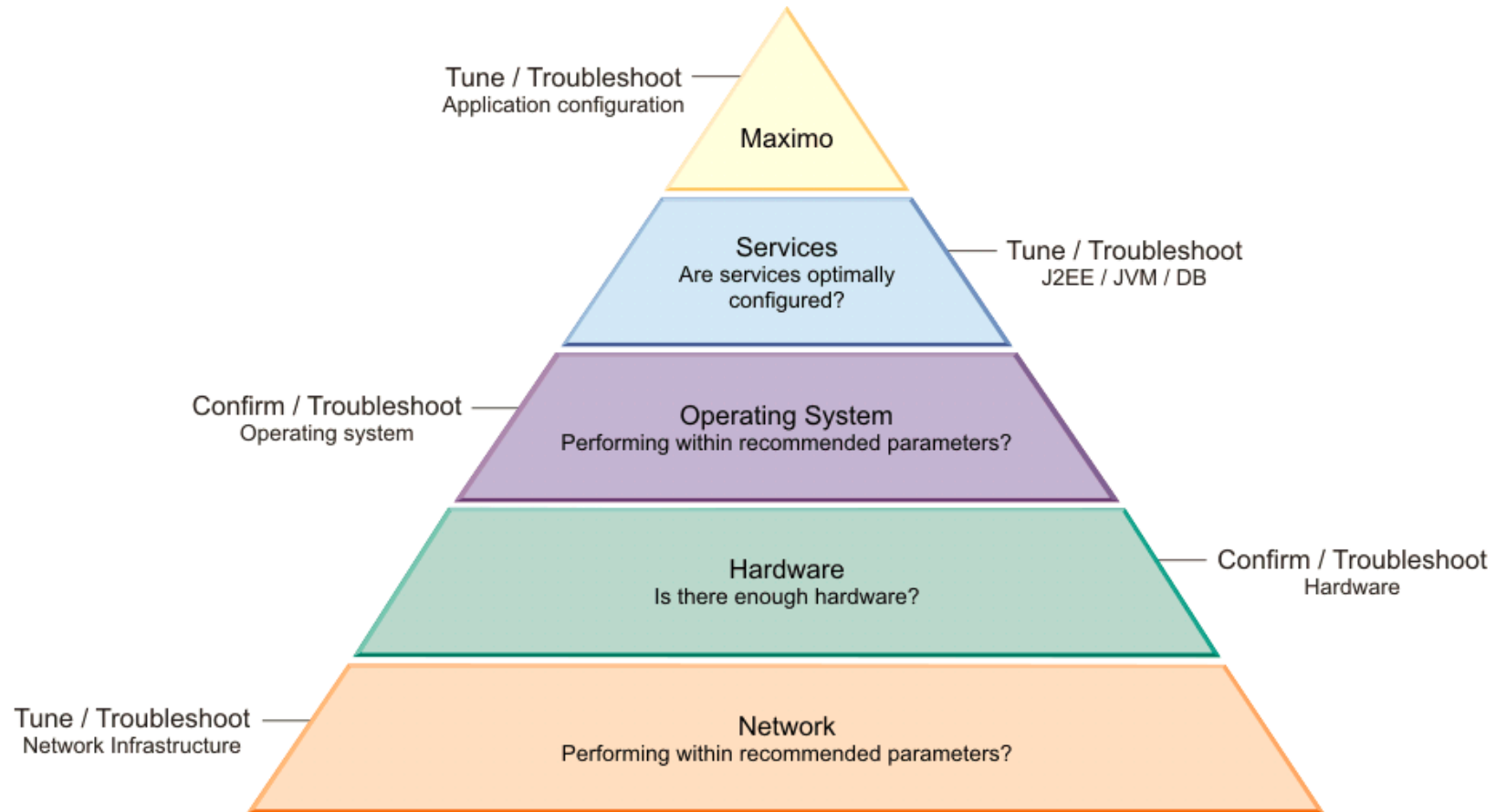


## Crunch Points

- Multi-Tier application environments rely on each component
- Any component not functioning, impacts anything relying on it
- At a high level
  - The application relies on the application server and database
  - The application server and database rely on OS and hardware
  - The OS and hardware relies on network connectivity
- Performance tuning begins with the least reliant technology



