



Maximo Archiving and ITM for Maximo Solution Health



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Session Overview

- Archive Business Need
 - Technology Overview
 - Demo
- Monitoring business need
 - Overview of Maximo/ITM integration
 - Agent Overview
 - System requirements
 - Agent Usage Scenarios
 - Setup and Configuration
- Questions?



Customer Pain Point

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- Production database growth
 - Example, 65000 work orders per month (supply chain development partner); 1 million+ work orders in a year
- Maximo impact:
 - Performance degradation in production
 - Costly hardware upgrades
 - Costly, long running upgrade process
- Customer need:
 - Archive historical data
 - Preserve application performance in production
 - Smoother, faster upgrade to newer product release



Archiving needs

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- Customer feedback, Maximo Advisory Council round tables
- Offline storage of application data
 - Data that is currently historical and does not change
 - Data usually deleted from source tables
- Application data context should be preserved
 - Complete business object data
- Application data should remain available for reporting/auditing
 - Offline storage should behave as data source
- Benefit
 - Production environment runs optimally
 - Faster upgrades
 - Hardware costs reduced

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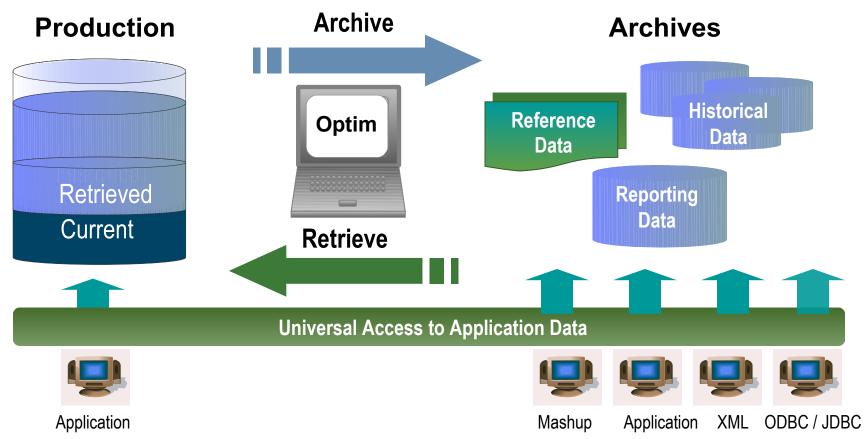
IBM Optim[™]

- Selected Optim to enable Maximo archiving
 - IBM acquired Princeton Softech in 2007
 - Part of Information Management brand
 - Optim is key data growth solution from Princeton Softech
 - Best of Breed: Competitors include Applimation, HP-OuterBay, Solix, Compuware
 - Optim offers archiving solutions for packaged applications
 - Oracle E-Business
 - PeopleSoft
 - Siebel
 - JD Edwards
 - Current IBM Optim release 7.x
 - Mature product line

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Optim Data Growth Solution: Archiving



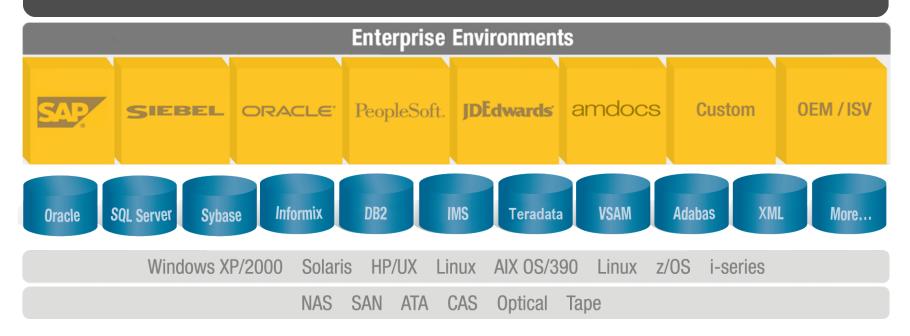
- Complete Business Object provides historical reference snapshot of business activity
- Storage device independence reduces storage costs
- Immutable file format enables data retention compliance



Enterprise Environments

IBM Integrated Data Management

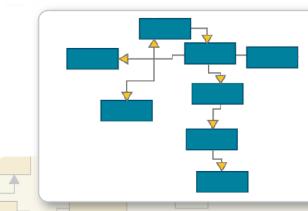
Database Design, Development & Administration, Data Growth, Data Privacy, Test Data Management, Application Upgrades & Retirements, Data Retention & E-Discovery



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Archive the Right Set of Data Referential Integrity – the Complete Business Object



