



If you can't clone
yourself...

Delegate



Introduction

Company Overview

Founded in 1994

- by David Mavashev, CEO

Vision:

- Built the first-to-market solution for management and monitoring of MQ Series
- Provide the best of breed solution for middleware-centric application performance management – with analytics baked-in

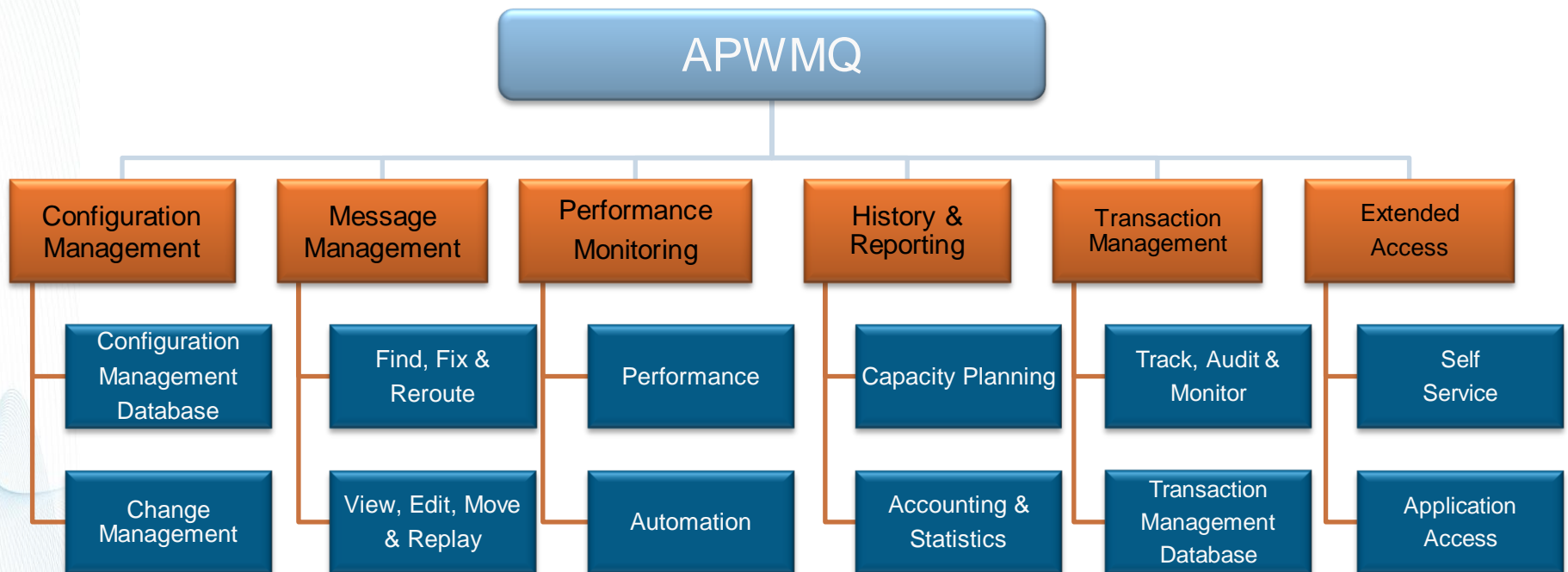
Global reach:

- Headquarters in Melville, NY
- Office in North America, EMEA, Latin America & South America

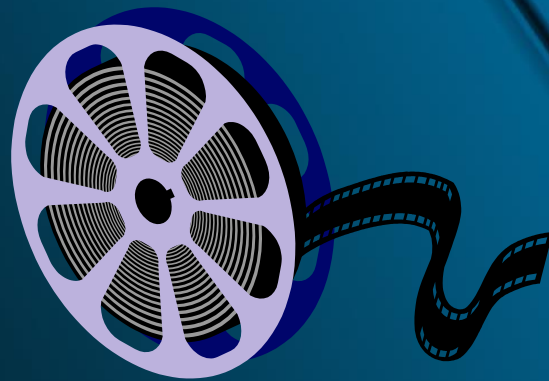


Nastel APWMQ Capabilities

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Self Service Presentation



Overview

In this session, we will discuss enabling various stakeholders with secure, role-based self-service access to MQ

- What does self-service for MQ deployments mean
- Control over segregation of duties & privileged access
- How Apps, Shared Services and DevOps can work together

Self Service



Self service is the practice of serving oneself... Common examples include many **gas stations**, where the customer pumps their own gas rather than have an attendant do it... **Automatic Teller Machines** (ATMs) in the banking world have also revolutionized how people withdraw and deposit funds; most **stores** in the Western world, where the customer uses a shopping cart in the store, placing the items they want to buy into the cart and then proceeding to the checkout counter/aisles; or at **buffet-style restaurants**, where the customer serves their own plate of food from a large, central selection.

Source: Wikipedia

Self Service Requirements

Safe

- Oregon and New Jersey do not allow self service gas and one key reason is safety
 - A survey conducted by the Petroleum Equipment Institute showed approximately two-thirds of the documented cases of gas pump fires involved returning to the driver's seat.

Secure

- ATM and online account security are obvious examples.
 - Only those authorized to complete the transaction should be able to.

Simple

- Stakeholders may have little or no training
 - Interface should be intuitive and guide them to the right actions

Scalable

- Have to be able to handle the volume of consumers
 - Higher usage can be expected

Why the Interest in Self Service in WebSphere MQ?

Drivers for Self Service in WebSphere MQ

- Decreasing middleware staff
- Expanding duties of the middleware staff
- Stakeholders Increasing (development, operations, support)
- Increased complexity of the applications

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Stakeholders and Benefits



Middleware
Team



Application
Support



Application
Development



Enterprise
Architect



Application
Owner

- Proactive Middleware Monitoring in DEV, TEST and PROD

- Identify root cause of performance issues
- Faster time to repair (MTTR)

- User Acceptance Testing
- Improve quality of new releases
- Compare real behavior with expectations

- Monitor applications
- Improve processes
- Lower costs
- Prevent performance problems

Types of Self Service Access

Self service should provide application support, DevOps, or operations the ability to:

- View queue status and depth, channel usage
- Examine queues, channels, queue managers, and subscriptions
- Browse and manipulate application messages
- Act on application specific messages (move, copy, edit, route, replay, create)

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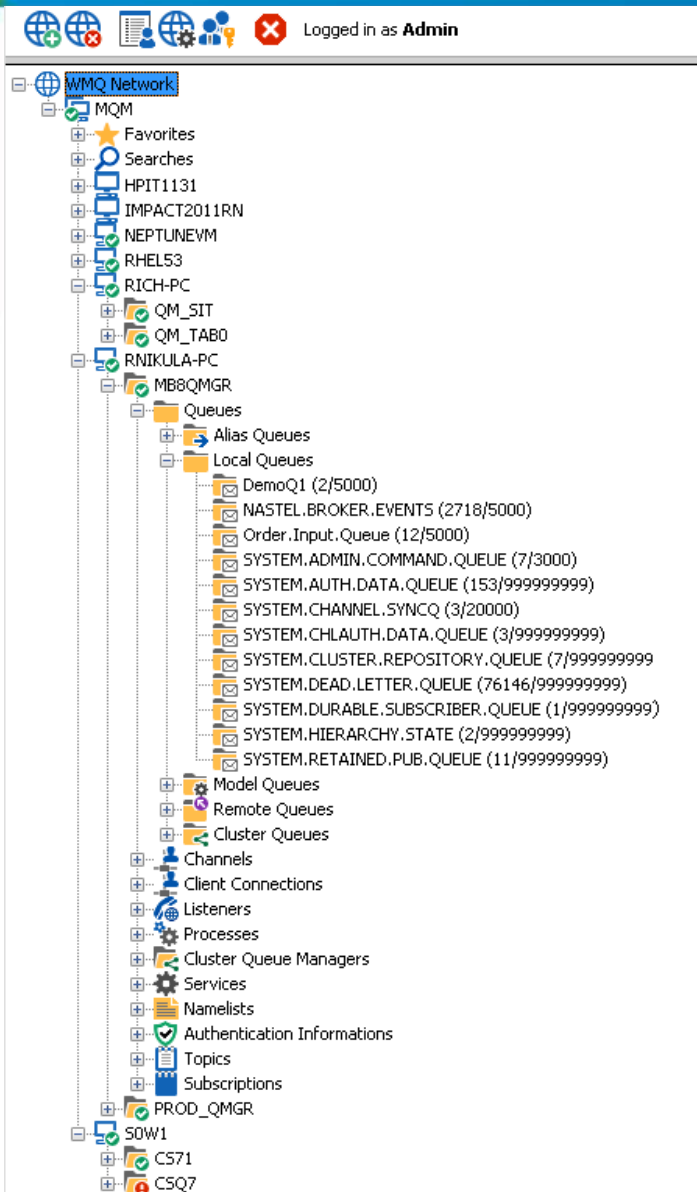
Self Service Summary

What is our Objective? To increase the number of opportunities for the stakeholders of WebSphere MQ (and related technologies) to service themselves as long as the methods that are:

- Safe
 - Protect the systems from damage
- Secure
 - Can only do what are authorized to do
- Simple
 - Easy to deploy and use
- Scalable
 - Large stakeholder population

MQ Networks

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- MQ Networks have many attributes
- Different Operating Systems
 - Different Versions of MQ
 - Varied Queue Manager Definition
 - Queues
 - Channels
 - Processes
 - Etc.

IBM MQ Explorer

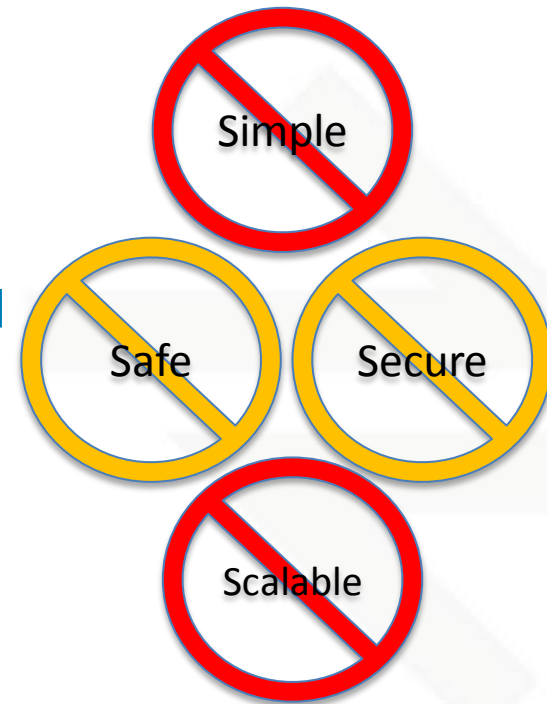
15

The screenshot displays the IBM WebSphere MQ Explorer interface. The left pane, titled 'MQ Explorer - Navigator', shows a tree view of the MQ environment. The right pane, titled 'MQ Explorer - Content', displays a table of queues under the 'Queues' heading. The table has columns for Queue name, Queue type, Open input count, Open output count, and Current queue. The filter is set to 'Standard for Queues'.