# Performance Triangle







## Success...means?

- Attaining success means defining what success is
- Understanding user requirements
- Performance generally means user perception, it can mean
  - Improper training and inefficient use of the product
  - Inefficient screen design and/or background processing
  - Incorrect client/browser configuration
  - Poor network performance
  - Not optimal server/application configuration



## Focus Areas

- System architecture setup
- Application server configuration
- Scheduled tasks (cron tasks)
- Reporting
- Integration with other systems using the integration framework
- Network issues
- Bandwidth
- Load balancing
- Database tuning
- SQL tuning
- Client workstation configuration
- Miscellaneous performance improvement tips

Business Continuity

**HIGH AVAILABILITY**



## What is HA?

- **High availability** is a system design approach and associated service implementation that ensures a prearranged level of operational performance will be met during a contractual measurement period.
- Availability refers to the ability of the user community to access the system, whether to submit new work, update or alter existing work, or collect the results of previous work.
- If a user cannot access the system, it is said to be unavailable. Generally, the term downtime is used to refer to periods when a system is unavailable.



## So what?

- I want it NOW!
- I want to enter data fast!
- I want the screen to display fast!

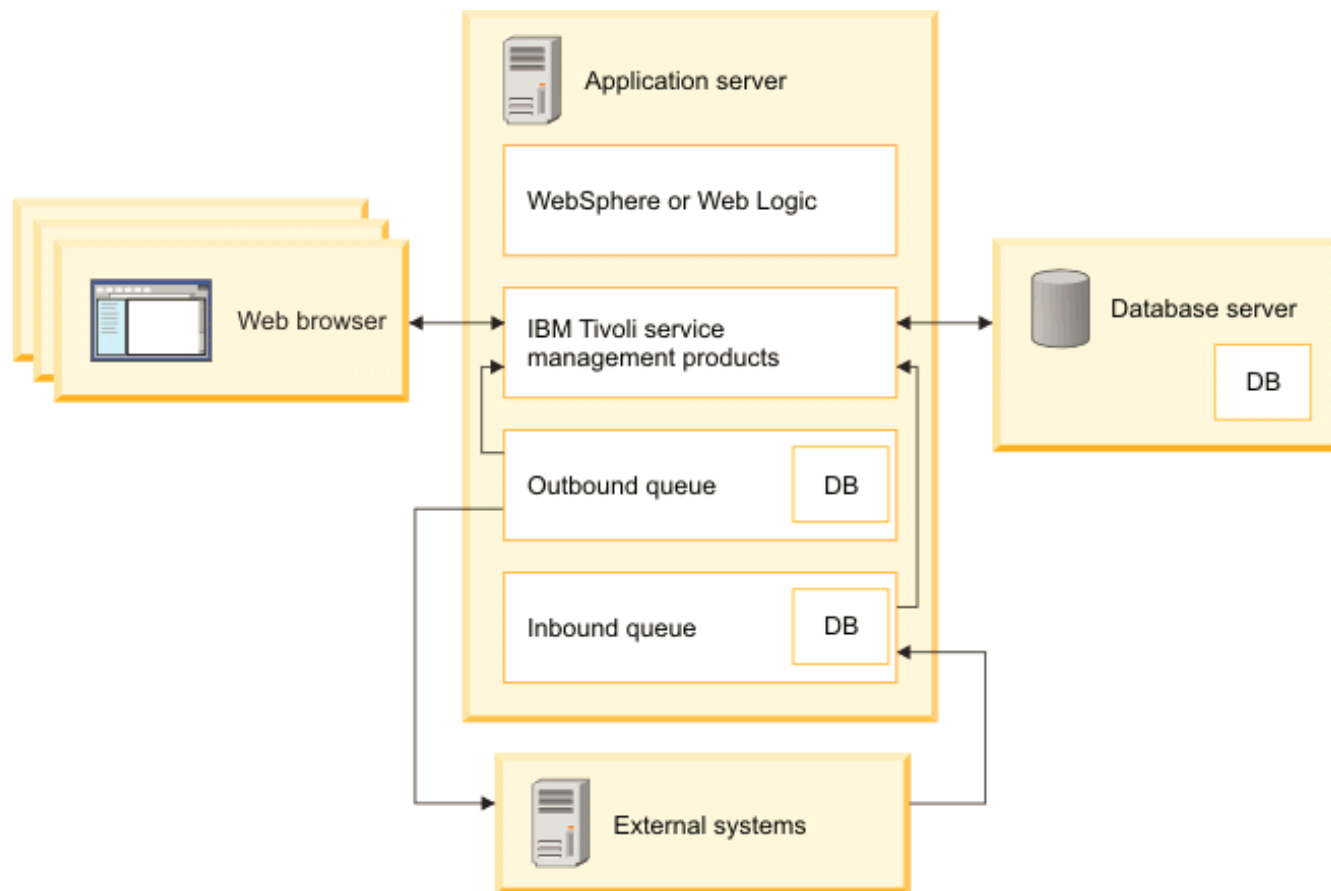
Slow performance = blame Maximo

No performance = blame Maximo

Fast performance = ...never hear from the users

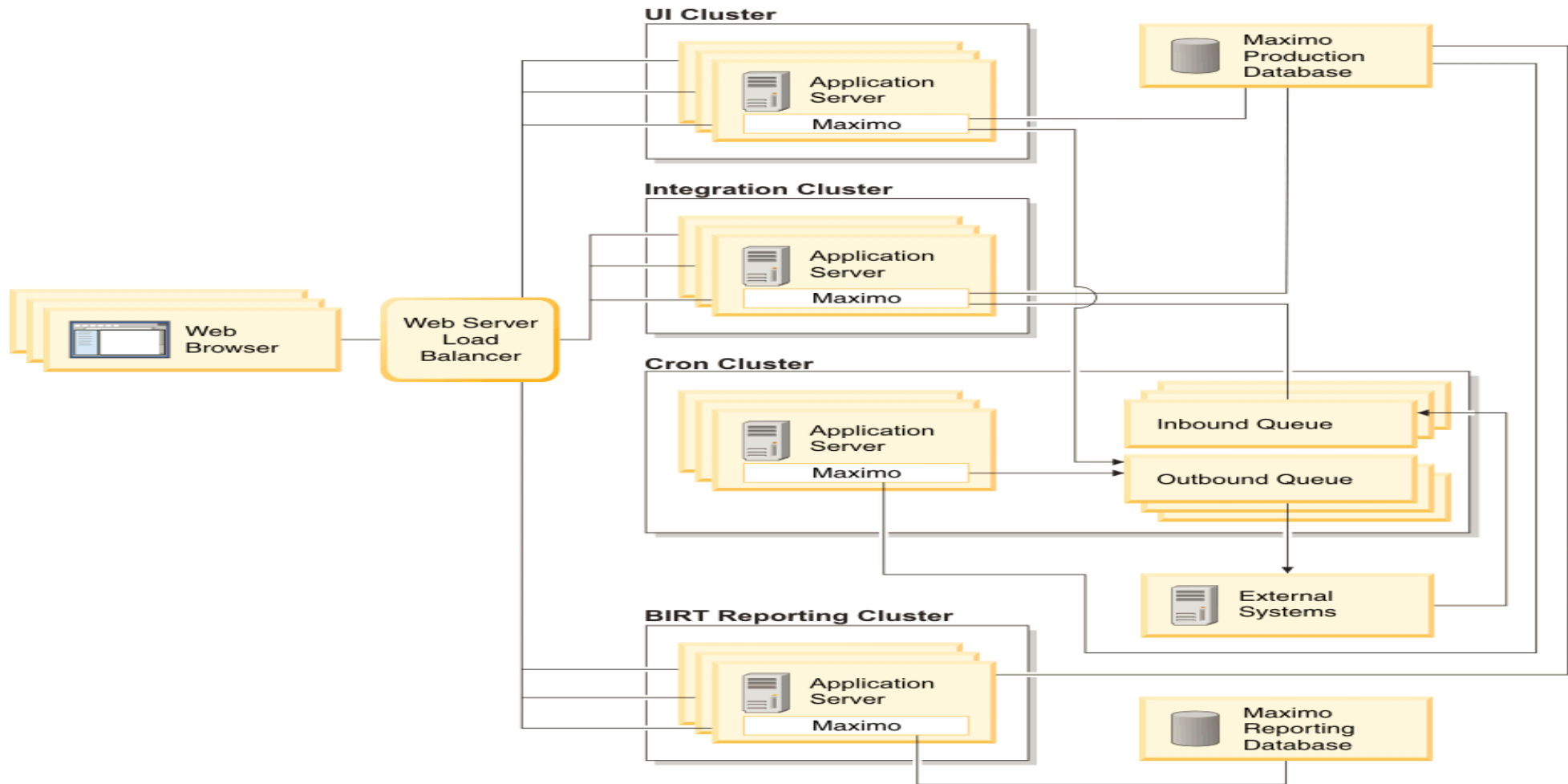


# Normal install





# Performance Install



# ISA LITE & ISA WORKBENCH





## IBM Support Assistant - Lite

- ISA Lite simplifies the collection of critical data for use when opening a PMR.
- When a PMR is opened certain critical information is required to help in the discovery process. We recognize that the collection of this information can be resource and time consuming so we have developed tools to help.
- The ISA Lite collectors are an extension of the ISA desktop toolkit that IBM provides for free to help you resolve problems.
- ISA Lite collectors are only a few megabytes in size and are completely self contained.



## ISA workbench

- You can benefit from concurrent search, media viewer, guided troubleshooter, data collectors, service request submission, and other features.
- Provides access to several different serviceability tools which can assist you in many areas of problem diagnosis such as Java troubleshooting, product configuration analysis, log analysis, and more.
- IBM Support Assistant can be customized for over 350 products and over 20 tools.