- Represents application data record payment, invoice, customer
 - Referentially-intact subset of data across related tables and applications; includes metadata
- Provides "historical reference snapshot" of business activity



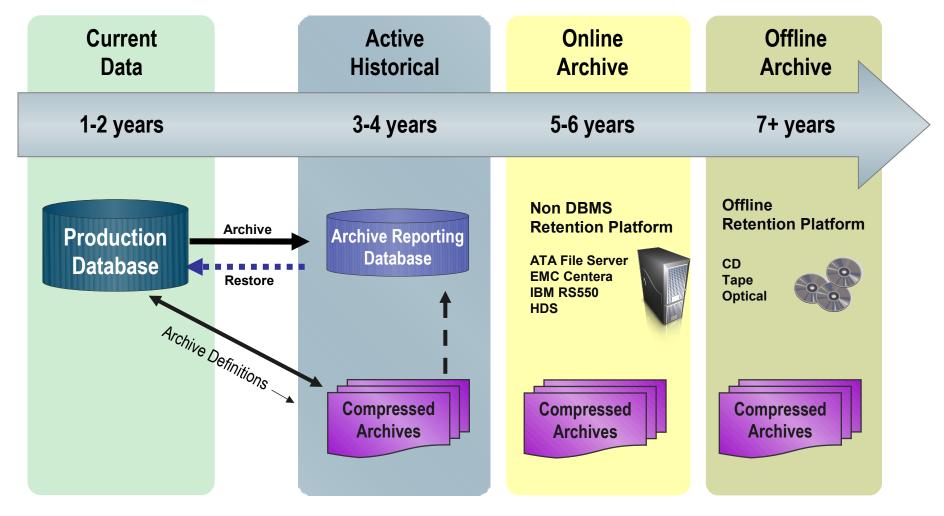
Extract, Store and Restore

- Extract: Identify and extract business objects across multiple related applications, databases and platforms
- Store: Store immutable business objects independent of infrastructure – any hardware device or platform
- Restore: Restore business objects to any other database or application for reporting or native application access. Choose precisely which items to restore – a single transaction record, a year's worth of data, or any other range or parameter you specify.

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Extract, Store and Restore Store in Any Environment





Universal Access



- Native application access
 - Familiar screens and processes
- Application independent access
 - Industry standard methods: SQL, ODBC/JDBC, XML
 - IBM Mashups
 - Portals
 - Report writers: Crystal Reports, Cognos, Business Objects, Discoverer, Actuate
 - Desktop formats: Excel, CSV, MS Access
 - Database formats

Access Any Record, Anytime, Anywhere!

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Optim for Maximo

- Enabling Maximo archiving capability with Optim
- Out of the box archive access definitions (policies)
 - Policies can be changed to fit requirement
 - New policies can be created
 - Configuration no coding
- Versions
 - 6.2.x
 - 7.1.x
 - 7.5 (leverages the integration framework to extend policies)
- Targeting high-growth applications:
 - Work Orders
 - Workflow Transactions
 - POs
 - PRs
 - Invoices
 - Assets
 - SR Tickets (7.x EAM only)
- No Maximo code Adapter is for Optim to connect to a Maximo database
- Connects directly to the database is not aware of Maximo business objects





Typical Customer Data

Maximo Standard Access Definitions

Custom Tables and Industry Solutions



Archive Implementation

- Import Archive Definitions into Optim
- Copy definitions to make customizations
 - Modify selection criteria
 - Add tables to access definitions
 - Add relationships
- Schedule archive process
- Update restore process to restore archive files created





Demonstration

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Access Definition

				Table Specifications
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Archive-Purge

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Restore

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Optim for Maximo time-frame

- Available today
 Version 6.2, 7.1 and 7.5
- Offered as an add-on
- Two Packages
 - Maximo Archiving with Optim Data Growth Solution
 - IBM Optim Data Growth Solution
 - Maximo access definitions
 - Instructions to configure Optim for Maximo usage
 - Maximo Archiving for Optim Data Growth Solution
 - Maximo access definitions
 - Instructions to configure Optim for Maximo usage



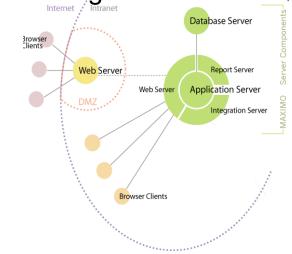
Using ITM to Manage Maximo Solution Health

- Overview of Maximo/ITM integration
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Maximo Technology Architecture

