



NASTEL

Driving Business Transaction Performance ®



AutoPilot®

*Middleware-Centric
Application Performance
Management*



GUIDE Share France

Une association indépendante d'utilisateurs IBM

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AutoPilot® M6 Overview



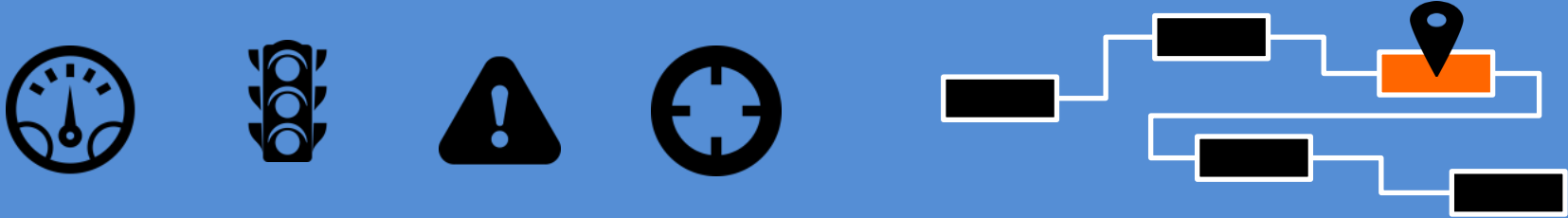
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Driving Business Transaction Performance®

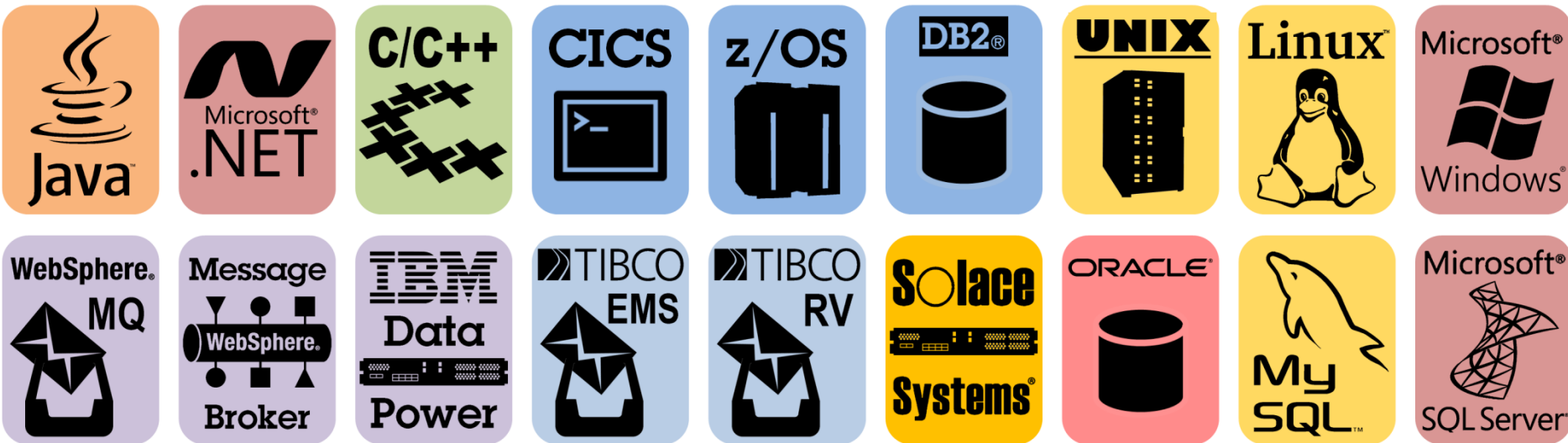
www.nastel.com

Middleware-Centric Application Performance Monitoring

Real-time Analytics, Application Performance & Transaction Monitoring



AutoPilot® CEP Policy Engine



AutoPilot® CEP Plugins



AutoPilot® M6 for WebSphere MQ Overview



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Driving Business Transaction Performance ®

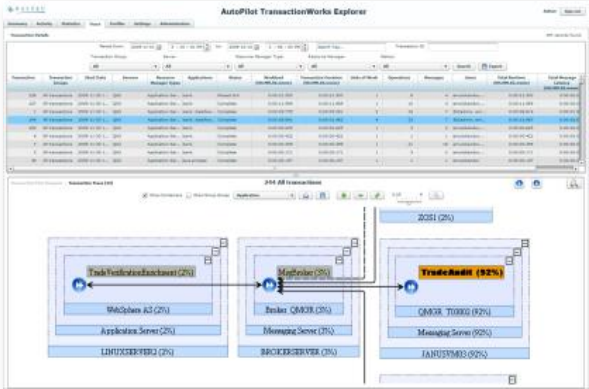
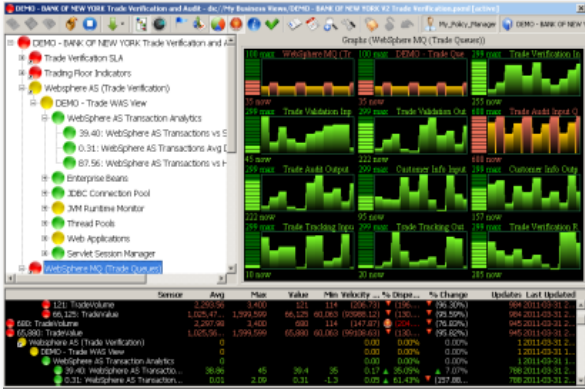
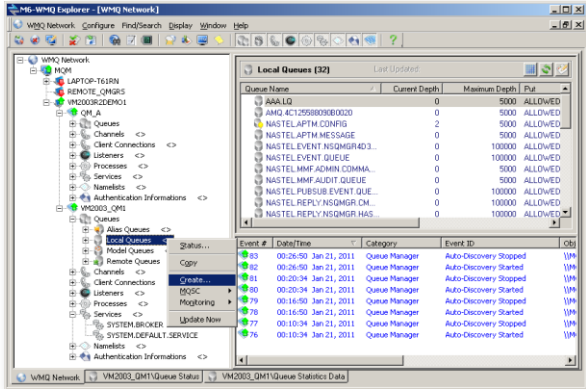
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AutoPilot® for WebSphere MQ - 3 x "M"