# PERFMON

- The **Maximo Activity Dashboard** commonly known as PerfMon is available as a UI Interface from Maximo version 7 onwards. It is normally used when debugging performance related problems in Maximo.
- Provides information on
  - Individual Request Processing Time on the server side including –Overall response time
  - Average response time for similar kind of requests
  - The navigation event that led to the request being made
  - Maximo Business Objects (MBO) execution for each request
  - Information about SQL requests – Total number, how many times, Actual execution time, ones that took more than 100ms and so on
  - Number of MBO's generate for the UI request
- For users running Oracle database the PerfMon can also show the Explain Plan for SQL execution that helps pinpoint “full table scans”.

# IBM Maximo Activity Dashboard

Request / Response

Monitor Label ↑	Response Time	Hits	Avg ms.	Total ms.
[localhost]/maximo/ui/login---app-maximo--null--null-null-null	23625	1	23625	23625
[localhost]/maximo/ui/maximo.jsp---app-maximo--1-startcncr--click-goto-mx44	188	1	188	188
[localhost]/maximo/ui/maximo.jsp---app-maximo--1-startcncr--click-menu18_PO_APP-startcncr_mainrec_menus	15	1	15	15
[localhost]/maximo/ui/---app-maximo--1-startcncr--loadapp-po-null	5188	1	5188	5188
[localhost]/maximo/ui/maximo.jsp---app-maximo--1-po--filterrows--mx340	2500	1	2500	2500
[localhost]/maximo/ui/maximo.jsp---app-maximo--1-po--click-null-mx563[R:4]	2656	1	2656	2656