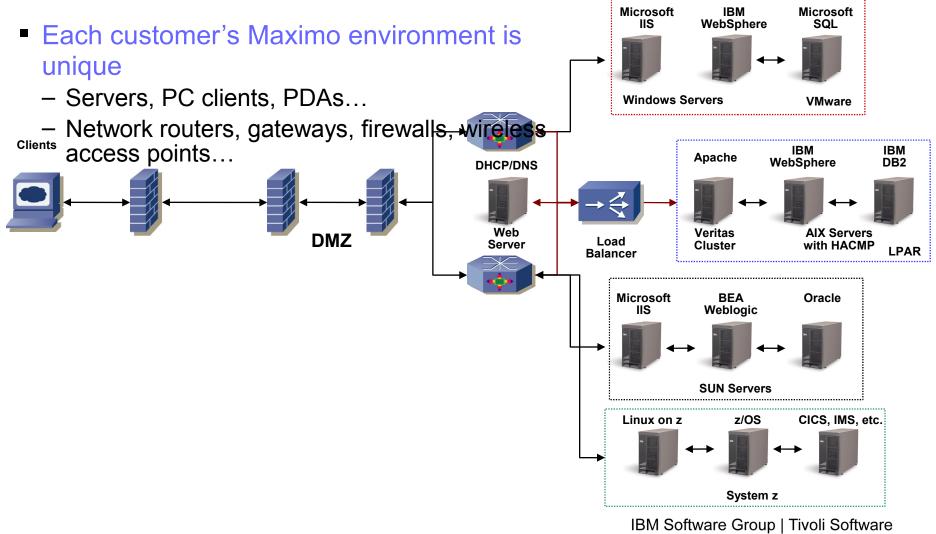
- Web-based n-tier architecture
 - Leverages the latest Internet standards and technologies
 - Web services
 - HTTP(S)
 - J2EE
 - HTML
 - XML
- Highly Scalable Architecture
 - Horizontal and vertical scaling
 - Clustering, load-balancing and failover support
 - Scales from small, single-site deployments to large, multi-site global deployments
 - Offers performance and resiliency