WebSphere® MQ MANAGEMENT

WebSphere® MQ MONITORING

WebSphere® MQ MESSAGE TRACKING



WebSphere® MQ

z/OS

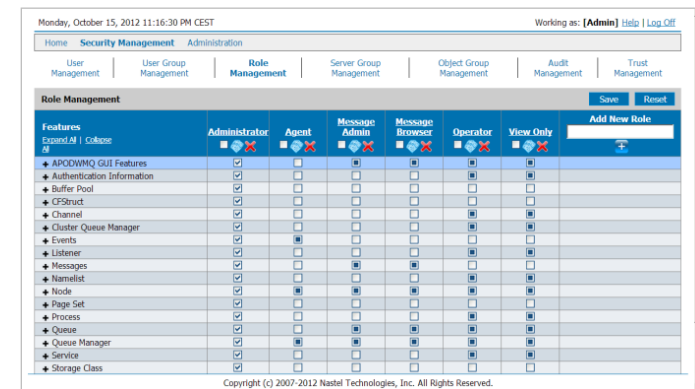
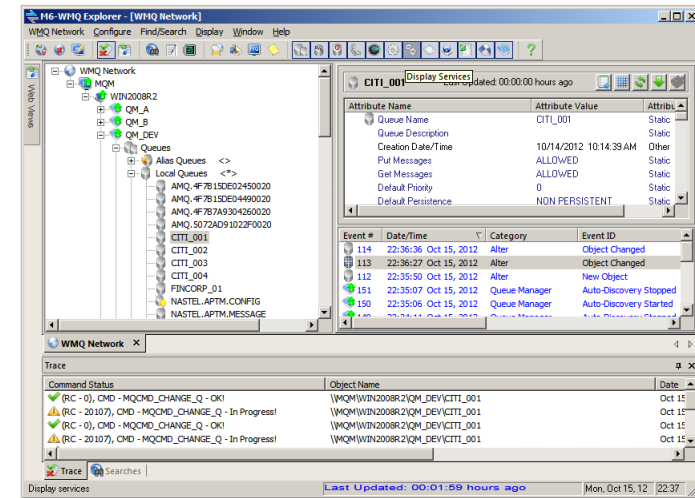
UNIX
LINUX

WINDOWS



WebSphere® MQ MANAGEMENT

- Auto discovery of WMQ objects
- Automatic Configuration Management
- Audit trail & Rollback of changes to WMQ objects
- Agent and Agent-less management
- Message Management & Search
- View, Edit, Move, Copy, Delete, Re-route, DLQ handling
- Secure, Self Service WMQ Management - worry-free, highly *controlled* delegation of selected admin tasks to Application Developers and Operations teams



AutoPilot® for WebSphere MQ : Management

The screenshot displays the M6-WMQ Explorer - [WMQ Network] application window. The interface includes a menu bar (WMQ Network, Configure, Find/Search, Display, Window, Help), a toolbar, and a left-hand tree view showing the hierarchy of the WMQ Network. The tree view shows the following structure:

- WMQ Network
 - MQM
 - WIN2008R2
 - QM_A
 - QM_B
 - QM_DEV
 - Queues
 - Alias Queues <>
 - Local Queues <*>
 - AMQ.4F7B15DE02450020
 - AMQ.4F7B15DE04490020
 - AMQ.4F7B7A9304260020
 - AMQ.5072AD91022F0020
 - CITI_001**
 - CITI_002
 - CITI_003
 - CITI_004
 - FINCORP_01
 - NASTEL.APTM.CONFIG
 - NASTEL.APTM.MESSAGE

The right-hand pane displays the details for the selected queue, CITI_001. The details are organized into two sections: Attributes and Events.

Attributes:

Attribute Name	Attribute Value	Attribute Type
Queue Name	CITI_001	Static
Queue Description		Static
Creation Date/Time	10/14/2012 10:14:39 AM	Other
Put Messages	ALLOWED	Static
Get Messages	ALLOWED	Static
Default Priority	0	Static
Default Persistence	NON PERSISTENT	Static

Events:

Event #	Date/Time	Category	Event ID
114	22:36:36 Oct 15, 2012	Alter	Object Changed
113	22:36:27 Oct 15, 2012	Alter	Object Changed
112	22:35:50 Oct 15, 2012	Alter	New Object
151	22:35:07 Oct 15, 2012	Queue Manager	Auto-Discovery Stopped
150	22:35:06 Oct 15, 2012	Queue Manager	Auto-Discovery Started
149	22:34:11 Oct 15, 2012	Queue Manager	Auto-Discovery Stopped

The bottom section of the window displays a trace of commands. The trace shows the following commands and their status:

Command Status	Object Name	Date
✓ (RC - 0), CMD - MQCMD_CHANGE_Q - OK!	\\MQM\\WIN2008R2\\QM_DEV\\CITI_001	Oct 15
⚠ (RC - 20107), CMD - MQCMD_CHANGE_Q - In Progress!	\\MQM\\WIN2008R2\\QM_DEV\\CITI_001	Oct 15
✓ (RC - 0), CMD - MQCMD_CHANGE_Q - OK!	\\MQM\\WIN2008R2\\QM_DEV\\CITI_001	Oct 15
⚠ (RC - 20107), CMD - MQCMD_CHANGE_Q - In Progress!	\\MQM\\WIN2008R2\\QM_DEV\\CITI_001	Oct 15

The status bar at the bottom of the window displays the following information:

- Display services
- Last Updated: 00:01:59 hours ago
- Mon, Oct 15, 12 22:37

AutoPilot® for WMQ : Highly Granular Security

Monday, October 15, 2012 11:16:30 PM CEST

Working as: **[Admin]** [Help](#) | [Log Off](#)

[Home](#) [Security Management](#) [Administration](#)

User
Management

User Group
Management

**Role
Management**

Server Group
Management

Object Group
Management

Audit
Management

Trust
Management

Role Management

Save

Reset

Features Expand All Collapse All	Administrator	Agent	Message Admin	Message Browser	Operator	View Only	Add New Role
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
+ APODWMQ GUI Features	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Authentication Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Buffer Pool	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ CFStruct	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Cluster Queue Manager	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Listener	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Messages	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Namelist	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Node	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Page Set	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Process	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Queue	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Queue Manager	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Service	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
+ Storage Class	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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AutoPilot® On-Demand for WebSphere MQ