## IBM Maximo Activity Dashboard

SQL / Explain Plan / Stack Trace

Transaction	Details
[localhost]/maximo/ui/...app-maximo--1-startcntr--loadapp-po-null	<p># 25 stmts Total SQLs time[794ms] MboSets:31 BBOARDAUDIENCE:3 BULLETINBOARD:1 DEFAULTQUERY:1 MAXAPPS:2 MAXLA Mbos:565 BULLETINBOARD:1 DEFAULTQUERY:1 MAXAPPS:6 MAXLABELS:166 MAXMESSAG</p> <p># SQLs (1) [10 ms] MAXADMIN -&gt; select * from maxapps where app = 'PO'            # SQLs (1) [10 ms] MAXADMIN -&gt; select * from maxapps where app = 'PO'            # SQLs (1) [10 ms] WILSON -&gt; select * from bulletinboard where { ts '2011-09-07 11:38:03.484' } &gt;= post            # SQLs (1) [78 ms] WILSON -&gt; select * from defaultquery where app = 'PO' and userid = 'WILSON'            # SQLs (1) [10 ms] WILSON -&gt; select * from maxapps where (app = 'PO')            # SQLs (1) [16 ms] WILSON -&gt; select * from maxlabels where (app = 'PO')            # SQLs (1) [109 ms] WILSON -&gt; select * from maxmessages where lower(msggroup)= 'jspmessages'            # SQLs (1) [219 ms] WILSON -&gt; select * from maxmessages where lower(msggroup)= 'po'            # SQLs (1) [10 ms] WILSON -&gt; select * from maxpresentation where (app = 'PO')            # SQLs (1) [10 ms] WILSON -&gt; select * from persongroupteam where respartygroup = 'WILSON'            # SQLs (1) [10 ms] WILSON -&gt; select * from query where app = 'PO' and (owner = 'WILSON' or ispublic =            # SQLs (1) [10 ms] WILSON -&gt; select * from report where appname = 'PO' and toolbarsequence is not nul            # SQLs (1) [141 ms] WILSON -&gt; select * from report where reportname= 'po.rptdesign' and appname= 'PO            # SQLs (1) [15 ms] WILSON -&gt; select * from report where reportname= 'po_status.rptdesign' and appnam            # SQLs (1) [15 ms] WILSON -&gt; select * from report where reportname= 'poprint.rptdesign' and appname=            # SQLs (2) [41 ms] WILSON -&gt; select * from reportlookup where reportnum=505            # SQLs (2) [20 ms] WILSON -&gt; select * from reportlookup where reportnum=506            # SQLs (2) [20 ms] WILSON -&gt; select * from reportlookup where reportnum=508            # SQLs (4) [40 ms] WILSON -&gt; select * from wfapptoolbar where (appname = 'PO') order by toolbarsequ</p>
[localhost]/maximo/ui/login...app-maximo--null--null-null-null	<p># 127 stmts Total SQLs time[1730ms] MboSets:131 ACTIONSCFG:1 APPLICATIONAUTH:4 BBOARDAUDIENCE:6 BBOARDMSGSTA Mbos:24800 ACTIONSCFG:4 APPLICATIONAUTH:8178 BBOARDMSGSTATUS:2 BULLETINBO</p>
[localhost]/maximo/ui/maximo.jsp...app-maximo--1-po--click-null-mx563[R:4]	<p># 12 stmts Total SQLs time[758ms] MboSets:18 BBOARDAUDIENCE:3 BULLETINBOARD:1 COMPANIES:4 CONTRACT:2 DOCLINKS Mbos:45 BULLETINBOARD:1 COMPANIES:6 CONTRACT:2 DOCLINKS:1 MAXMESSAGES:23 OF</p>
[localhost]/maximo/ui/maximo.jsp...app-maximo--1-po--filter/ows--mx340	<p># 31 stmts Total SQLs time[455ms] MboSets:32 BBOARDAUDIENCE:3 BULLETINBOARD:1 PERSONGROUPTTEAM:1 POLINE:24 WF Mbos:55 BULLETINBOARD:1 PERSONGROUPTTEAM:4 PO:23 POLINE:24 WFAPPTOOLBAR:1 WF</p>
[localhost]/maximo/ui/maximo.jsp...app-maximo--1-startcntr--click-goto-mx44	<p># 1 stmts Total SQLs time[10ms] MboSets:1 MAXMODULES:1 Mbos:22 MAXMODULES:22</p>

# TIVOLI MONITORING AGENT FOR MAXIMO



## Maximo agent

- Tivoli Monitoring is a product that is independent of Maximo Asset Management.
- However, by using Tivoli Monitoring and the Monitoring Agent for Maximo, you can monitor aspects of your Maximo infrastructure and applications.
- The aspects that you can monitor include
  - server memory statistics
  - cron tasks
  - user connections
  - database connections
  - installed products and licenses, cron tasks, and other system information.