Queue name	Queue type	Open input count	Open output count	Current queue
A_LONG_LOCAL_Q	Local	0	0	0
A.SRF.B	Local	0	0	0
A.SRF.C	Local	0	0	0
A.SRF.DC	Local	0	0	0
A.SRF.DC1	Local	0	0	0
A.SRF.E	Remote			
AAAA	Local	0	0	0
ADDRESSBOOK_FAULT	Local	0	0	0
ADDRESSBOOK_IN	Local	0	0	0
ADDRESSBOOK_OUT	Local	0	0	0
AMQ.4FE41E7903410020	Local	0	0	0
AQ2NoWear	Remote			
BACK.REPLY	Local	0	0	0
BACK.REQUEST	Local	0	0	0
BACK.REQUEST2	Local	0	0	0
BadAlias	Alias			
BadModel	Model			
BadRemote	Remote			
BBB1	Local	0	0	0
BBBV1	Local	0	0	0
BBBV2	Local	0	0	0
CSQ7	Local	0	0	0
CSQ7_ADMIN	Remote			
DataPowerEnd	Local	0	0	0

Disadvantages for Using for MQ Explorer for Self Service

- Eclipse client required
 - Installation
 - Maintenance
 - Configuration
- Can potentially see and do more than needed
 - Additional security planning required
- Problems not easily visible
 - Primarily an Admin tool
- Opening ports and client channels required
 - MQ improvements in V7/V8 Improve



Self Service Scenarios



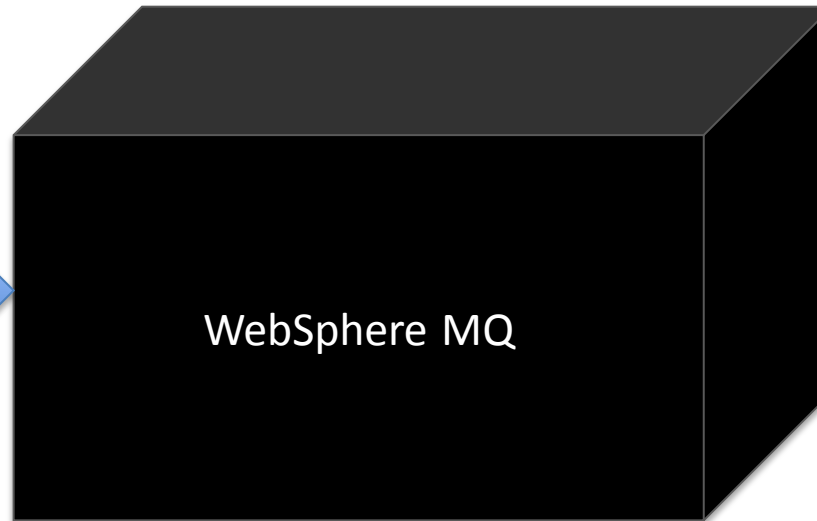
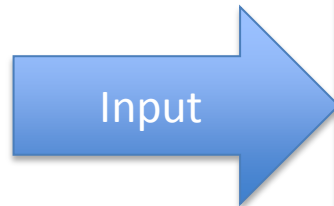
To most stakeholders, WebSphere MQ is a black box...



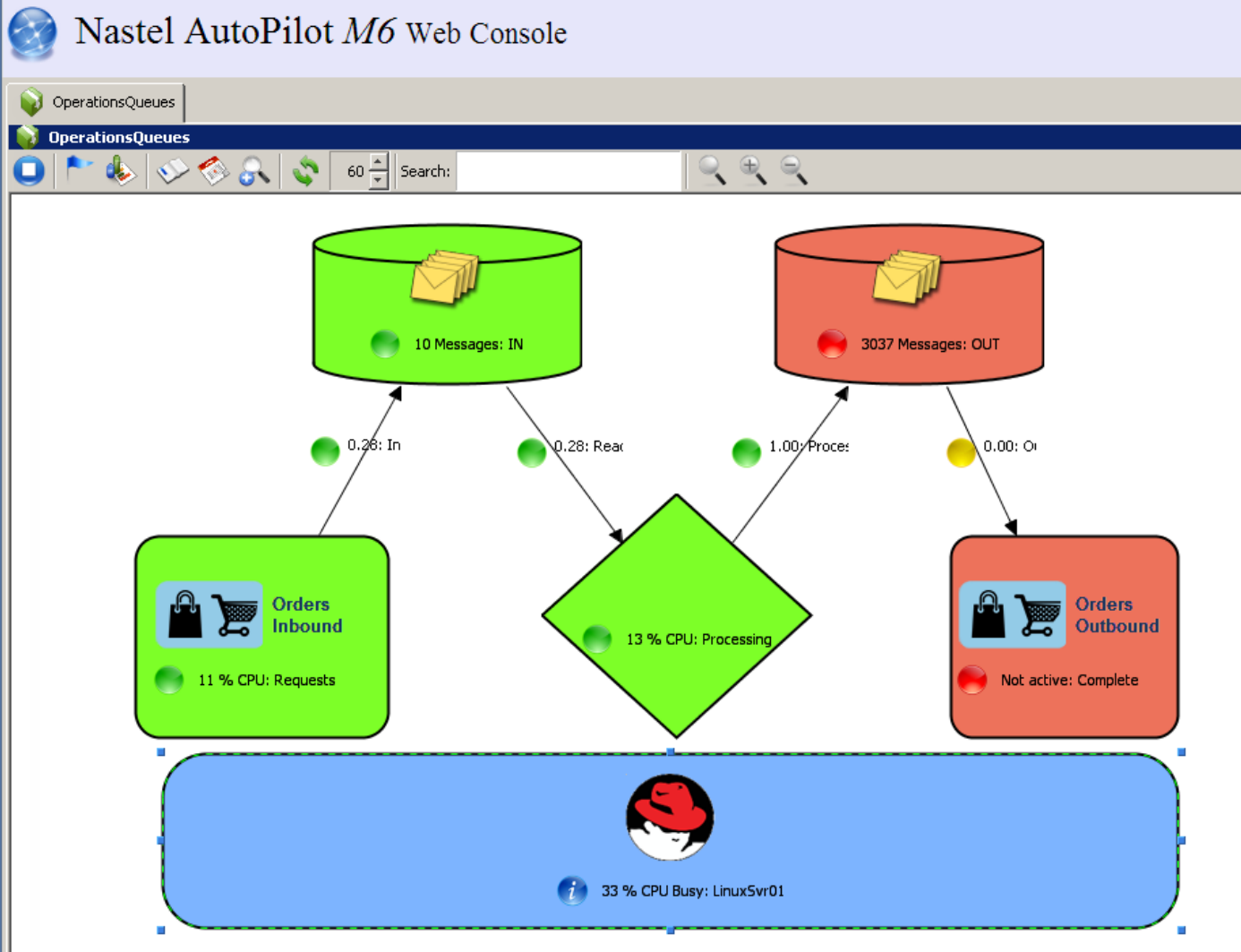
WebSphere MQ is Broken



“WebSphere MQ is broken..., can you fix it?”