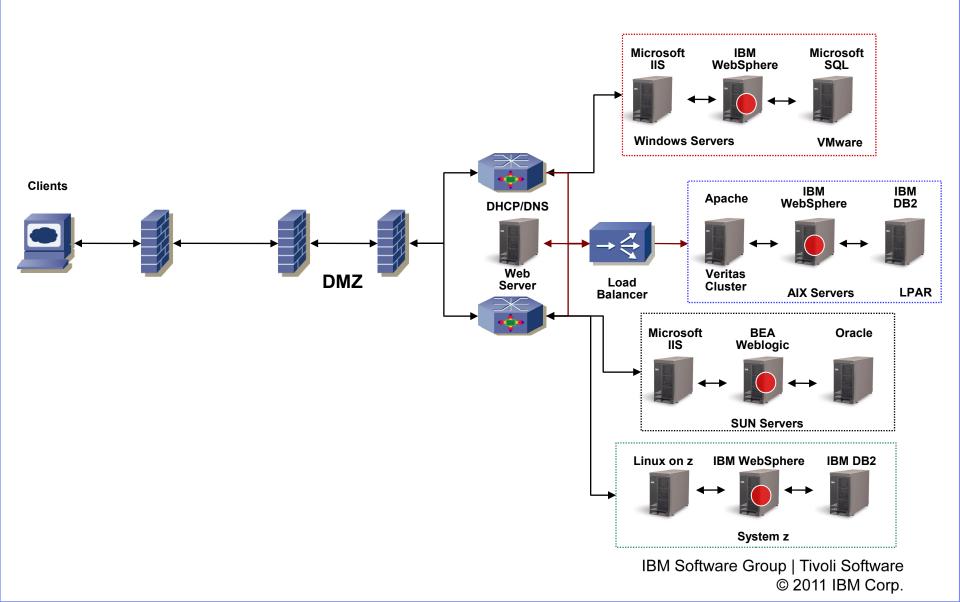
Customer Environment



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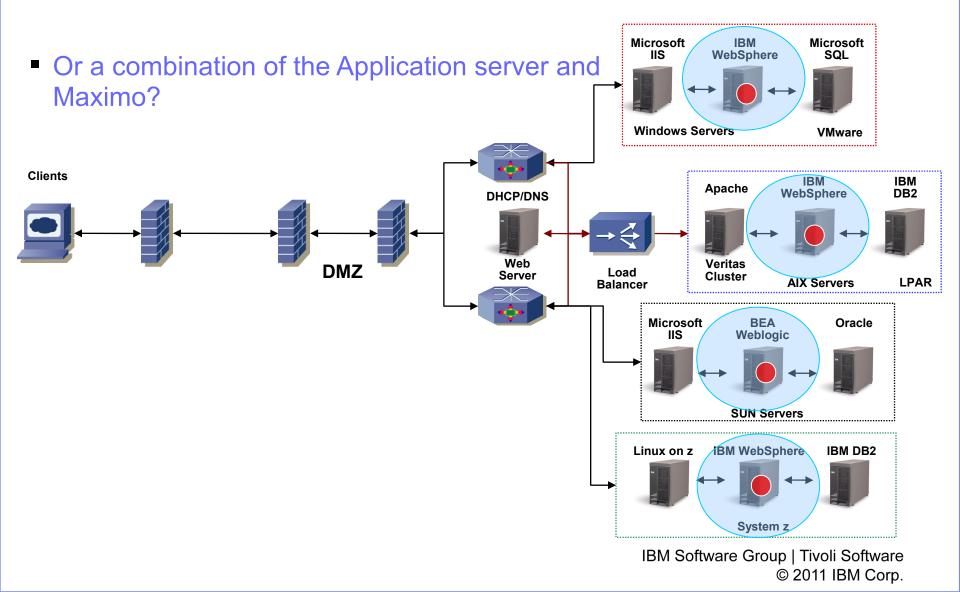


Is it Maximo?



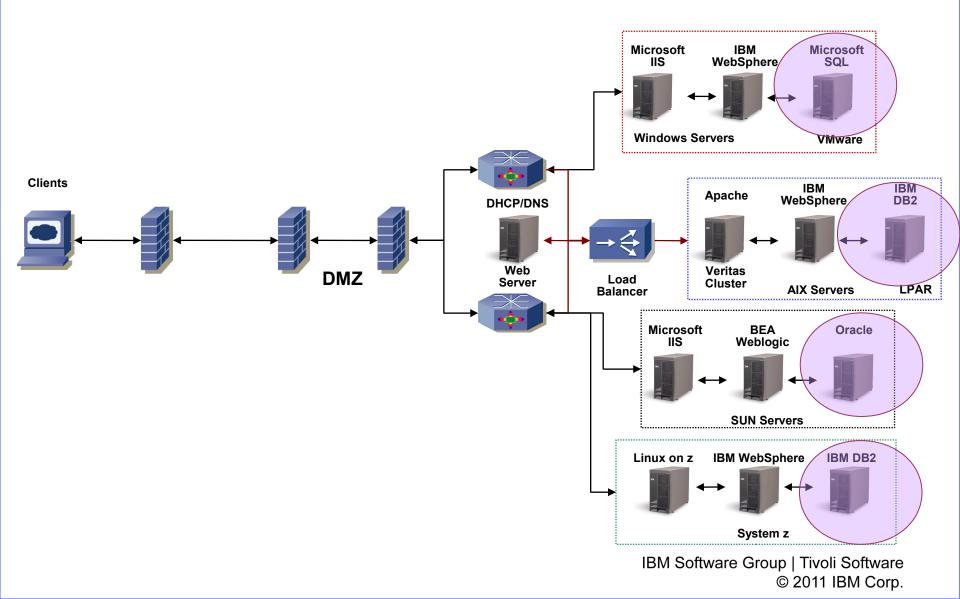


Is it the Application Server?