# IBM SMARTER PERFORMANCE ANALYSIS SUITE



## IBM Smarter Performance Analysis Suite

- IBM Smarter Performance Analysis Suite is a tool aimed to make performance analysis manageable.
- Performance analysis is all about data, I mean, large amount of data. Sometime there might be days of application log for us to sort out the reason why it slowed down or even crashed. Other times we might have to figure out what's wrong with the slow database server and queries, given a few hundred mega bytes of database snapshot data.
- Humans are good at detecting peculiarities and finding out the symptoms of problems, but our eyes are not made for scanning data.
- Let the computer do what it does best, so we can focus on what we do best.



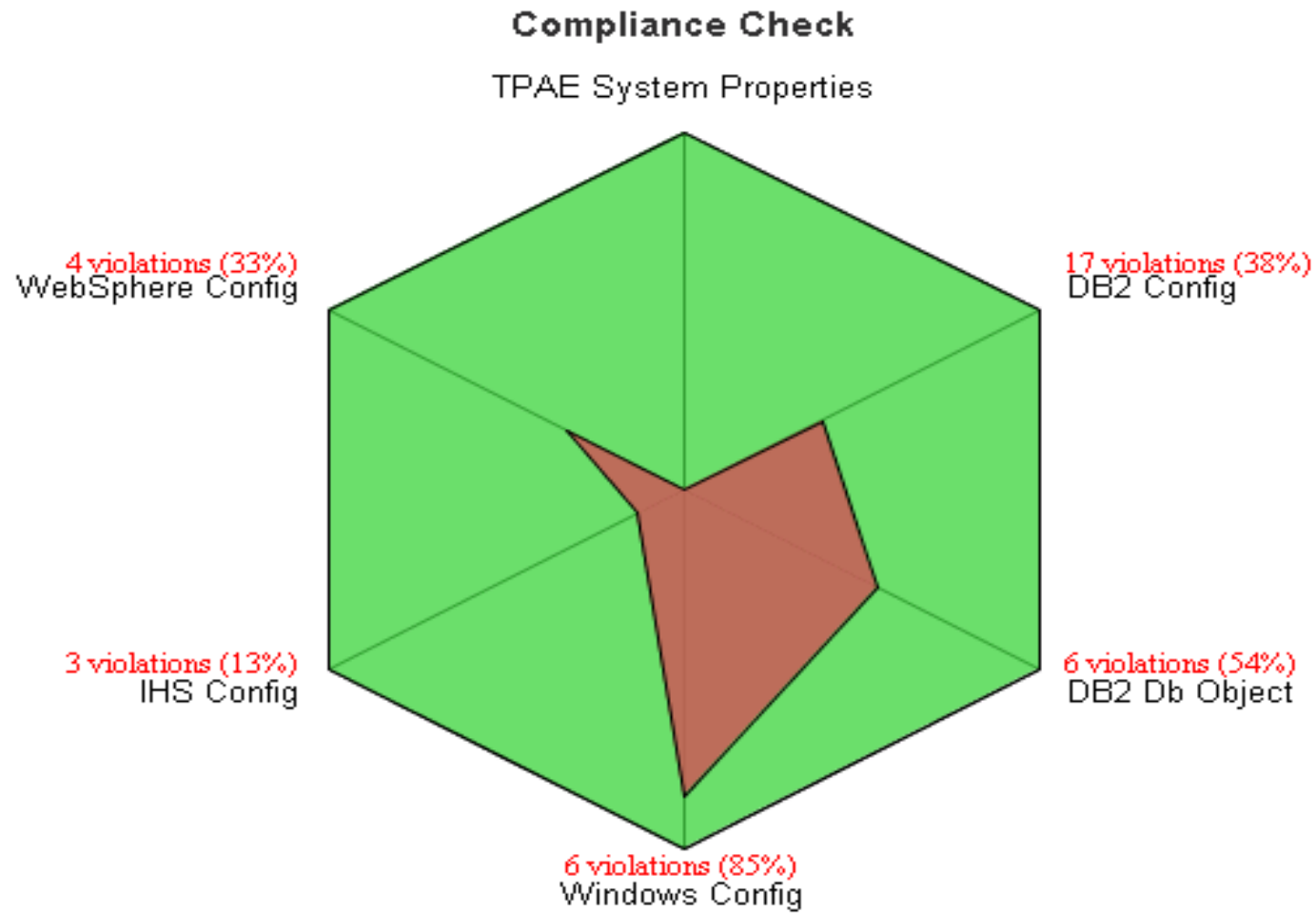
# IBM Smarter Performance Analysis Suite