AutoPilot On-Demand for WebSphere MQ

localhost:8080/apodwmq/pages/webapp.jsp

Logged in as Albert

WMQ Network

- MQM
 - Searches
 - Queue::*:CITI* (4)
 - CITI_001 (0/5000)
 - CITI_001 (0/5000)
 - CITI_002 (0/5000)
 - CITI_002 (0/5000)
 - Favorites
 - WIN2008R2
 - QM_A
 - QM_B
 - QM_DEV
 - QM_PROD
 - Queues
 - Alias Queues
 - Local Queues
 - Model Queues
 - Remote Queues
 - Channels
 - Processes
 - Client Connections
 - Namelist
 - Services
 - Listeners
 - Authentication Informations
 - Topics
 - Subscriptions

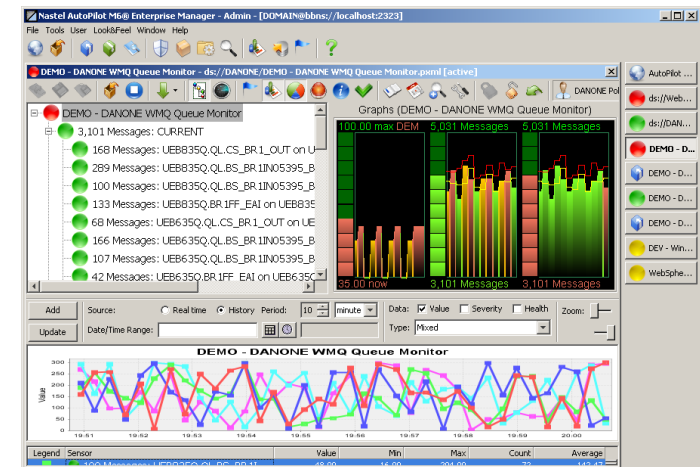
Object Name: \\MQM\WIN2008R2\QM_PROD\Queues\Local Queues

TXT CSV <H>

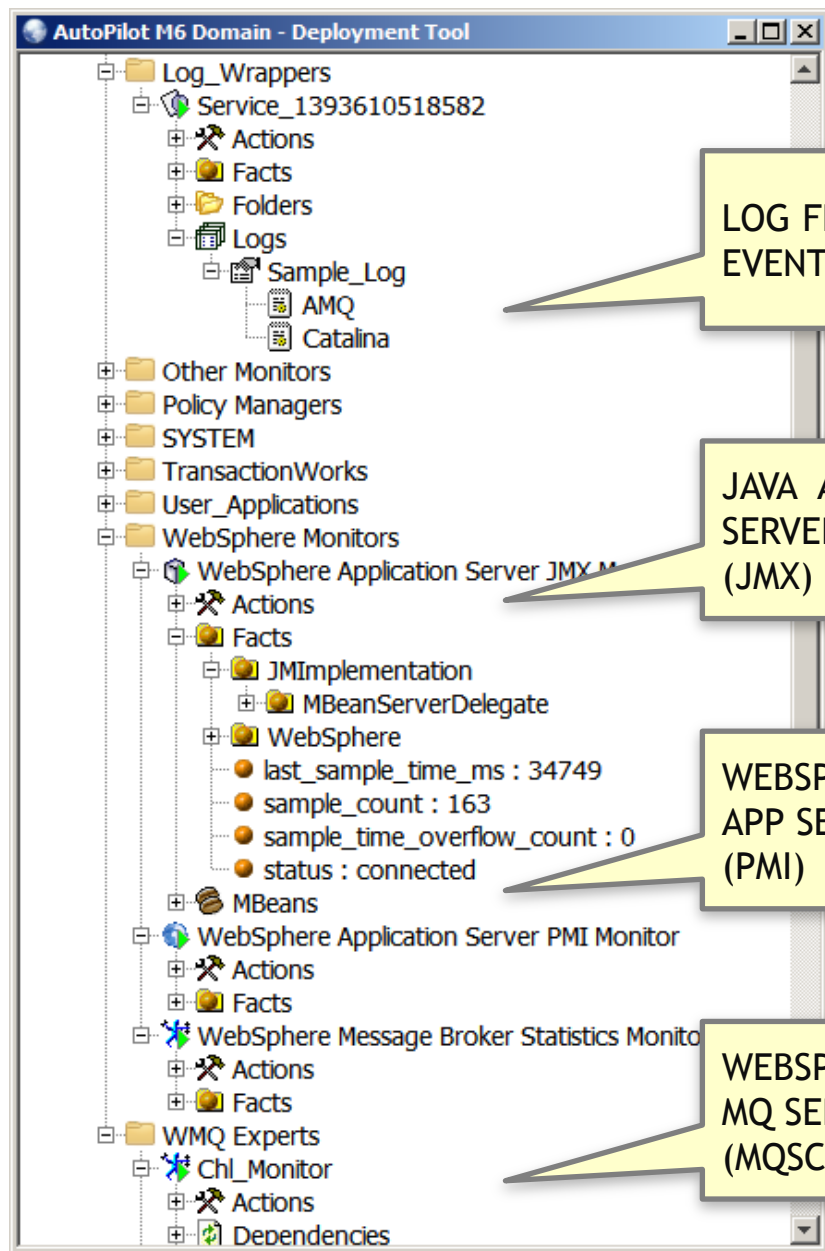
Queue Name	Queue Depth	Max Depth	Put	Get	Input Count	Output Count
CITI_001	0	5000	Allowed	Allowed	0	0
CITI_002	0	5000	Allowed	Allowed	0	0
FINCORP_001	0	5000	Allowed	Allowed	0	0
NASTEL.APTM.CONFIG	0	5000	Allowed	Allowed	0	0
NASTEL.EVENT.QUEUE	0	100000	Allowed	Allowed	0	0
NASTEL.MMF.ADMIN.COMMAND.QUEUE	0	5000	Allowed	Allowed	0	0
NASTEL.MMF.AUDIT.QUEUE	0	5000	Allowed	Allowed	0	0
NASTEL.PUBSUB.EVENT.QUEUE	0	100000	Allowed	Allowed	0	0
SYSTEM.ADMIN.ACTIVITY.QUEUE	0	5000	Allowed	Allowed	0	0
SYSTEM.ADMIN.COMMAND.QUEUE	0	3000	Allowed	Allowed	0	0
SYSTEM.ADMIN.TRACE.ROUTE.QUEUE	0	5000	Allowed	Allowed	0	0
SYSTEM.AUTH.DATA.QUEUE	0	999999999	Allowed	Allowed	0	0
SYSTEM.BROKER.ADMIN.STREAM	0	5000	Allowed	Allowed	0	0
SYSTEM.BROKER.CONTROL.QUEUE	0	5000	Allowed	Allowed	0	0
SYSTEM.BROKER.DEFAULT.STREAM	0	5000	Allowed	Allowed	0	0
SYSTEM.BROKER.INTER.BROKER.COMMUNICATIONS	0	999999999	Allowed	Allowed	0	0
SYSTEM.CHANNEL.INITQ	0	1000	Allowed	Allowed	1	0
SYSTEM.CHANNEL.SYNCQ	0	20000	Allowed	Allowed	0	0
SYSTEM.CICS.INITIATION.QUEUE	0	1000	Allowed	Allowed	0	0
SYSTEM.CLUSTER.COMMAND.QUEUE	0	999999999	Allowed	Allowed	0	0
SYSTEM.CLUSTER.HISTORY.QUEUE	0	999999999	Allowed	Allowed	0	0
SYSTEM.CLUSTER.REPOSITORY.QUEUE	0	999999999	Allowed	Allowed	0	0
SYSTEM.CLUSTER.TRANSMIT.QUEUE	0	999999999	Allowed	Allowed	0	0