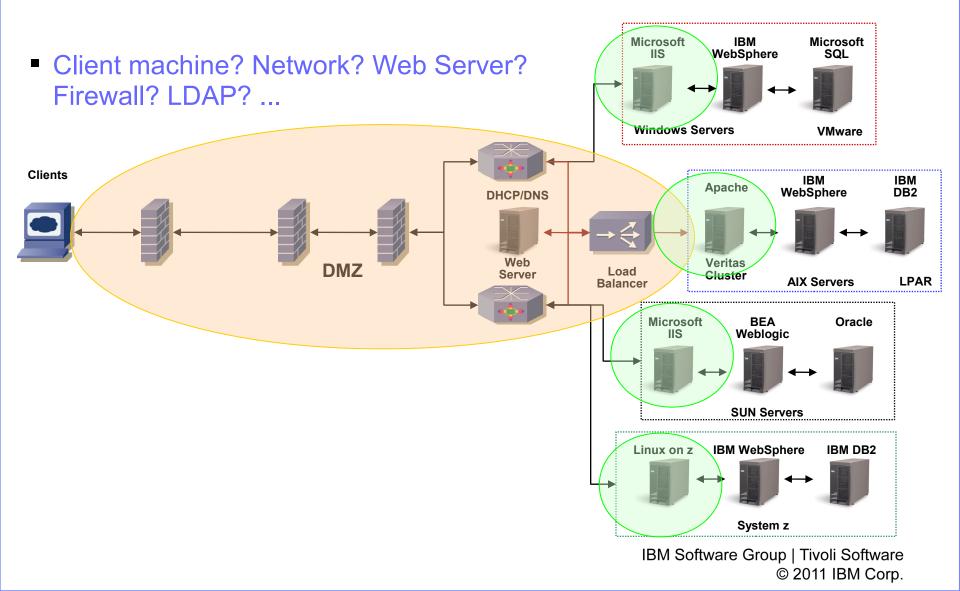


Is it the Database Server?





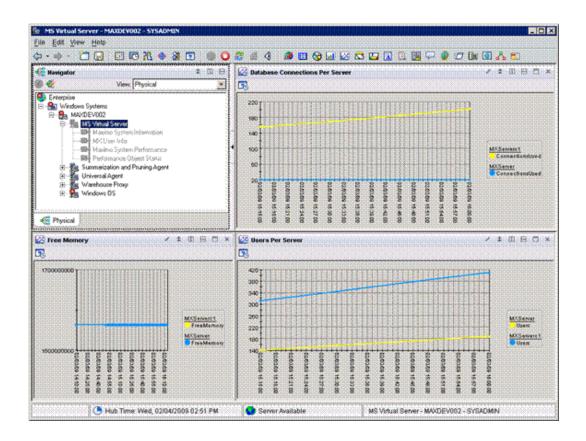
Or something else?





Maximo Agent

- Metrics monitored
 - System Information
 - User Sessions



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Maximo Agent System Information

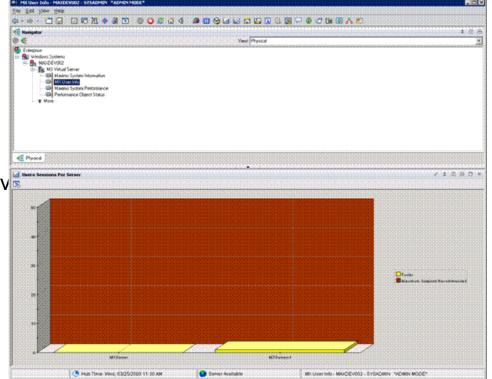
- Metrics monitored
 - Server Information
 - Installed Applications
 - License
 - Licensed products list
 - Type of license
 - Installed Products
 - Installed products list
 - Version information
 - Cron Tasks
 - Cron tasks list
 - Active cron tasks

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Maximo Agent User Node

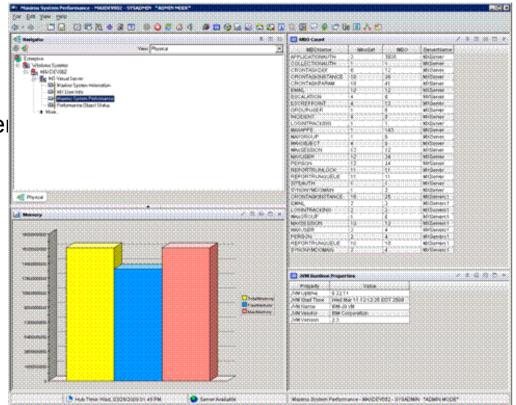
- Metrics monitored
 - Current number of users vs recommended number
 - Yellow bars = number of users
 - Red background = threshold per server





Maximo Agent System Performance Node

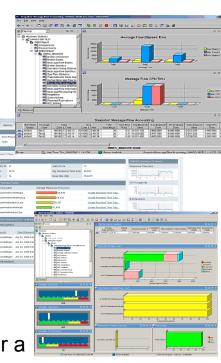
- Metrics monitored
 - Memory statistics for each server
 - MBO Count
 - Name of each MBO
 - Number of instances
 - JVM Runtime properties
 - JVM information
 - Version
 - Uptime





J2EE Application Performance Diagnosis

- Monitor high-level application health status
 - Tier by tier analysis
 - Correlation to remote EJB containers
- Identify J2EE/J2SE performance problems
 - Slow or Hung requests
 - Intermittent application slow downs
- Monitor essential application resources
 - Throughput
 - Heap Usage
 - CPU usage
 - Garbage Collection
- Real time deep dive diagnosis
 - Display all in-flight requests, as well as details for a single request
 - Memory leak analysis
 - Method and stack "traces" to display the detailed execution flow of a request
 - Lock Contention Analysis on serialized methods