Using a Self Service Dashboard



Using a Self Service Dashboard



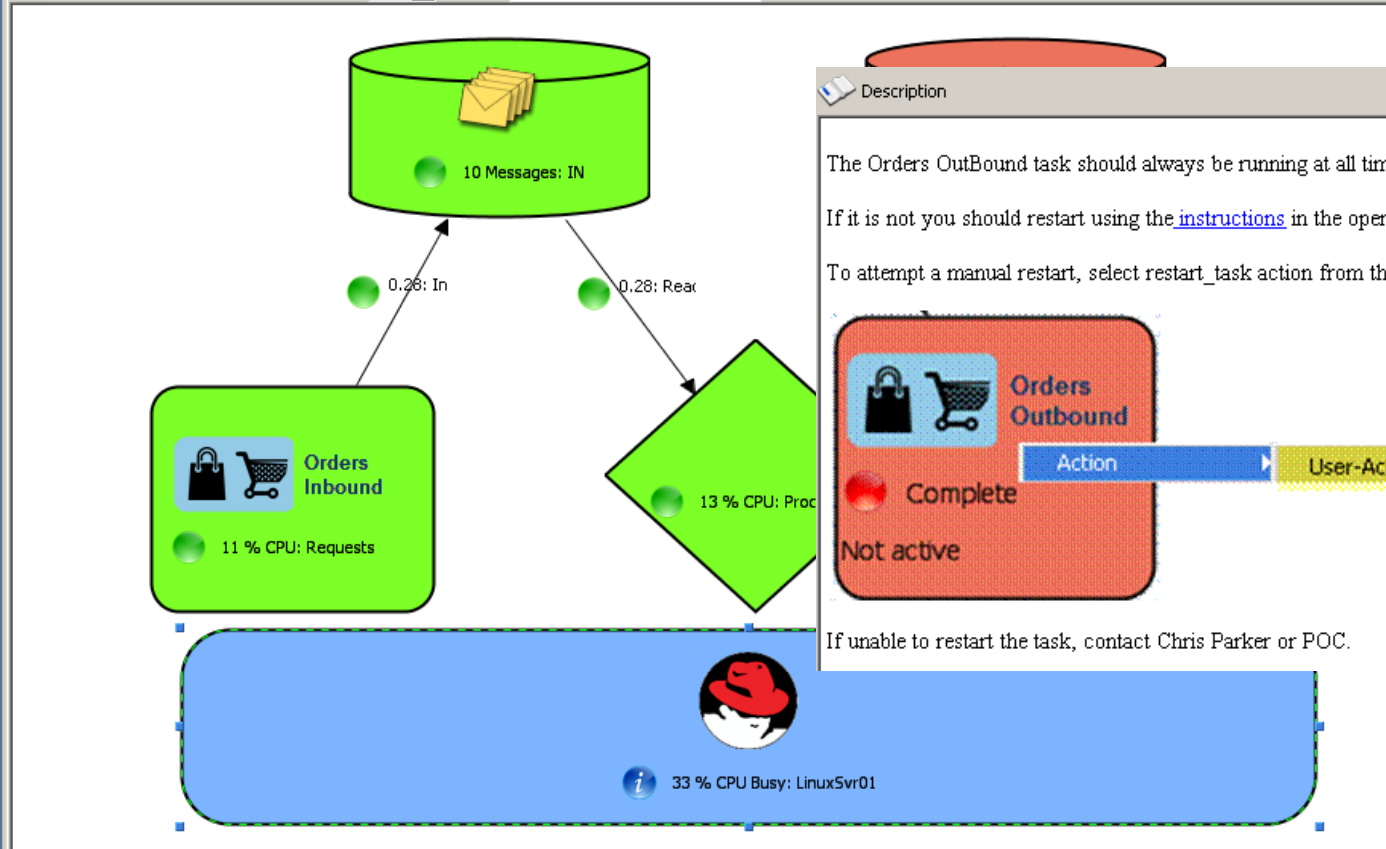
Nastel AutoPilot M6 Web Console



OperationsQueues



OperationsQueues



Advantages for Using for Self Service Dashboard

- Web enabled
- Restrict view and actions to required functions only
- Typical problems highlighted
- Describe the expected results
 - Link to existing run books and information
- If they still need to contact middleware team
 - Problem diagnosis already started

WebSphere MQ is Slow

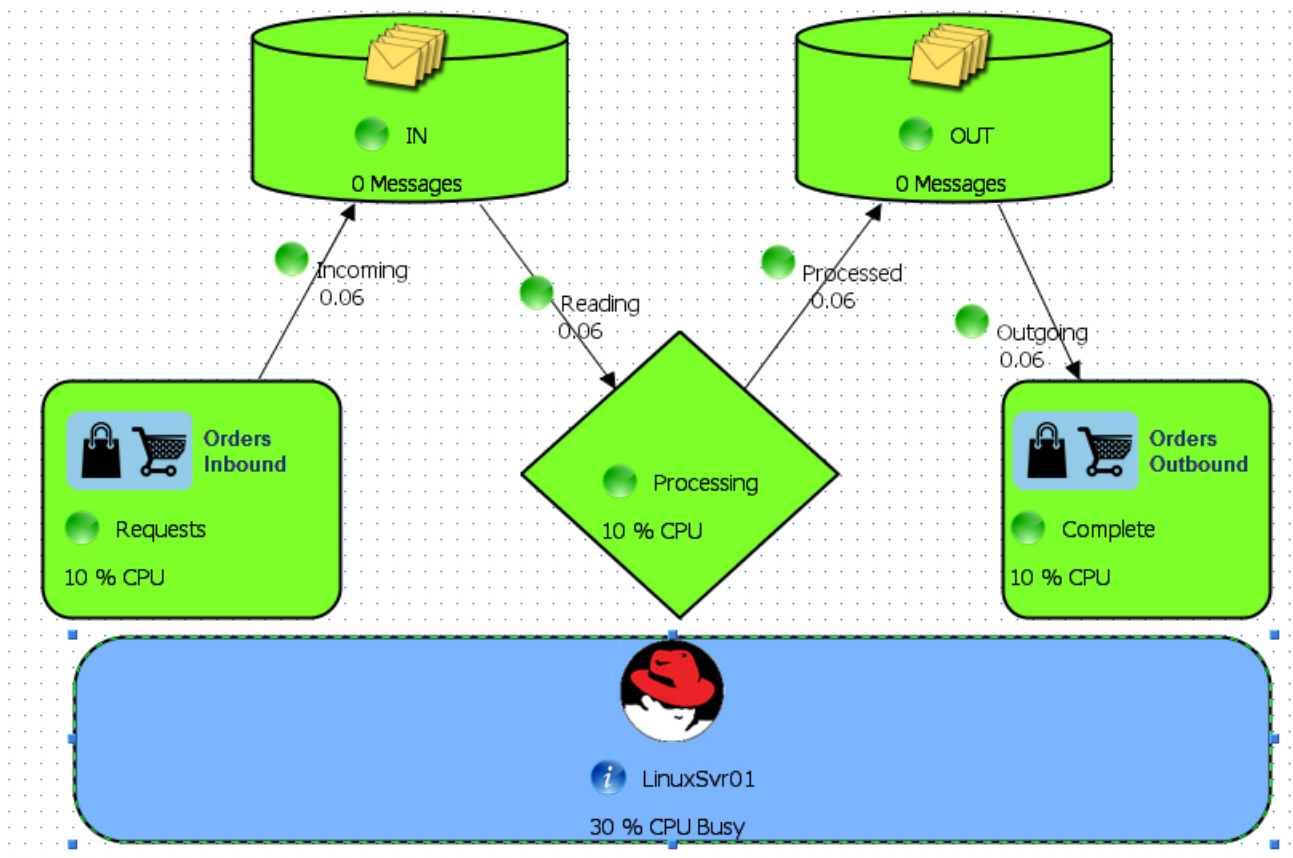


“WebSphere MQ is slow..., can you fix it?”



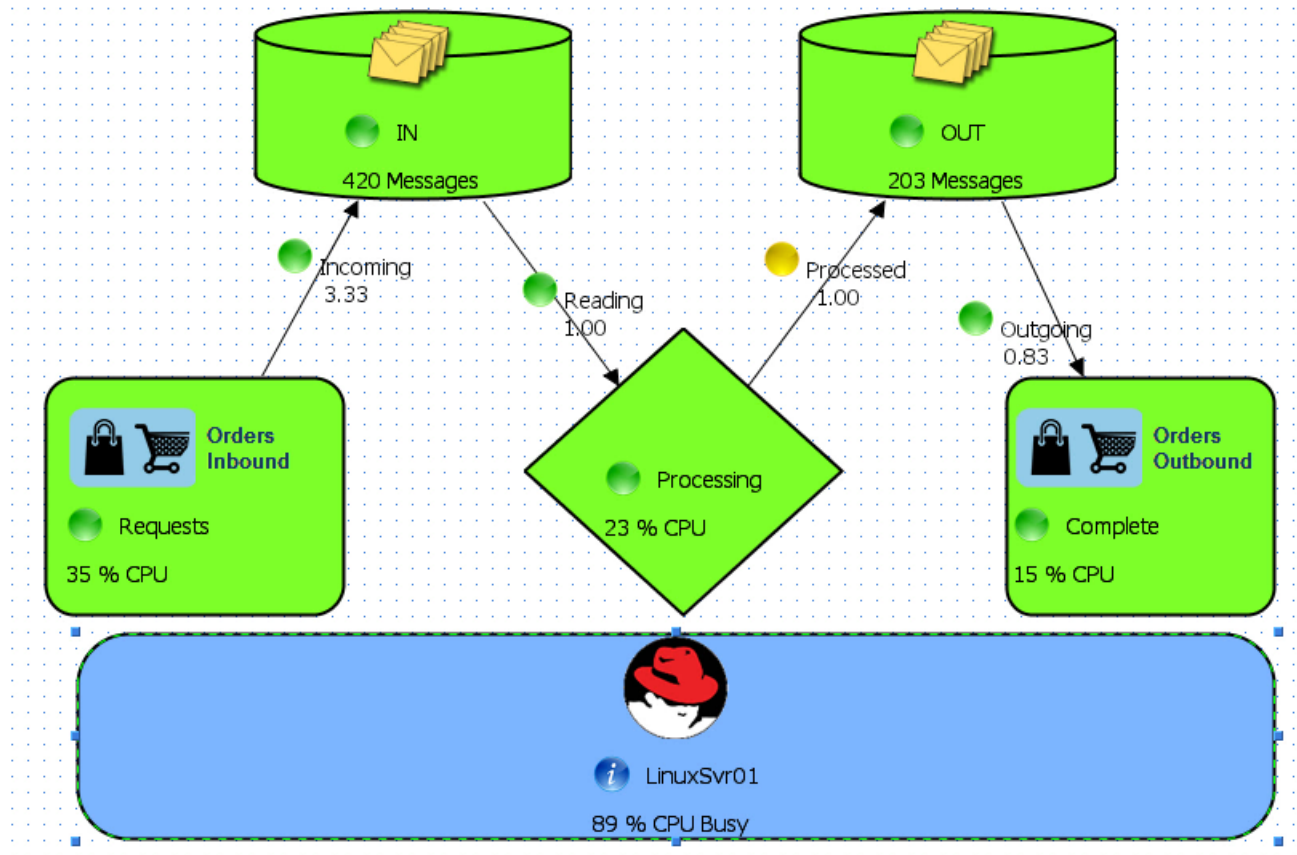
Using a Self Service Dashboard to Observe Behavior

Real time observation...