WebSphere® MQ MONITORING

- Pre-defined & User-Defined Dashboards with intuitive KPI's
- Policy-based, Wizard-built monitoring
- No scripting
- Dynamic Thresholds & Automatic Baselining
- Alerts, Notifications & Automated Actions
- Real-time and historical analysis
- Easily locate & resolve performance issues *before* business impact



AutoPilot® M6 "Facts" : Events and Metrics

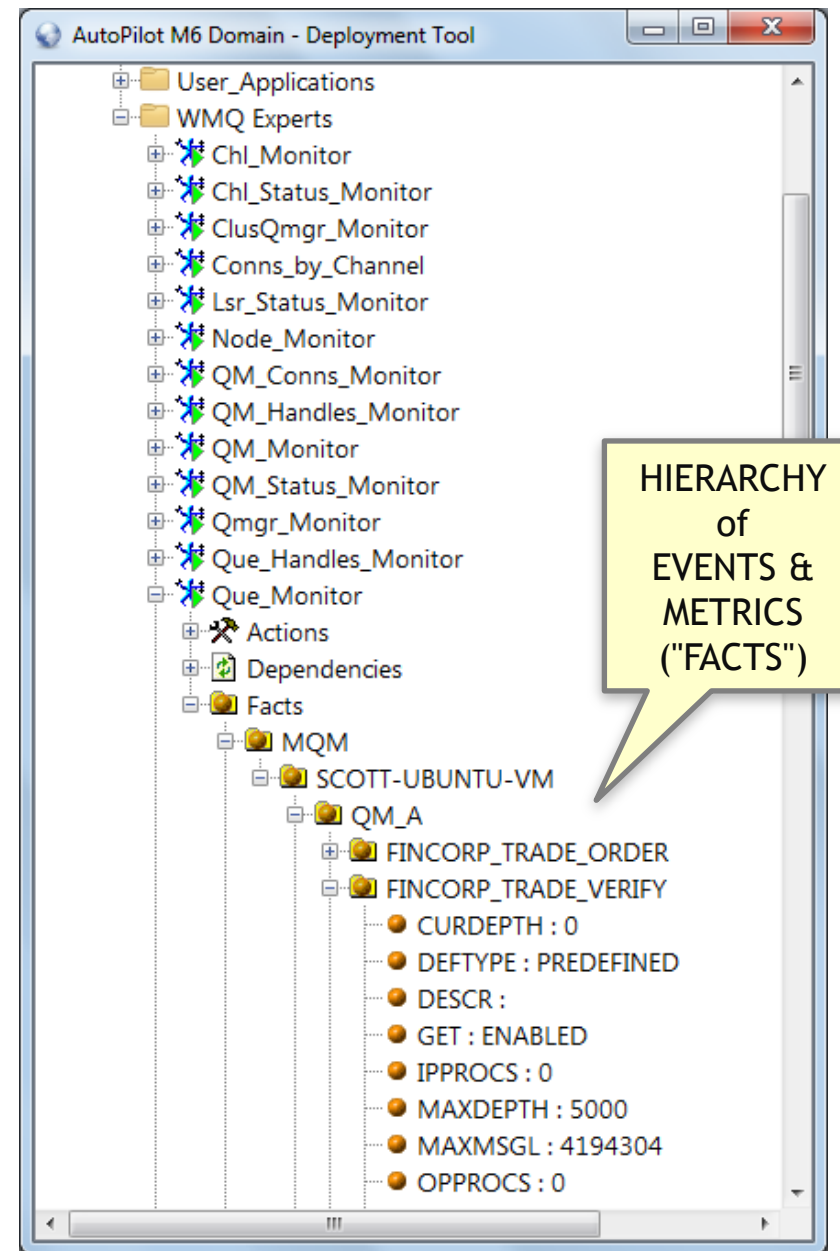


LOG FILE
EVENTS

JAVA APP
SERVER
(JMX)

WEBSHERE
APP SERVER
(PMI)

WEBSHERE
MQ SERVER
(MQSC)



HIERARCHY
of
EVENTS &
METRICS
("FACTS")

Making It Easy: AutoPilot® Dashboard Wizard

Sensor Wizard - Aged Claims

Select Facts To Monitor

Monitor these facts:

● [%F0] Application_Monitor\Claims\aged_claims

1) "What" : Select facts (metrics) which impact a business condition

3) "Action" : Determine how to handle an outcome - alert, action, event.