Maximo Monitoring Agent Prerequisites

IBM Tivoli Monitoring (ITM)

- Version 6.2.1 or higher
 - Tivoli Enterprise Monitoring Server (TEMS)
 - Tivoli Enterprise Portal (TEP)
 - Tivoli Enterprise Monitoring Agents (OS Agent)
 - Tivoli Data Warehouse
 - Tivoli Enterprise Portal Server (TEPS)
- Supported OS Platforms
 - Currently Windows only
 - Maximo on all supported platforms
- Available in Maximo 7.5
 - Can download only this portion don't need to upgrade to use it
 - Bundle consisting of:
 - Tivoli ITM console, framework and data warehouse
 - o OS agents
 - Database agents
 - o J2EE or WAS agents
 - Maximo agent supports versions 6.2.5 or 7.1.1.6 and higher
 - Licensed for use to monitor Maximo environment only
 - No additional charge for entitled customers
 - Also available as a 'Feature Pack' on Fix Central for version 6.2







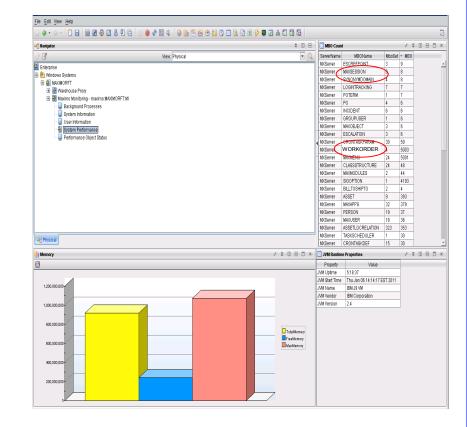
Agent Usage Scenarios



Tivoli, software

Poor performance scenario #1

- Users are complaining WorkOrder App is slow
- Though there are only 6 user sessions there are over 5,000 instances of the WORKORDER object
- Resolution provide this information with your PMR for guidance on app server tuning (garbage collection) or development



Tivoli. software



Situation and Expert Advice

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						a developer should review the code.
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Poor performance scenario #2

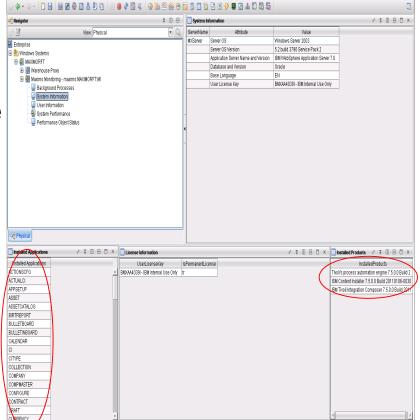
- System has 100 users logged on from 9 to 5
- There are 200 cron tasks configured to run every 60 seconds 24 hours a day
- Resolution Look at your cron task scheduling and see what modifications may be possible