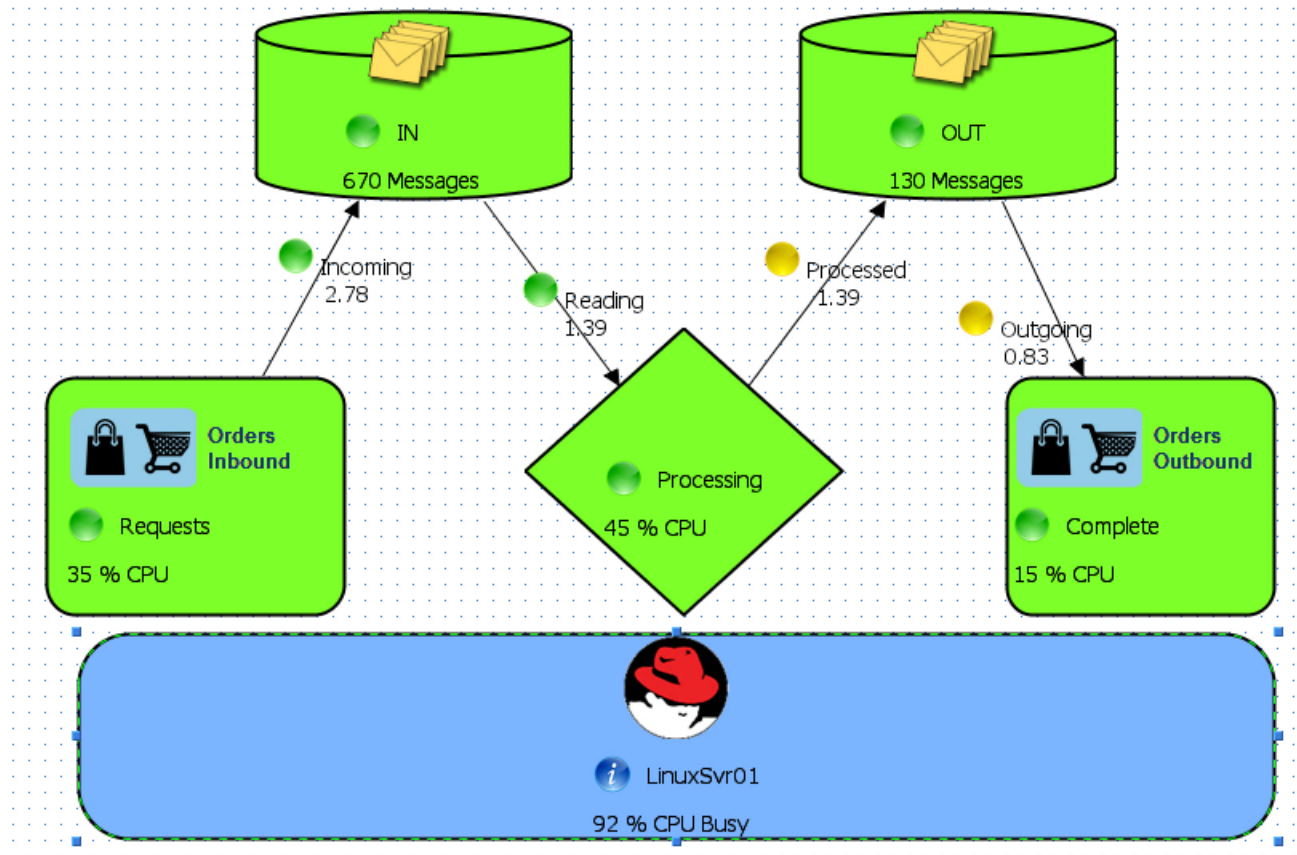
Using a Self Service Dashboard to Observe Behavior

To see the applications and queues...



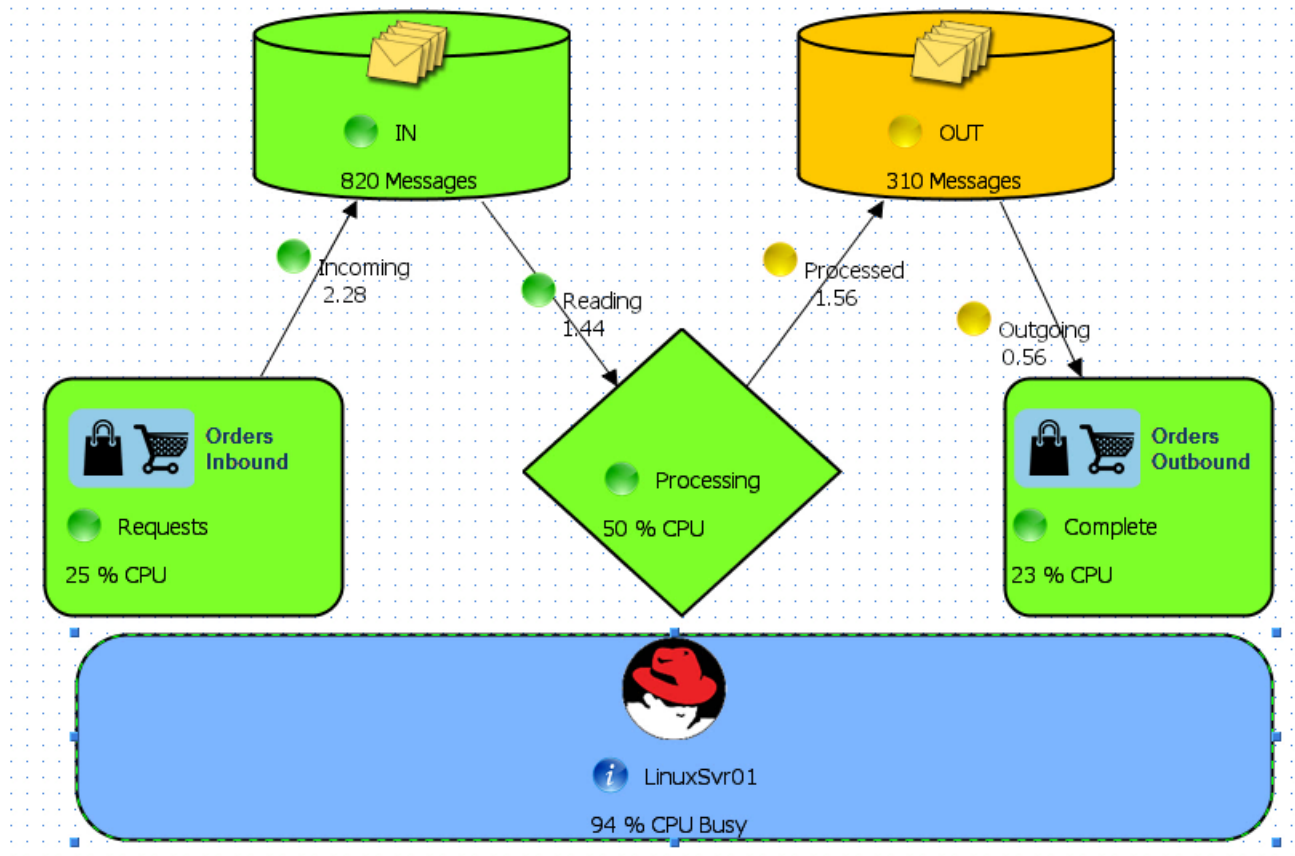
Using a Self Service Dashboard to Observe Behavior

In context...



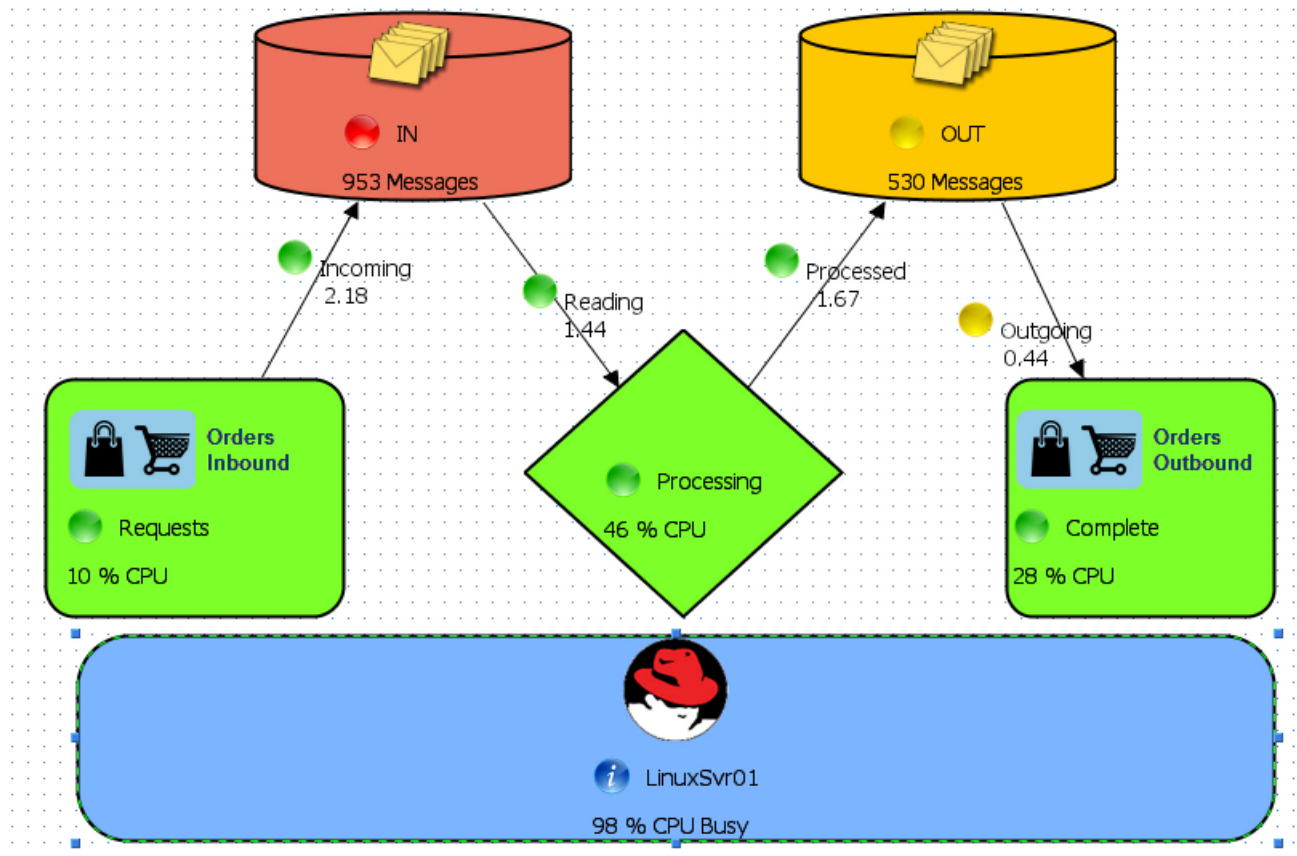
Using a Self Service Dashboard to Observe Behavior

And identify hot spots...