Sensor Wizard - Aged Claims

Sensor Evaluation Rules

Define evaluation rules for this sensor: ● Environment: Function + - * / % () Action

+ X ☐ Severity: ● Warning Actions: Show value: %F0:Value

+ X When %F0:Value is greater than 20

+ X ☐ Severity: ● Success Actions: Show value: %F0:Value

For all other conditions

< Back Next > Start Over Cancel

E-mail to: {sensor.default.email} {}

E-mail subject: {sensor.default.email.subject} {}

E-mail MIME type: text/p...

User action: {sensor.default.action} {}

Event ID: 3010

Event mask: {sensor.default.event.mask} {}

Scheme: None Trigger delay (ms): 60000

Repeat limit: 5 Re-arm delay (ms): 60000

Value

Name

Class

Length

Update-Count

Change-Count

Previous-Value

Time-Created

La

La

Up

Ch

Tir

2) "How" : Define a pattern of activity that determines normal vs. abnormal - a Business or IT Outcome

Sensor Wizard - Aged Claims

Define Alerts and Actions

Alert on

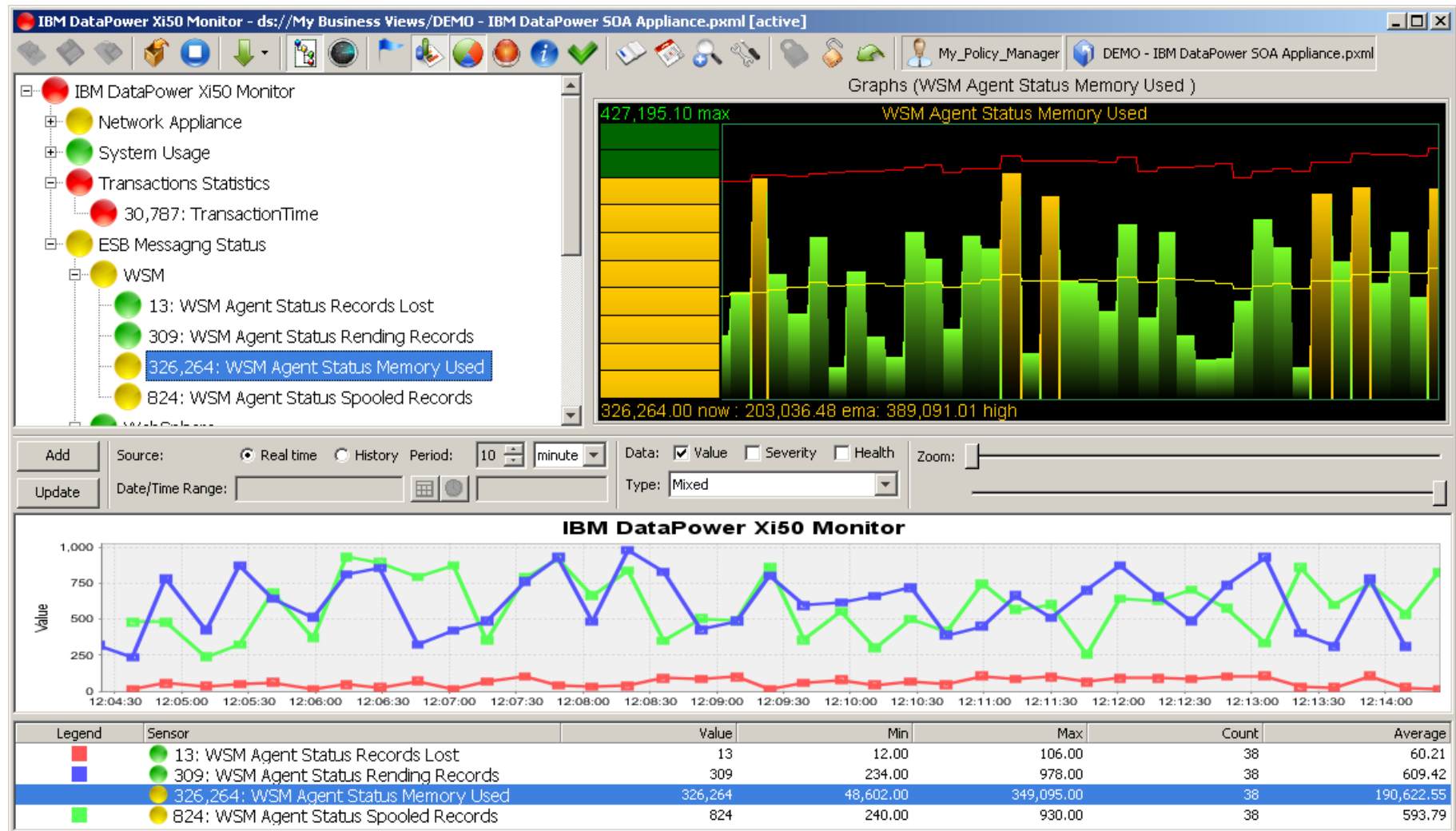
☐ Unknown ☐ Emergency ☐ Critical

☐ Failure ☐ Error ☒ Warning

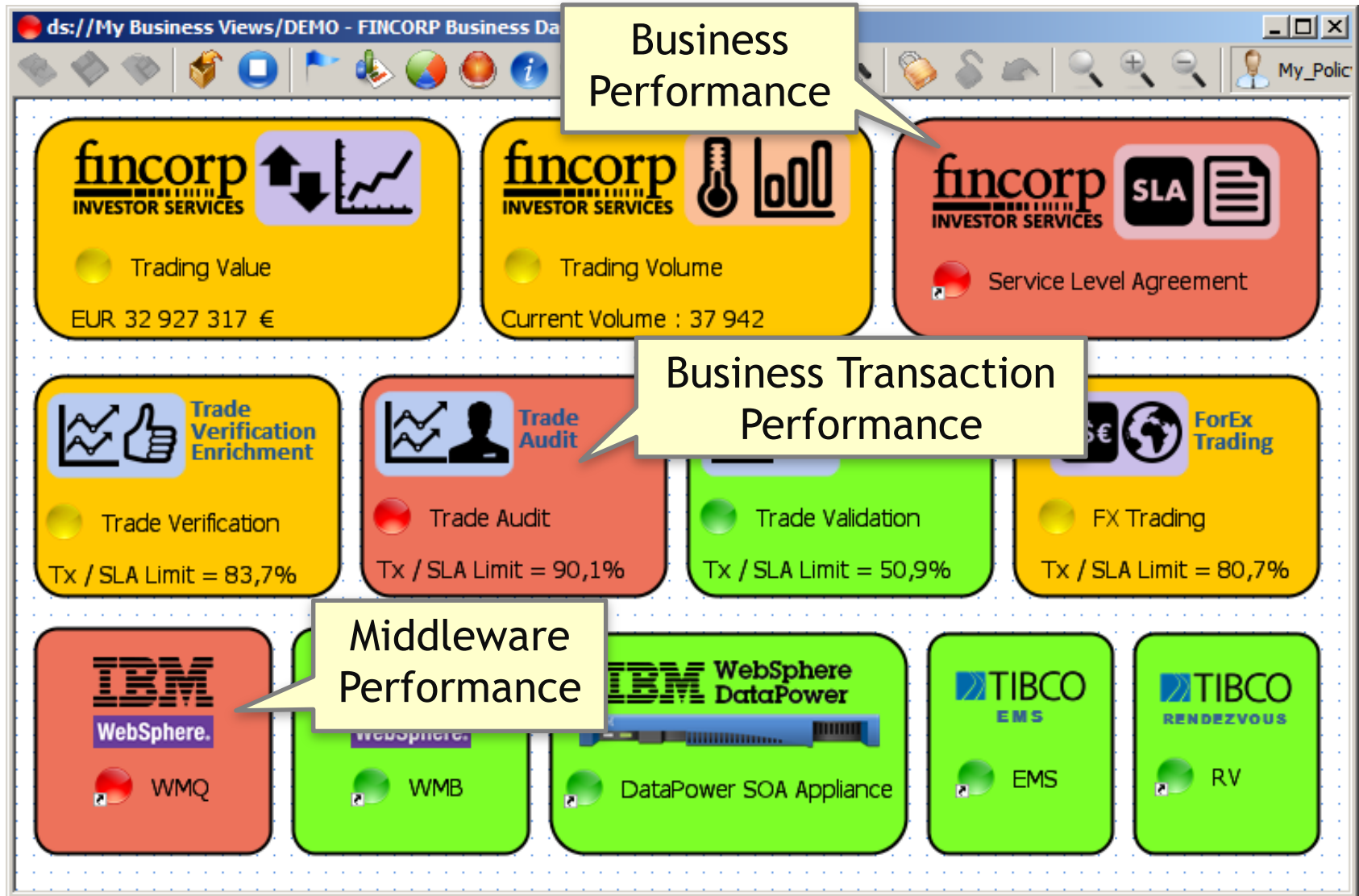
☐ Success ☐ Debug ☐ Information

< Back Finish Start Over Cancel

AutoPilot® Operational Monitoring

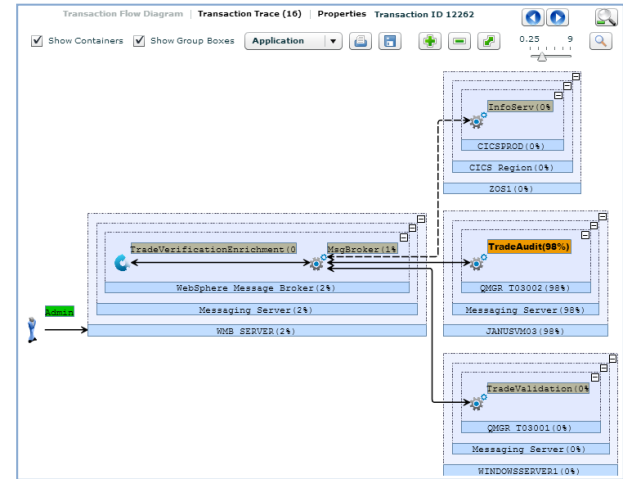
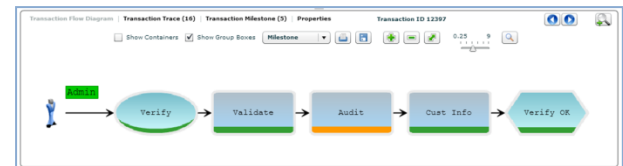


AutoPilot® Business Activity Monitoring



MESSAGE TRACKING

- ➔ Graphical depiction of WMQ Message Flows, with details of each operation
- ➔ Real-time and historical analysis