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Havigator		± 0 B	Crop Tasks			/ ¥ 🛛 🗄 🛛
1	View. Physical	. Q	CronTaskName	InstanceName	Isache	
Enterprise			ESCALATION	E901037	N	
Enterprise		/	REPORTLOCKRELEASE	REPORTLOCKRELEASE1	Y	
		/	REPORTUSAGECLEANUP	REPORTUSAGECLEANUP1	Y	
🗟 🎒 MAQMORFT			LDAPSYNC	LDAPSYNC01	N	
🕑 🔯 Warehouse Prov			KPICronTask	KPINONREALTIME	N	
Maximo Monitoring - maximo MAXUMORFT:MI		/	JMSQSEQCONSUMER	SEQQOUT	N	
Background Processes			JMSQSEQCONSUMER	SEGGIN	N	
System Information			SwSuiteCronTask	SwSuiteCronTask1	N	
- 🖳 User Information			ReconciliationCronTask	ReconTaskSN	N	
- 🖉 System Performance			ESCALATION	ESCLEASSTDUE	N	
🖳 🖳 Performance Object Status			ESCALATION	E901006	N	
		1	ESCALATION	E9C1008	Y	
		1	ESCALATION	ESC1010	N	
			ESCALATION	E901013	N	
			ESCALATION	E901016	N	
			ESCALATION	E901015	N	
			ESCALATION	E901017	Y	
			ESCALATION	E9C1019	Y	
			ESCALATION	ESC1027	N	
			ESCALATION	E901028	N	
			ESCALATION	ESC1029	N	
			ESCALATION	E901030	N	
			ESCALATION	ESC1031	N	
			ESCALATION	ESC1012	N	
2 Physical			ESCALATION	ESC1012	N	
			BBCron	BBCRON1	Y	
Escalation Failure Loo		/ ¥ 0 8 0 ×	ReconciliationCronTask	ReconRAMCompliance	N	
	1		ReconciliationCronTask	RAWnonCompliance	N	
ObjectName StatusMemo Escalation StatusDate			ReconciliationCronTask	Bedrecon	N	
ORKORDER Email Not Sent 1037 1/18/11 5:			ReconciliationCronTask	ReconDiskSize	N	
IORKORDER Email Not Sent 1037 1/18/11 5:			ReconciliationCronTask	ReconOfficePool	N	
IORKORDER Email Not Sent 1037 1/18/11 5:			ReconciliationCronTask	ReconDiskAvail	N	
IORKORDER Email Not Sent 1037 1/18/11 5:			VMMSYNC	VMMSYNC01	N	
			ESCALATION	ESCESCELTNEXP	Y	
			ReconciliationCronTask	ReconDPALink	N	
			ReconciliationCronTask	ReconciliationCronTask1	N Y	
			AsynchrmediateJobCron	Asynchromediate	<u>·</u>	
			AsyncScheduledJobCron	AsyncScheduled	Y	
			Async.lobCleanupCron	AsyncJobCleanup	Y	
			WOMaterialStatusUpdateCronTask		Y	
			AssetTopoCatheCron	AssetTopoCacheCron01	Y	
			ImResResTypeUpdateCronTask	ReservationResTypeUpdate	Y	
			REPORTOUTPUTCLEANUP	REPORTOUTPUTCLEANUP	Y	
			ConsignmenthvoiceCronTask	Create consignment invoices.	Y	
			ESCALATION	ESCPROMOTECOMP	Y	
			ESCALATION	ESCPROMOTENETD	Y	
			ESCALATION	ESCPROMOTENETP	Y	
			SWSATALOGIMPORT	SWKBT	N	
			TADAZINORT	TAD4ZCATALOG	A	

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Applications are not showing up

- System Information node shows
 - all products licensed
 - all applications enabled
- Resolution Verify the applications and re-install license packs, if necessary.







Escalations not firing as expected

- Background Process node shows escalation failures and reason codes
- Resolution Review the logs and re-configure the escalations or provide them to support with your PMR.

File Edit View Help						
	8 2 8 9 6 11 8 4 8 10 8 6 9 1 0		6			
		± 0 B	1_			/ ‡ [
) 7	View Physical	- u u - Q	CronTaskName	InstanceName	IsActive	
	new, rijsta		ESCALATION	ESC1037	N	
Enterprise			REPORTLOCKRELEASE	REPORTLOCKRELEASE1	Y	
🗄 🎦 Windows Systems			REPORTUSAGECLEANUP	REPORTUSAGECLEANUP1	Y	
🗟 🕌 MAXIMORFT			LDAPSYNC	LDAPSYNC01	N	
🖲 🛃 Warehouse Proxy			KPICronTask	KPINONREALTINE	N	
🗟 🛃 Maximo Nonitoring - max			JMSQSEQCONSUMER	SEGOOUT	N	
Background Process			JMSQSEQCONSUMER	SEGGIN	N	
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– 🚽 User Information			ReconciliationCronTask	ReconTaskSN	N	
- 🎍 System Performance			ESCALATION	ESCLEASSTDUE	N	
🗏 🖳 Performance Object:	ðtatus		ESCALATION	ESC1006	N	
			ESCALATION	ESC1008	Y	
			ESCALATION	ESC1010	N	
			ESCALATION	ESC1013	N	
			ESCALATION	ESC1016	N	
			ESCALATION	ESC1015	N	
			ESCALATION	ESC1017	Y	
			ESCALATION	ESC1019	Y	
			ESCALATION	ESC1027	N	
			ESCALATION	ESC1028	N	
			ESCALATION	ESC1028	N	
			ESCALATION	ESC1029	N	
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og Physical			ESCALATION	ESC1012 ESC1036	N	
-0 . 10			BBCron	EBCRONI	Y	
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WORKORDER Email Not Sent 10			ReconciliationCronTask	ReconDiskSize	N	
WORKORDER Email Not Sent 10			ReconciliationCronTask	ReconOfficePool	N	
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WORKORDER Email Not Sent 10	137 1/18/11 5		VMMSYNC	VINISYNCOI	N	
_			ESCALATION	ESCESCELTNEXP	Y	
	_		ReconciliationCronTask	ReconDPALink	N	
			ReconciliationCronTask	ReconciliationCronTask1	N	
			AsynchrmediateJobCron	Asyncimmediate	Y	
			AsyncScheduledJobCron	AsyncScheduled	Y	
			AsyncJobCleanupCron	AsyncJobCleanup	Y	
			WOMaterialStatusUpdateCronTask		Y	
			AssefTopoCacheCron	AssetTopoCacheCron01	Y	
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			REPORTOUTPUTCLEANUP	REPORTOUTPUTCLEANUP		
			ConsignmentmoiceCronTask	Create consignment invoices.		
			ESCALATION		Y Y	
				ESCPROMOTECOMP		
			ESCALATION FROM	ESCPROMOTENETD	Y	
			ESCALATION CONTRACT	ESCPROMOTENETP	Y	
			SWCATALOGIMPORT	SWKET	N	