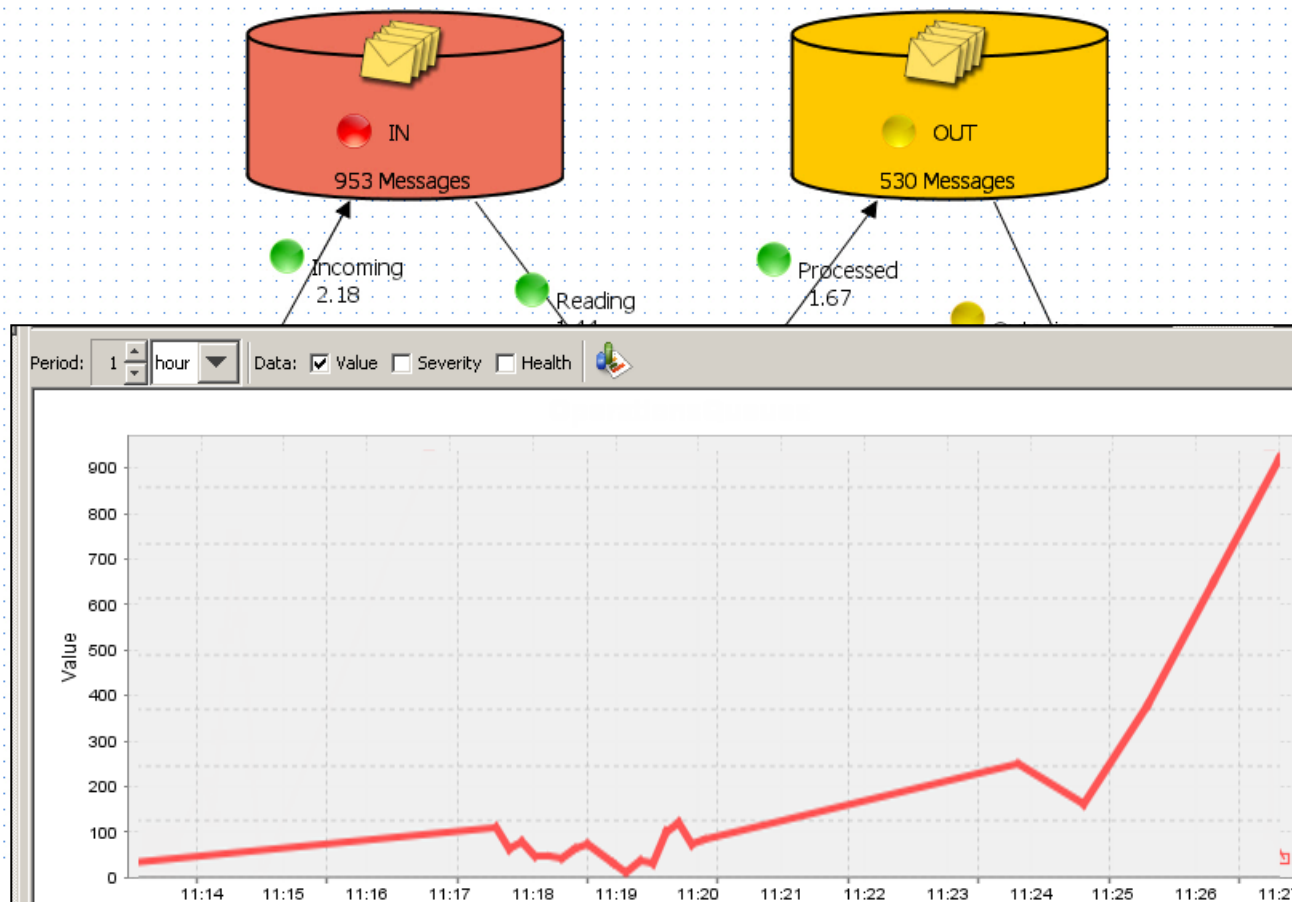
Using a Self Service Dashboard to Observe Behavior

And problem areas.



Using a Self Service Dashboard to Observe Behavior

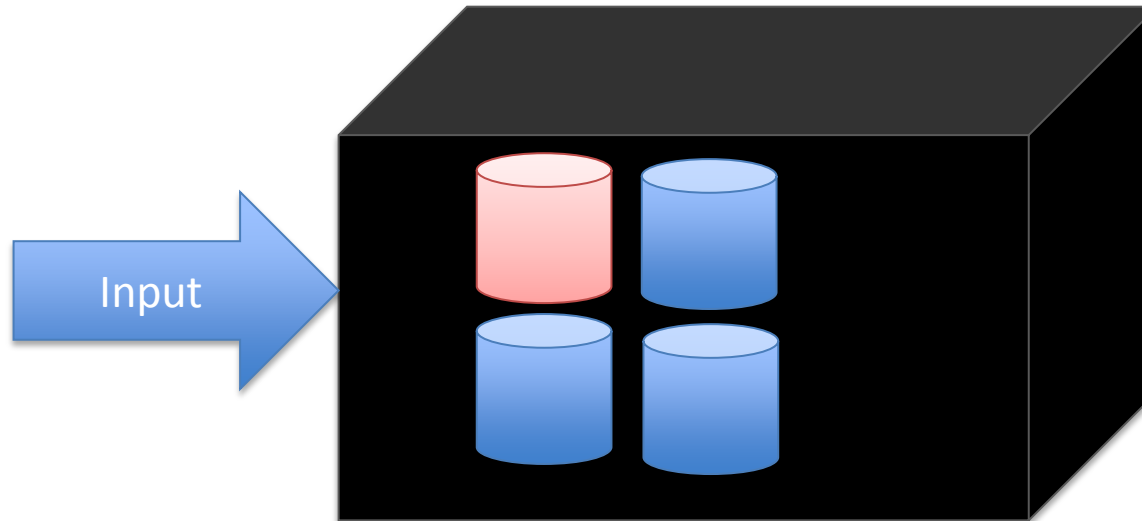
With the ability to observe behavior over time



What Kind of Requests Are Being Processed

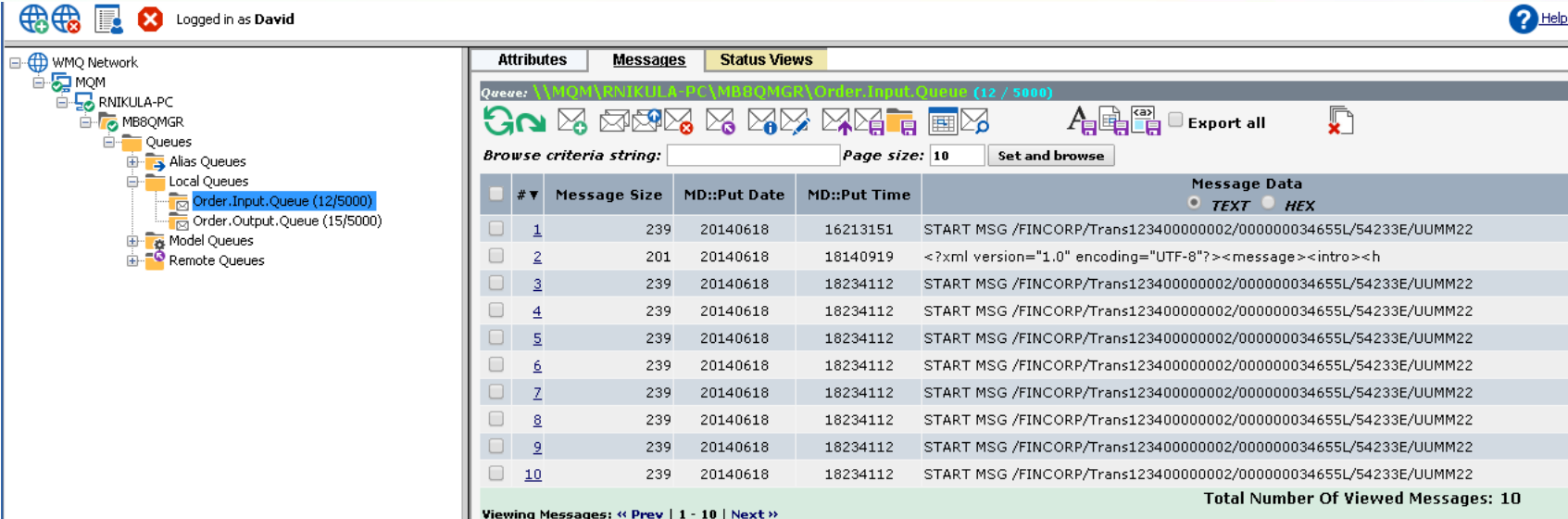


“What kind of requests are being processed?”



Secure Access to Just the Queues Needed

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WMQ Network

- MQM
- RNIKULA-PC
- MB8QMGR
- Queues
 - Alias Queues
 - Local Queues
 - Order.Input.Queue (12/5000)**
 - Order.Output.Queue (15/5000)
 - Model Queues
 - Remote Queues

Attributes Messages Status Views

Queue: \\MQM\RNIKULA-PC\MB8QMGR\Order.Input.Queue (12 / 5000)

Browse criteria string: Page size: 10 Set and browse

#	Message Size	MD::Put Date	MD::Put Time	Message Data
1	239	20140618	16213151	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
2	201	20140618	18140919	<?xml version="1.0" encoding="UTF-8"?><message><intro><h
3	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
4	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
5	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
6	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
7	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
8	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
9	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
10	239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22

Viewing Messages: << Prev | 1 - 10 | Next >> Total Number Of Viewed Messages: 10

Facilities needed

- Secure access
- Observe queue depth
- View message details

Secure Access to Just the Queues Needed

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The screenshot displays the IBM MQ Explorer interface. On the left, a tree view shows the hierarchy: WMQ Network > MQM > RNIKULA-PC > MB8QMGR > Queues > Local Queues > Order.Input.Queue. A context menu is open over 'Order.Input.Queue', listing options: Refresh, Show Object Attributes, Show Object Status, Messages (highlighted), Browse Options, and Add to favorites... A sub-menu is open for 'Messages', showing options: Browse, Browse All, Put New, Load From File..., Save All, Delete All, and Clear All. The main pane shows the 'Messages' tab for the selected queue, displaying a table of messages. The table has columns: e Size, MD::Put Date, MD::Put Time, and Message Data. The first three rows are visible, showing message sizes of 239, 201, and 239 bytes, all put on 20140618. The 'Message Data' column shows the start of XML messages. At the bottom right, a green bar indicates 'Total Number Of Viewed Messages: 10'. The top status bar shows 'Logged in as David'.

e Size	MD::Put Date	MD::Put Time	Message Data
239	20140618	16213151	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22
201	20140618	18140919	<?xml version="1.0" encoding="UTF-8"?><message><intro><h
239	20140618	18234112	START MSG /FINCORP/Trans123400000002/000000034655L/54233E/UUMM22