- ➔ Create SLA's for message flows in one click
- ➔ Pinpoint message delivery problems, message latency and SLA breaches
- ➔ Criteria-based message search
- ➔ ALL message tracking information is recorded in SQL database - Persistent as well as Non-Persistent messages
- ➔ Pre-Defined and User-Defined Reports

[illegible]

AutoPilot® Transaction Monitoring

Trace

Start Date	Applications	Transaction Status	SLA Status	Operations	Messages	Transaction
2014-04-06 14:59:06	InfoServ,MsgBroker,TradeVerification...	Complete ✓	5.95%		16	8 3999
2014-04-06 14:59:07	InfoServ,MsgBroker,TradeVerification...	Complete ✓	5.96%	Within SLA ●	16	8 3994
2014-04-06 14:59:07	InfoServ,MsgBroker,TradeVerification...	Complete ✓	6.55%	Within SLA ●	16	8 4004
2014-04-06 14:59:08	InfoServ,MsgBroker,TradeVerification...	Complete ✓	6.20%	Within SLA ●	16	8 3998
2014-04-06 14:59:09	InfoServ,MsgBroker,TradeVerification...	Complete ✓	129.81%	Missed SLA ●	16	8 4003
2014-04-06 14:59:10	InfoServ,MsgBroker,TradeVerification...	Complete ✓	128.06%	Missed SLA ●	16	8 4022
2014-04-06 14:59:10	InfoServ,MsgBroker,TradeVerification...	Complete ✓	143.24%	Missed SLA ●	16	8 3995
2014-04-06 14:59:11	InfoServ,MsgBroker,TradeVerification...	Complete ✓	139.09%	Missed SLA ●		8 4010
2014-04-06 14:59:12	InfoServ,MsgBroker,TradeVerification...	Complete ✓	100.19%	Missed SLA ●		8 4002

“Drill Down” to transaction detail (Java, HTTP, JDBC, JMS, WMQ, ...)