## Features

- Import all kinds of performance data for analysis. Some examples: DB2 snapshot, Java verbose GC output, Java thread dumps.
- Import software/middle-ware configuration for compliance checking. Some examples: configuration of DB2, Oracle, WebSphere, and operating systems.
- Provide a rule engine for defining alerts to detect symptoms from the imported data. An out-of-box pre-defined set of rules are provided, based on common performance best practice of supported software and middle-ware.
- NB: Good practice is to enable verboseGC



# Maximo check-up



# MUST GATHER



## Must gather

- For every problem, collecting data can aid in problem determination and save time resolving Problem Management Records (PMRs).
- Gathering this data before calling IBM support will help you understand the problem and save time analyzing the data.
- Collecting data early, even before opening the PMR, helps IBM Support quickly determine if:
  - Symptoms match known problems (rediscovery).
  - There is a non-defect problem that can be identified and resolved.
  - There is a defect that identifies a workaround to reduce severity.
- In the event of a code defect, locating root cause can speed development of a code fix.



## WebShpere files

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- It's important to always send to IBM Support the...
  - SystemOut.log
  - SystemErr.log
- There are times that “things” show up in those files, but the Maximo logs

# WIKI'S





IBM. ▾

developerWorks® Technical topics Evaluation software Community Events

Public Wikis My Wikis

IBM Maximo Asset Management

- Home
  - ▶ Overview and planning
  - ▶ System requirements
  - ▶ Installing, upgrading, and migratin
  - ▶ Integrating
  - ▶ Configuring and customizing
  - ▶ Best practices
  - ▶ Security
  - ▶ Reporting
  - ▶ Performance and tuning
  - ▶ Troubleshooting
  - Additional resources
  - ▶ Other Maximo products

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## Home

Updated Feb 27 by [charglen](#) | Tags: [asset](#), [management](#), [maximo](#)

Page Actions ▾

## Welcome to the IBM Maximo Asset Management wiki

The **IBM® Maximo® Asset Management wiki** is a collaborative repository of technical information about IBM Maximo. Maximo Asset Management is an Enterprise Asset Management system that provides comprehensive support for asset. In this wiki, you can find information about IBM Maximo Asset Management, add-ons to this product, and Industry Solutic