Facilities needed

- Secure access
- Observe queue depth
- View message details

Secure Access to the Information Needed

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WMQ Network

- MQM
- RNIKULA-PC
- MB8QMGR
- Queues
 - Alias Queues
 - Local Queues**
 - Order.Input.Queue (12/5000)
 - Order.Output.Queue (0/5000)
 - Model Queues
 - Remote Queues

Logged in as David

Help

Attributes Messages **Status Views**

Object Name: \\MQM\RNIKULA-PC\MB8QMGR\Queues\Local Queues

#	Name ▼	Curr. Queue Depth	Uncommitted Messages	Open Input Count	Open Output Count	Application Tag	Process ID
1	Order.Input.Queue	12	NO	0	1	WebSphere MQ\bin\amqsput.exe	12456
	Queue						
	Handle						
2	Order.Output.Queue	0	NO	1	0	nastel\aptm\bin\OrderApp.exe	8152
	Queue						
	Handle						

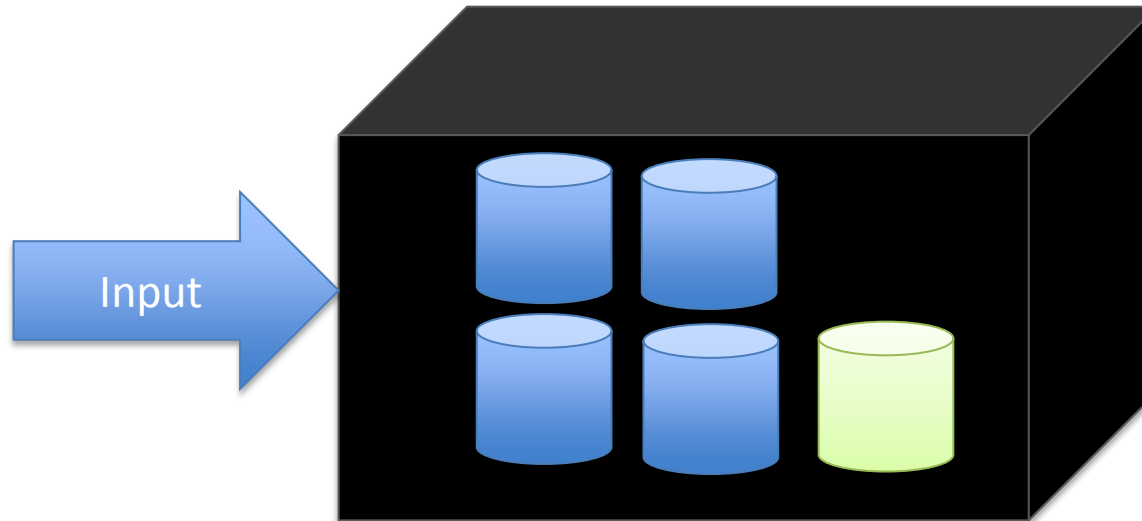
Facilities needed

- Quick access to objects required
- View queue status
- View definition information if required

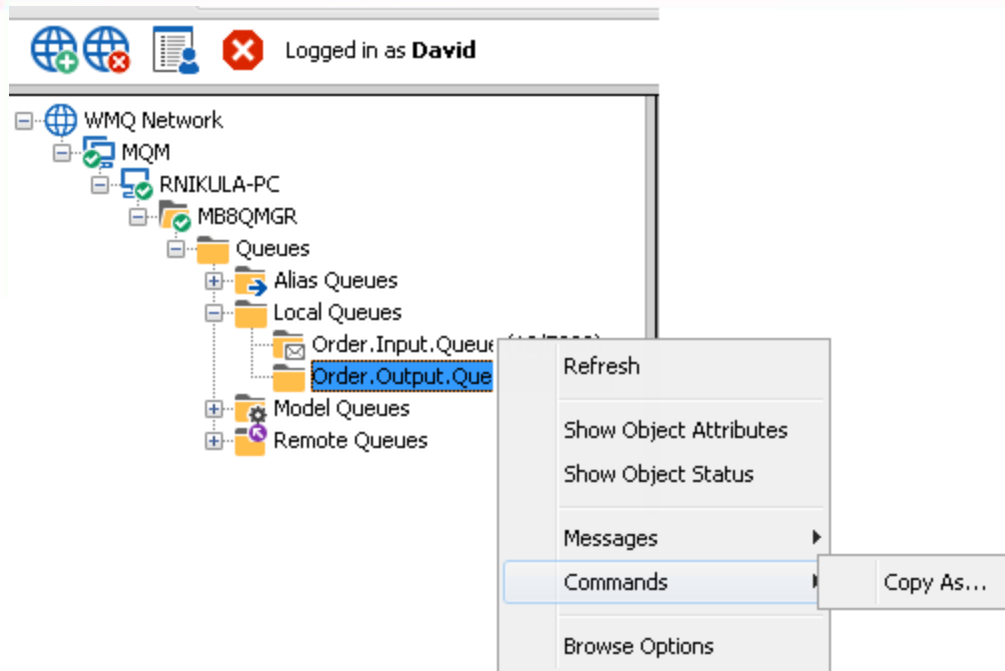
I Need a New Queue Created



“I need a new queue created to test with...”



Secure Access to Actions



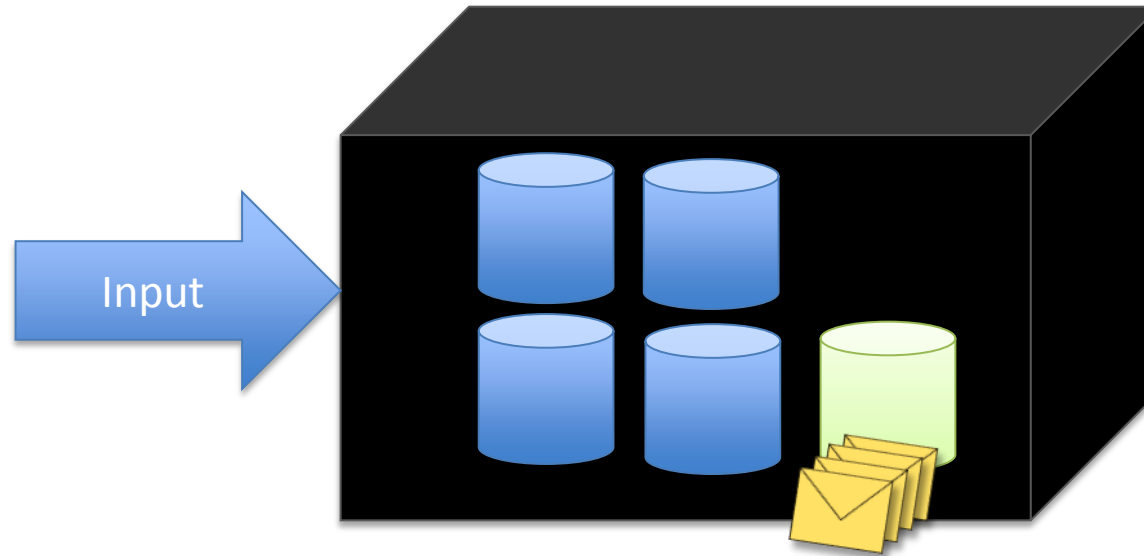
Facilities needed

- Secure access to the actions needed
- Easy navigation and usage

I Need a New Queue Created



“I need to simulate test data...”



Secure Access to Messages

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WMQ Network

- MQM
 - Favorites
 - Searches
 - DESKTOP99
 - MB8QMGR
 - Queues
 - Alias Queues
 - Local Queues
 - Order.InBound.Queue (403/5000)
 - Order.OutBound.Queue (530/5000)
 - Model Queues
 - Remote Queues

Logged in as Chris

Attributes Events Actions Messages Status Views Topology View

Queue: \\MQM\DESKTOP99\MB8QMGR\Order.OutBound.Queue (530 / 5000)

TXT CSV <H> Export all

Browse criteria string: Page size: 10 All Set and browse

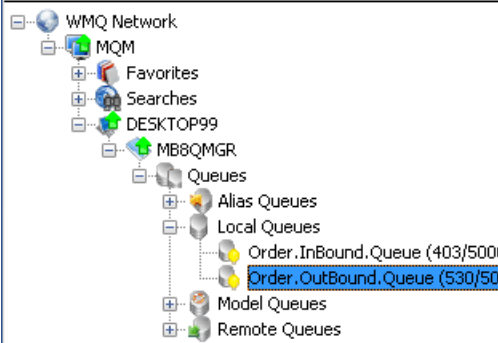
<input checked="" type="checkbox"/>	#	Message Size	MD::Type	MD::Put Time	MD::Put Date	MD::Format	MD::Mes
<input checked="" type="checkbox"/>	1	64	DATAGRAM	20503389	20130623		AMQ MB8QM
<input checked="" type="checkbox"/>	2	64	DATAGRAM	20503389	20130623		AMQ MB8QM
<input checked="" type="checkbox"/>	3	64	DATAGRAM	20503389	20130623		AMQ MB8QM
<input checked="" type="checkbox"/>	4	64	DATAGRAM	20503389	20130623		AMQ MB8QM
<input checked="" type="checkbox"/>	5	64	DATAGRAM	20503389	20130623		AMQ MB8QM
<input checked="" type="checkbox"/>	6	64	DATAGRAM	20503389	20130623		AMQ MB8QM
<input checked="" type="checkbox"/>	7	64	DATAGRAM	20503389	20130623		AMQ MB8QM

Facilities needed

- Create new messages
- Copy Messages to another queue
- Move Messages to another queue
- Edit Message Content
- Delete Messages
- Find Messages based on content
- Save Messages to File
- Read Messages from File (formatted or simple text)

Secure Access to Messages

Logged in as Chris



Attributes Events Actions Messages Status Views Topology View

Queue: \\MQM\DESKTOP99\MB8QMGR\Order.OutBound.Queue (530 / 5000)

View Message 405 in \\MQM\DESKTOP99\MB8QMGR\Queues\Local Queues\Order.InBound.Queue

Msg Id: AMQ MB8QMGR 8:Q # MQ Msg Format: Code Page: 437

Correl Id:

Header	Attribute	Value
MD	Version	1
MD	Report options	0
MD	Msg. type	8
MD	Expiry	-1
MD	Feedback	0
MD	Encoding	546
MD	CCSID	437
MD	Msg. format	
MD	Priority	0
MD	Msg. persistence	0
MD	Backout count	0

Hex Text Decompile XML MsgProp Full Msg. Scroll Loaded Messages: ← →

```
<?xml version="1.0" encoding="UTF-8"?>
<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_DETAIL_DATA>
</TRADE_ENTRY_DATA>
```

Facilities needed

- View Payload
- Restrict Payload
- Edit Payload

Secure Access to Messages

Logged in as Chris

The screenshot shows the IBM MQ Explorer interface. On the left, a tree view displays the hierarchy: WMQ Network > MQM > Favorites > Searches > DESKTOP99 > MB8QMGR > Queues > Alias Queues > Local Queues > Order.InBound.Queue > Order.OutBound.Queue. The 'Order.OutBound.Queue' is selected. On the right, the 'Messages' tab is active, showing a table of messages. The queue path is \\MQM\DESKTOP99\MB8QMGR\Order.OutBound.Queue (530 / 5000). The table has columns: #, Message Size, MD::Type, MD::Put Time, MD::Put Date, MD::Format, and MD::Mes. One message is listed with #1, size 64, type DATAGRAM, put time 20503389, put date 20130623, format AMQ, and message ID MB8QM.