Transaction flow diagram

Transaction ID 4003

Transaction Flow Diagram | Transaction Timeline | Transaction Trace | Transaction Milestones

Select Flow Diagram Application ☒ Show Containers ☒ Show Group Boxes

```
graph LR; subgraph Left; TE[TradeVerificationEnrichment(0%)] --> MB[MsgBroker(1%)] --> WMB[WebSphere_Message_Broker(2%)] --> MS1[Messaging Server(2%)] --> WMB_SERVER[WMB_SERVER(2%)]; end; subgraph Right; TA[TradeAudit(98%)] --> QMGR[QMGR_T03002(98%)] --> MS2[Messaging Server(98%)] --> JANUSVM03[JANUSVM03(98%)]; end; MB --> TA;
```

Transaction Trace & Message Tracking

Transaction ID 3208

Transaction Flow Diagram

Trans

☐ Show Hierarchy

Severity	Time
	2014-04-05 10:30:37.768
	2014-04-05 10:30:37.783
	2014-04-05 10:30:37.783
	2014-04-05 10:30:37.788
	2014-04-05 10:30:37.791
	2014-04-05 10:30:37.792
	2014-04-05 10:30:37.798
	2014-04-05 10:30:37.818
	2014-04-05 10:30:37.818
	2014-04-05 10:30:37.838
	2014-04-05 10:30:37.838
	2014-04-05 10:31:09.197
	2014-04-05 10:31:09.197

Message Content


Display Type Character Character Set ASCII

<TRADE_ENTRY_DATA><TRADE_HDR><TRADE_SEQUENCE_ID>12345678</TRADE_SEQUENCE_ID><TRADE_PAYLOAD_VERSION>01</TRADE_PAYLOAD_VERSION><TRADE_DATE>20100104</TRADE_DATE> </TRADE_HDR><TRADE_COMMON_DATA><TRADE_TYPE>OTC</TRADE_TYPE><TRADE_ID>123400000002</TRADE_ID><TRADE_STATUS>OPEN</TRADE_STATUS> </TRADE_COMMON_DATA><TRADE_DETAIL_DATA><TRADE_ACTION>SELL</TRADE_ACTION><TRADE_EXECUTE_DATE>20100104</TRADE_EXECUTE_DATE> <TRADE_QUANTITY>1000</TRADE_QUANTITY> <TRADE_TICKER>IBM</TRADE_TICKER> <TRADE_PRICE>125.25</TRADE_PRICE> <TRADE_TYPE>LIMIT</TRADE_TYPE> </TRADE_DETAIL_DATA></TRADE_ENTRY_DATA>

Message Text

pr: http://localhost:8080/trading/ accept-langua

Statement.executeQuery...	MySQL5.1:DBSe...	2224	4		SELECT * from TradeTable
com/acme/trading/verify....	java	1324			
QueueSender.send	queue://trading/...	6175	6		<TRADE_ENTRY_DATA><TRADE_HDR><TRADE_SEQUENCE_ID>12345678</TRADE_SEQUENCE_ID><TRADE_PAYLOAD_VERSION>01</TRADE_PAYLOAD_VERSION><TRADE_DATE>20100104</TRADE_DATE> </TRADE_HDR><TRADE_COMMON_DATA><TRADE_TYPE>OTC</TRADE_TYPE><TRADE_ID>123400000002</TRADE_ID><TRADE_STATUS>OPEN</TRADE_STATUS> </TRADE_COMMON_DATA><TRADE_DETAIL_DATA><TRADE_ACTION>SELL</TRADE_ACTION><TRADE_EXECUTE_DATE>20100104</TRADE_EXECUTE_DATE> <TRADE_QUANTITY>1000</TRADE_QUANTITY> <TRADE_TICKER>IBM</TRADE_TICKER> <TRADE_PRICE>125.25</TRADE_PRICE> <TRADE_TYPE>LIMIT</TRADE_TYPE> </TRADE_DETAIL_DATA></TRADE_ENTRY_DATA>
MQPUT	TradeVerificati...	10410	6		<TRADE_ENTRY_DATA><TRADE_HDR><TRADE_SEQUENCE_ID>12345678</TRADE_SEQUENCE_ID><TRADE_PAYLOAD_VERSION>01</TRADE_PAYLOAD_VERSION><TRADE_DATE>20100104</TRADE_DATE> </TRADE_HDR><TRADE_COMMON_DATA><TRADE_TYPE>OTC</TRADE_TYPE><TRADE_ID>123400000002</TRADE_ID><TRADE_STATUS>OPEN</TRADE_STATUS> </TRADE_COMMON_DATA><TRADE_DETAIL_DATA><TRADE_ACTION>SELL</TRADE_ACTION><TRADE_EXECUTE_DATE>20100104</TRADE_EXECUTE_DATE> <TRADE_QUANTITY>1000</TRADE_QUANTITY> <TRADE_TICKER>IBM</TRADE_TICKER> <TRADE_PRICE>125.25</TRADE_PRICE> <TRADE_TYPE>LIMIT</TRADE_TYPE> </TRADE_DETAIL_DATA></TRADE_ENTRY_DATA>
MQGET	TradeVerificati...	9607	6		<TRADE_ENTRY_DATA><TRADE_HDR><TRADE_SEQUENCE_ID>12345678</TRADE_SEQUENCE_ID><TRADE_PAYLOAD_VERSION>01</TRADE_PAYLOAD_VERSION><TRADE_DATE>20100104</TRADE_DATE> </TRADE_HDR><TRADE_COMMON_DATA><TRADE_TYPE>OTC</TRADE_TYPE><TRADE_ID>123400000002</TRADE_ID><TRADE_STATUS>OPEN</TRADE_STATUS> </TRADE_COMMON_DATA><TRADE_DETAIL_DATA><TRADE_ACTION>SELL</TRADE_ACTION><TRADE_EXECUTE_DATE>20100104</TRADE_EXECUTE_DATE> <TRADE_QUANTITY>1000</TRADE_QUANTITY> <TRADE_TICKER>IBM</TRADE_TICKER> <TRADE_PRICE>125.25</TRADE_PRICE> <TRADE_TYPE>LIMIT</TRADE_TYPE> </TRADE_DETAIL_DATA></TRADE_ENTRY_DATA>
MQPUT	TradeValidation...	9298	9		Message7
MQGET	TradeValidation...	10208	9		Message7
MQPUT	TradeValidation...	9298	11		Message8
MQGET	TradeValidation...	31350000	11		Message8
MQPUT	TradeAudit.Inp...	11420	13		Message9