Install and Configuration Considerations



Confirm ITM Setup

- Can you connect via TEMS?
- Can you deploy agents?
- Is your version of ITM supported?



Configuring Maximo Monitoring Agent

- Can run over HTTP or HTTPS
- User needs to be able to log in to read data, not write
- Java Home Directory can be anywhere spaces are not supported in the name
 - c:\Program Files\Java60
 not supported
 - c:\Progra~1\Java60 supported

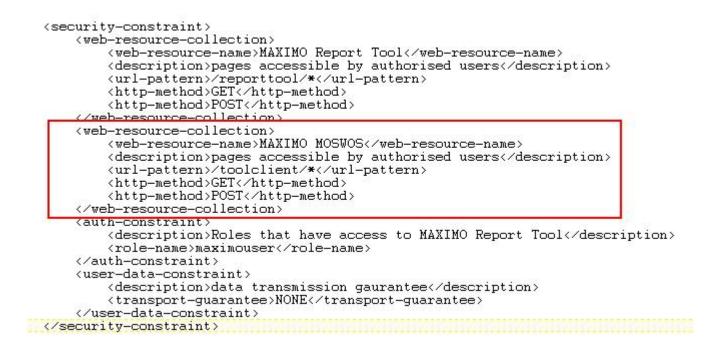
bu must specify several configuration parameters. Protocol http Host qawin04.swg.usma.ibm.com Port 9995 User maxadmin Password ******* *Confirm Password *******	Agent Configuration	
Protocol http Host qawin04.swg.usma.ibm.com Port 9995 User maxadmin Password *******	og Configuration Maximo Configuration	
http Host qawin04.swg.usma.ibm.com Port 9995 User maxadmin Password <u>*Confirm Password</u> *******	ou must specify several configuration parameters.	
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qawin04.swg.usma.ibm.com Port 9995 User maxadmin Password ******* *******	http	
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9995 User maxadmin Password *Confirm Password *****	qawin04.swg.usma.ibm.com	
User maxadmin Password [*] Confirm Password *****	*Port	
maxadmin Password *Confirm Password *****	9995	
Password *Confirm Password ******** ********	User	
*****	maxadmin	
	Password	*Confirm Password
Java Home Directory	* * * * * * *	* * * * * * *
	Java Home Directory	
C:\IBM\Java60	C:\IBM\Java60	
		OK Cance

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LDAP (Lightweight Directory Access Protocol) Support

- LDAP and Secure LDAP are supported but need additional configuration
- The deployment descriptor (mboweb/web.xml) file needs to be edited





Troubleshooting and Logging

- Maximo Monitoring Agent is logger enabled
 Specific to the agent
- All exceptions and errors are logged
- Logs are located under
 - <ITM_HOME>\TMAITM6\logs\maximo

🚉 C:\IBM\ITM\TMAITM6\logs\maximo			
<u>File Edit View Favorites Tools Help</u>	1		
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Address 🛅 C:\IBM\ITM\TMAITM6\logs\maximo			
Folders	× Name A	Size	Туре
E CMA	moswos_agent1.log	2,624 KB	Text D
E CMS	moswos_agent1.log.1	10,244 KB	1 File
E CNB	moswos_SSLTrustMgr.log	2,535 KB	Text D
	moswos_SSLTrustMgr.log.1	10,246 KB	1 File
🗉 🫅 CNPS			
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Questions?