#	Message Size	MD::Type	MD::Put Time	MD::Put Date	MD::Format	MD::Mes
1	64	DATAGRAM	20503389	20130623	AMQ	MB8QM

Facilities needed

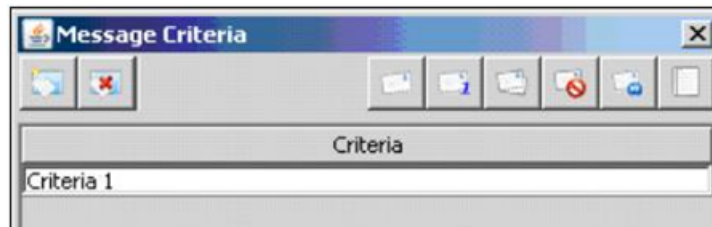
- Create new message criteria
- Copy Messages
- Move Messages
- Edit Message Criteria
- Delete Messages
- Find Messages by criteria
- Save Messages
- Read Messages

Message Criteria

The *Message Criteria* dialog box displays when the **Configure** button is pressed on the *Message Commands* tab (Figure 9-2). Use the *Message Criteria* screen to create or select existing message criteria. To create new:

1. Click the New icon .
2. Enter a name for the message criteria.
3. Click **OK**. You are returned to the *Message Commands* tab.

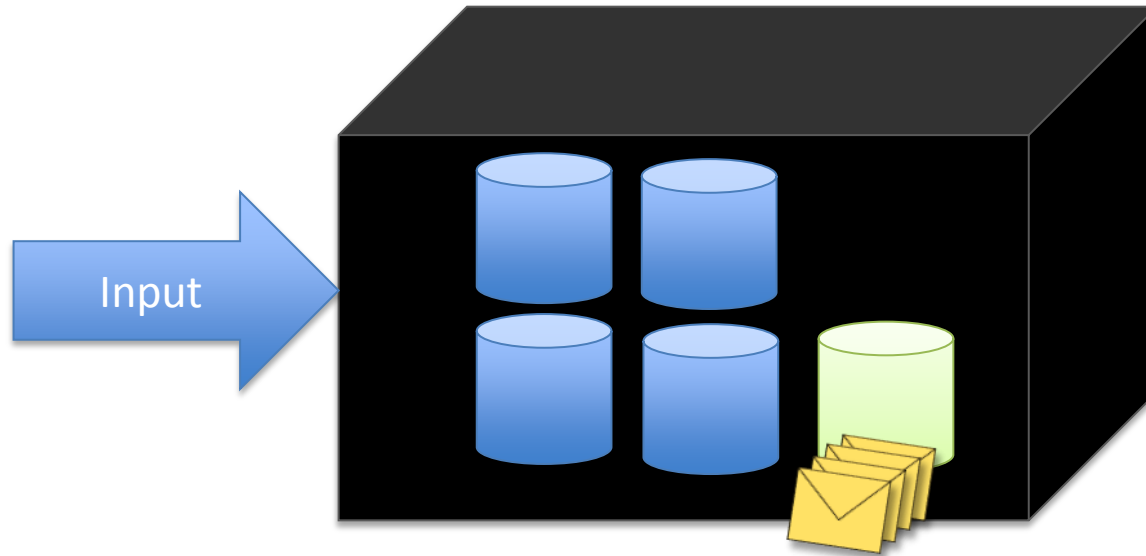
When the criteria are specified, they can be used to browse, copy, move, re-route, and delete messages. Only those messages which conform to the specified criteria will be affected.



I Need...

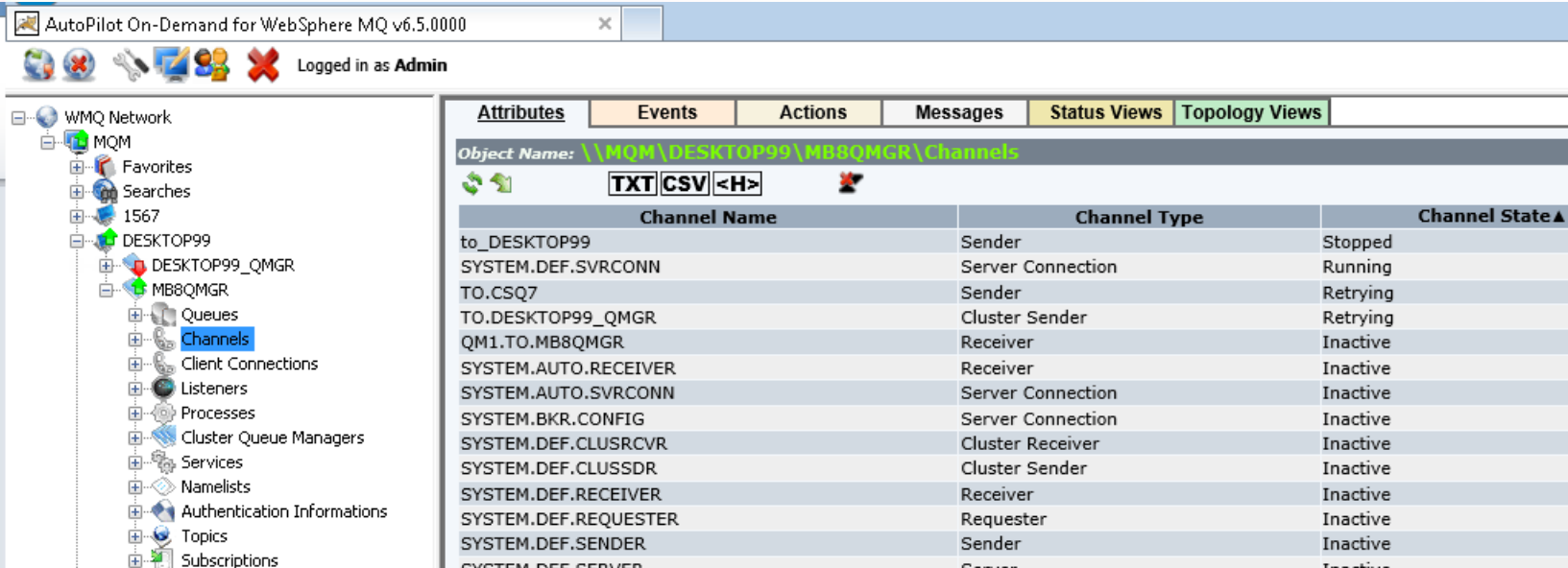


“I need...”



Full Function

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AutoPilot On-Demand for WebSphere MQ v6.5.0000

Logged in as Admin

WMQ Network

- MQM
- Favorites
- Searches
- 1567
- DESKTOP99
 - DESKTOP99_QMGR
 - MB8QMGR
 - Queues
 - Channels**
 - Client Connections
 - Listeners
 - Processes
 - Cluster Queue Managers
 - Services
 - Namelists
 - Authentication Informations
 - Topics
 - Subscriptions

Attributes Events Actions Messages Status Views Topology Views

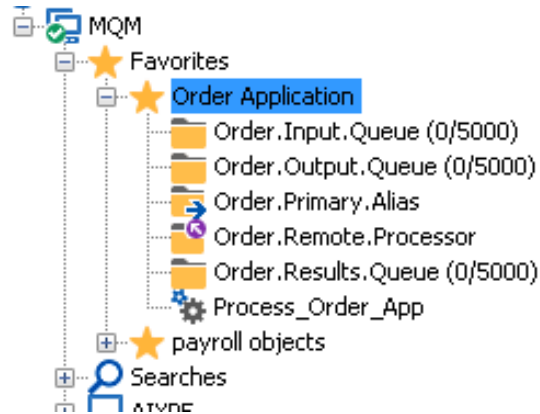
Object Name: \\MQM\DESKTOP99\MB8QMGR\Channels

Channel Name	Channel Type	Channel State ▲
to_DESKTOP99	Sender	Stopped
SYSTEM.DEF.SVRCONN	Server Connection	Running
TO.CSQT	Sender	Retrying
TO.DESKTOP99_QMGR	Cluster Sender	Retrying
QM1.TO.MB8QMGR	Receiver	Inactive
SYSTEM.AUTO.RECEIVER	Receiver	Inactive
SYSTEM.AUTO.SVRCONN	Server Connection	Inactive
SYSTEM.BKR.CONFIG	Server Connection	Inactive
SYSTEM.DEF.CLUSRCVR	Cluster Receiver	Inactive
SYSTEM.DEF.CLUSSDR	Cluster Sender	Inactive
SYSTEM.DEF.RECEIVER	Receiver	Inactive
SYSTEM.DEF.REQUESTER	Requester	Inactive
SYSTEM.DEF.SENDER	Sender	Inactive
SYSTEM.DEF.SERVER	Server	Inactive