Nastel AutoPilot® for WebSphere MQ Product Architecture

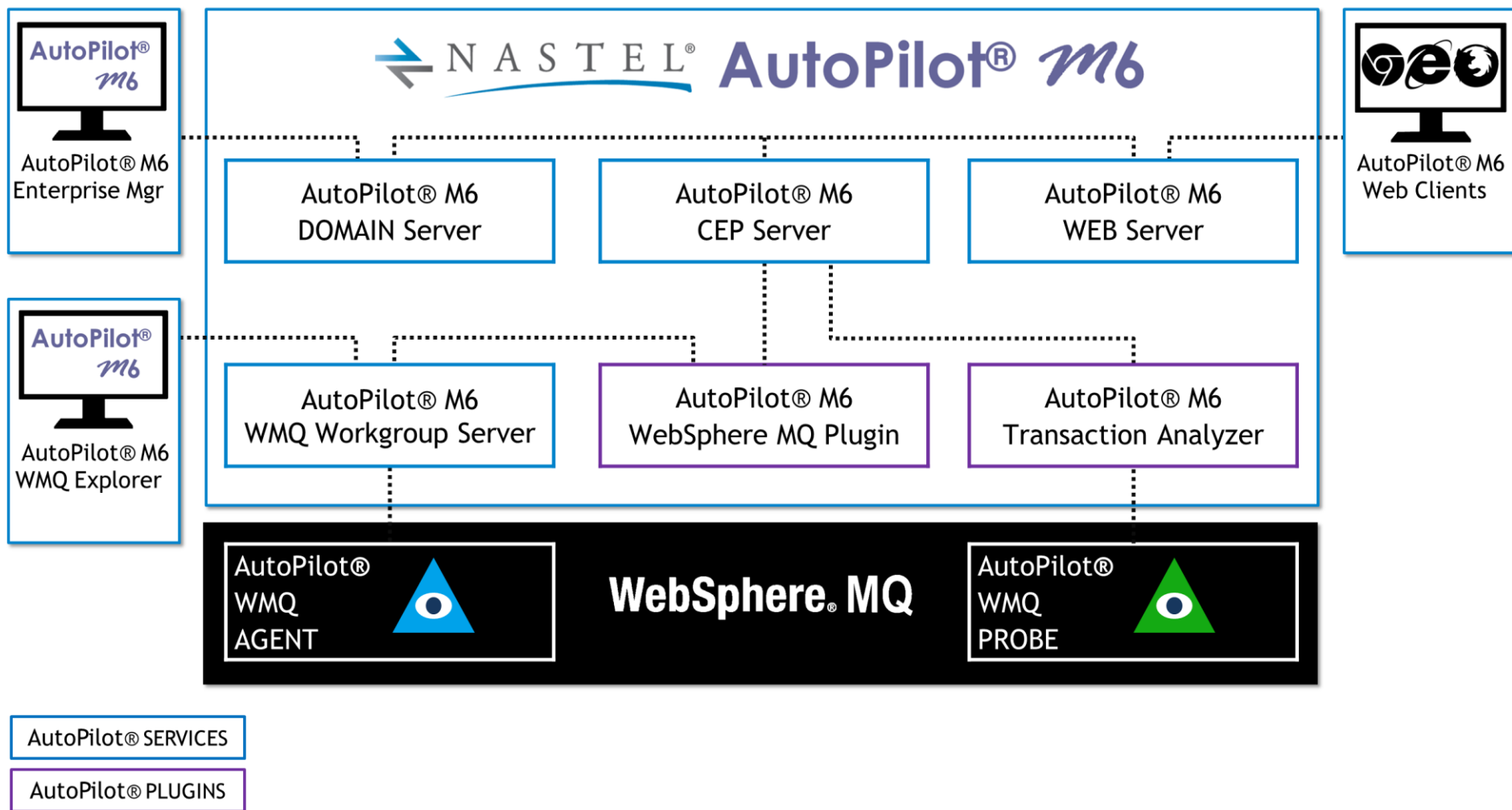


NASTEL

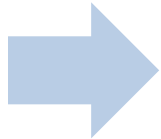
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AutoPilot® for WebSphere MQ - Architecture



AutoPilot® for WebSphere MQ - Services and Plugins



AutoPilot® *mb*



- ▶ **DOMAIN Server**
- ▶ **CEP Server**
- ▶ **WEB Server**
- ▶ **Workgroup Server**
- ▶ **WMQ Plugin**
- ▶ **Transaction Analyzer**



-  **nastel_portal**
-  **nastel_apwmq**
-  **nastel_permits**
-  **nastel_tworks**

- **AutoPilot® Domain Server:** Maintains the directory of CEP Servers, Experts, etc.
- **AutoPilot® CEP Server:** Hosts AutoPilot services such as Experts, Managers, Policies etc. All CEP Servers are registered within the DOMAIN Server.
- **AutoPilot® Web Server:** Web Server that is used to deploy AutoPilot® web-hosted components.
- **AutoPilot® for WebSphere MQ Workgroup Server:** Service used for management and monitoring of WebSphere MQ nodes.
- **AutoPilot® for WebSphere MQ Plugin:** Provides a series of Experts used to publish facts to the AutoPilot® CEP Server for monitoring WebSphere MQ.
- **AutoPilot® TransactionWorks® Transaction Analyzer:** Analyzes data produced by AutoPilot® TransactionWorks® Probes

AutoPilot® for WebSphere MQ : Key Functions