### Welcome to our new wiki platform.

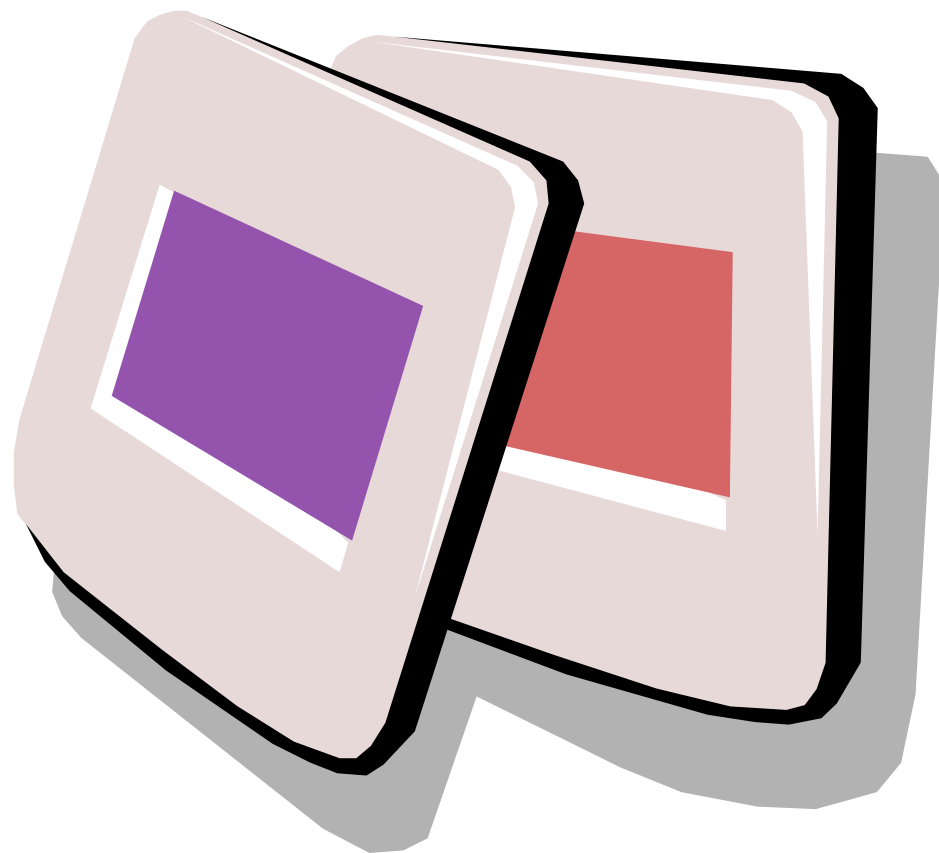
The wiki has a new user interface, and some content has been restructured. Many of our navigation categories are the information.

Articles that were on the Best Practices page on the old wiki have been reorganized to align with functions in Maximo As management, look for **Work management** in the Best practices section of the wiki.

Look for information about Maximo industry solutions and product add-ons in **Other Maximo products**.



## Demonstration time



# REFERENCES



# References

- Collecting Data: Readme first table of contents:
  - [Gathering general information](#)
  - [Manually gathering general information](#)
  - [Gathering component specific information](#)
  - [Submitting information to IBM Support](#)
- V7.5x Designer 371 Report Development Guide - Version 3 <http://www-01.ibm.com/support/docview.wss?uid=swg21605970&aid=1>
- Maximo Asset Management - Published docs <http://pic.dhe.ibm.com/infocenter/tivihelp/v49r1/index.jsp?topic=%2Fcom.ibm.mam.doc%2Fwelcome.html>
- Maximo Asset Management Wiki <https://www.ibm.com/developerworks/mydeveloperworks/wikis/home/wiki/IBM%20Maximo%20Asset%20Management?lang=en>
- Performance monitoring and tuning tools <https://www.ibm.com/developerworks/wikis/display/maximo/Performance+and+Tuning>



## Additional references...

- PerfMon <http://www-01.ibm.com/support/docview.wss?uid=swg21577811>
- IBM Tivoli Monitoring Agent for Maximo <https://www-304.ibm.com/software/brandcatalog/ismlibrary/details?catalog.label=1TW10TM7S>
- ISA lite & workbench <http://www-01.ibm.com/software/support/isa/>
- Maximo Agent [http://www-01.ibm.com/support/docview.wss?rs=3214&context=SSLKT6&q1=itm&uid=swg24025477&loc=en\\_US&cs=utf-8&lang=en](http://www-01.ibm.com/support/docview.wss?rs=3214&context=SSLKT6&q1=itm&uid=swg24025477&loc=en_US&cs=utf-8&lang=en)
- Tivoli Performance Viewer
- IBM Smarter Performance Analysis Suite <https://www.ibm.com/developerworks/mydeveloperworks/groups/service/html/communityview?communityUuid=28cb6d68-ab67-4203-96f9-5538e654a5ff>