Facilities needed

- All WebSphere MQ object
- Secure access
- Stakeholder specific view

Quick Access to What is Needed



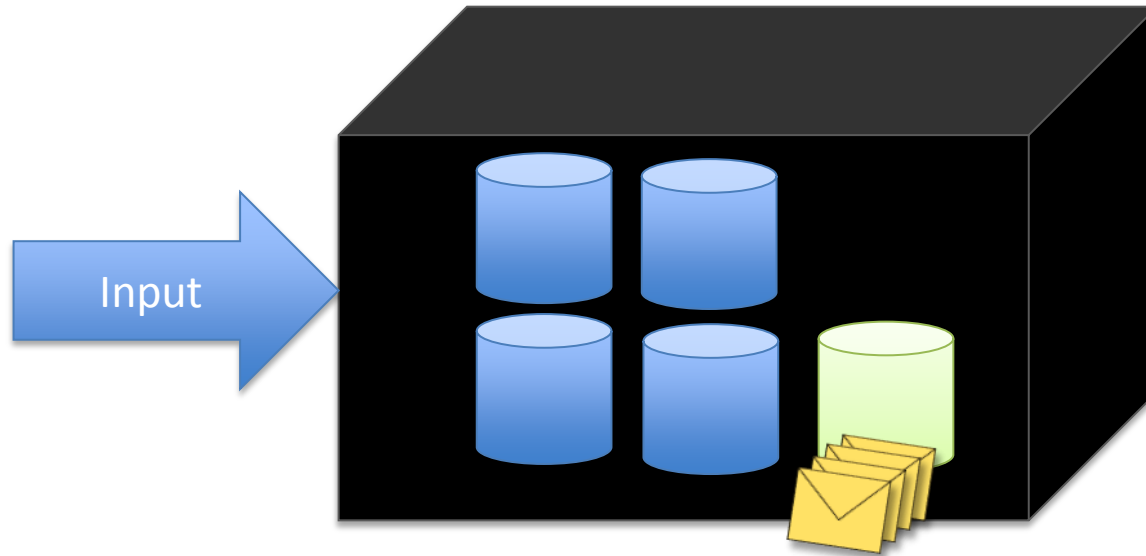
Favorites

- Application Specific Views
- Shared

I Need...

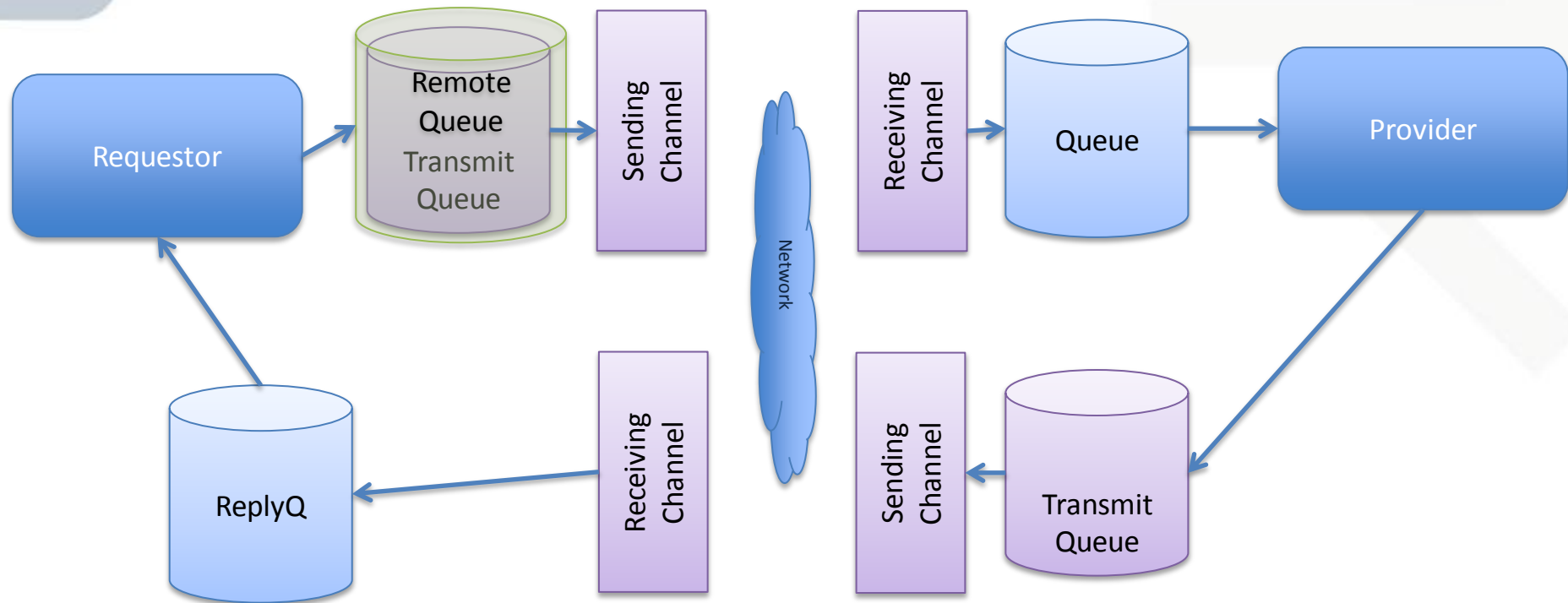


“What happened to my message...”

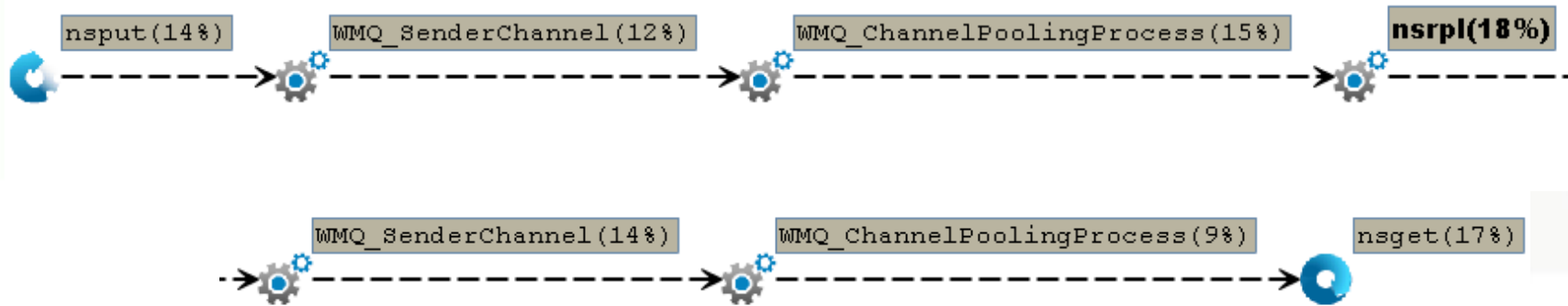


Simple WMQ Example

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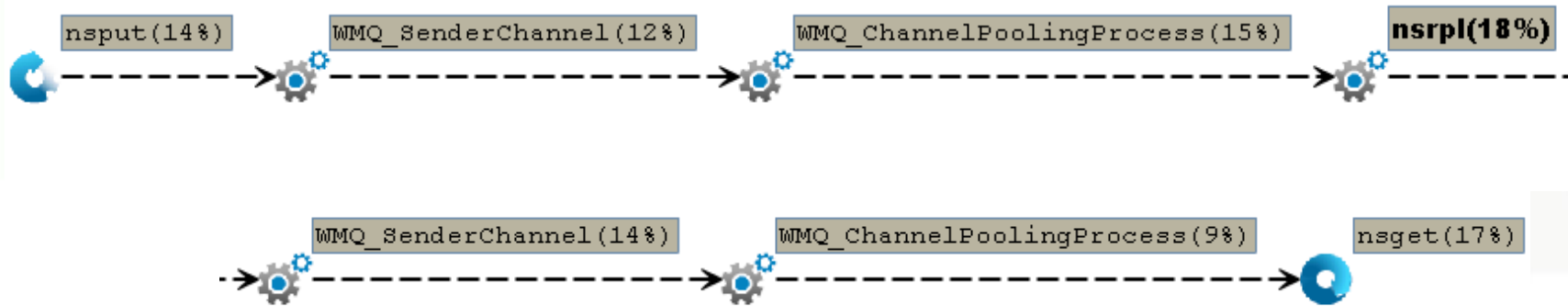


Simple Message Flow



Time	Application	Operation Name	Resource	Elapsed Time (usec)	Message Id	Message Age (usec)	Resource Manager	Completion Code	Server	Ma
2013-09-22 22:15:24.001	nsput	MQPUT	TEST_RQ	29	1	0	DESKTOP99_QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:24.003	nsput	MQCMIT	DESKTOP99_QMGR	0		0	DESKTOP99_QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:35.424	WMQ_SenderChannel	MQGET	MB8QMGR	24	1	11424000	DESKTOP99_QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:35.465	WMQ_ChannelPoolingProcess	MQPUT	TEST	30	1	0	MB8QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:46.062	nsrpl	MQGET	TEST	45	1	22062000	MB8QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:46.062	nsrpl	MQPUT	TEST_REPLY_RQ	24	2	0	MB8QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:46.067	nsrpl	MQCMIT	MB8QMGR	0		0	MB8QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:57.886	WMQ_SenderChannel	MQGET	DESKTOP99_QMGR	23	2	10826000	MB8QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:15:57.886	WMQ_ChannelPoolingProcess	MQPUT	TEST_REPLY	33	2	0	DESKTOP99_QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:16:02.070	nsget	MQGET	TEST_REPLY	36	2	16009000	DESKTOP99_QMGR	Succeeded	DESKTOP99	Mes
2013-09-22 22:16:02.072	nsget	MQCMIT	DESKTOP99_QMGR	0		0	DESKTOP99_QMGR	Succeeded	DESKTOP99	Mes

Simple Message Flow



Transaction Flow Diagram | Transaction Trace (16) | Transaction Milestone (5) | Properties

Transaction ID 12397

☐ Show Containers

☒ Show Group Boxes

Milestone

0.25

9

0.25

9

0.25

9



Summary



Self Service Summary

Increase the opportunities for the stakeholders of WebSphere MQ (and related technologies) will reduce the effort required from the middleware team but must be:

- Safe
 - Doesn't make things worse
- Secure
 - Doesn't compromise the systems
- Simple
 - Your mother could understand it
- Scalable
 - Scale shouldn't limit usage

Thank You!

Questions:
info@nastel.com



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