Installation of ITCAM Agents 7.3 in Windows to monitor MQ queue managers

IBM Techdoc: 7048600
http://www.ibm.com/support/docview.wss?uid=swg27048600

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+++ Objective

The purpose of this document is to provide a tutorial for installation IBM Tivoli Composite Application Manager (ITCAM) for Applications 7.3 in a Windows 7 machine.
The overall objective is to have ITM and ITCAM services monitoring MQ queue managers in Windows and in Linux, and additional tutorials will provide steps for other components.

In order to keep the overall scenario as simple as possible, only the most essential components will be installed. Therefore, this tutorial does not show other ITCAM components; of course, if you need those ITCAM components, then you can go ahead and install/configure them.

These are the chapters:

Chapter 1 provides the details on how to download the software from IBM Passport Advantage.

Chapter 2: describes how to install the ITCAM agents
These are the components that are installed:
  WebSphere MQ Configuration Agent
  WebSphere MQ Monitoring Agent

Chapter 3: Creating a local MQ Monitoring Agent for a queue manager in Windows

Chapter 4: Using the TEP Desktop GUI to monitor the queue manager via the agent

Chapter 5: Creating a remote MQ Monitoring Agent for a remote queue manager in Linux

+ Set of tutorials and webinar

http://www.ibm.com/support/docview.wss?uid=swg27048598
Installation of ITM 6.0.3.2 in Windows to monitor MQ queue managers
IBM Techdoc: 7048598
First tutorial in the series.

http://www.ibm.com/support/docview.wss?uid=swg27048600
Installation of ITCAM Agents 7.3 in Windows to monitor MQ queue managers
IBM Techdoc: 7048600
Second tutorial in the series.

http://www.ibm.com/support/docview.wss?uid=swg27048601
Installation of ITM Agents 6.0.3.2 and ITCAM MQ Agents 7.3 in Linux
IBM Techdoc: 7048601
Third tutorial in the series.

http://www.ibm.com/support/docview.wss?uid=swg27048602
ITM and ITCAM - summary of commands for monitoring MQ queue managers
IBM Techdoc: 7048602

Webinar:
http://www.ibm.com/support/docview.wss?uid=swg27048572
Using ITCAM to monitor MQ queue managers in Linux and Windows
Abstract
This WebSphere Support Technical Exchange is designed to present an introduction on basic
installation of IBM Tivoli Monitoring (ITM) and IBM Tivoli Composite Application Manager
(ITCAM) Agents for WebSphere Messaging to monitor MQ queue managers in Linux and
Windows.
Level of Difficulty: Beginner

+ Reference

The Tivoli monitoring agents for MQ are at version 7.3, but they are described in the
following online manual (7.2.1.1).
At the time of writing this techdoc, there was no online manual for 7.3.

https://www.ibm.com/support/knowledgecenter/SS3JRN_7.2.1.1/com.ibm.itcama.doc_7.2
.1.1/welcome_apps7211.html?lang=en
IBM Tivoli Composite Application Manager for Applications, Version 7.2.1.1

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+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++ Chapter 1: Downloading the software
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Visit IBM Passport Advantage to download the software
There are many components to choose from.
For the basic configuration described in this document, only 1 component was downloaded
from IBM Passport Advantage into the local Windows PC.

IBM Tivoli Composite Application Manager Agents for WebSphere Messaging 7.3 Fixpack 1
Multiplatform English (CN6R0EN)
  File: ITCAM_AGENTS_WS_MSG_7.3_MF.tar.gz
  Size: 2,920MB

The location in the local machine is:
C:\downloads\ITCAM73

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+++ Chapter 2: Installing the ITCAM agents
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Login to the Windows PC as an Administrator.

Go to the location where the code was downloaded.
C:\downloads\ITCAM73

Unzip the file.

Go to the WINDOWS subdirectory:
Launch the installation wizard by double-clicking the setup.exe file in the \WINDOWS
subdirectory

You must do "right click" and select: Run as Administrator
Otherwise, you will get error that you must run it as an administrator.
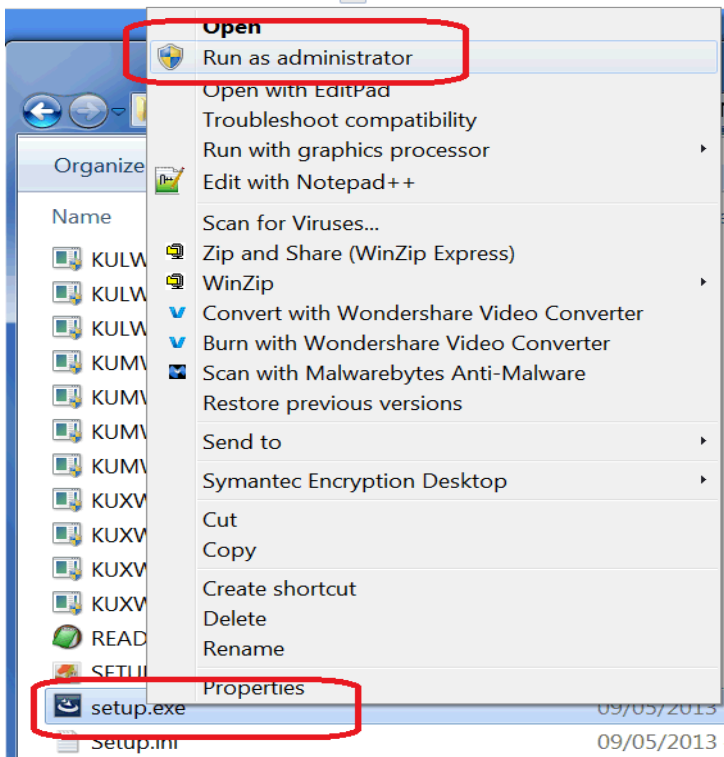
You will see the Welcome installation screen and the licensing agreement.
Follow the prompts.

You will see:
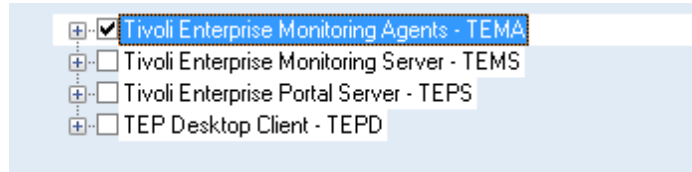
From the Select Features screen select the following:

(*) Tivoli Enterprise Monitoring Agents - TEMA
  (*) 32/64 Bit Agent Compatibility Package (x86-64 only)
  (*) Tivoli Enterprise Monitoring Agent Framework
  (*) Tivoli Enterprise Monitoring Agent Framework (x86-64 only)
  ( ) WebSphere MQ Configuration Agent (NOTE: this is 32-bit)
  (*) WebSphere MQ Configuration Agent (x86-64 only)
  ( ) WebSphere MQ Monitoring Agent (NOTE: this is 32-bit)
  (*) WebSphere MQ Monitoring Agent (x86-64 only)
  ( ) WebSphere Message Broker Monitoring Agent
  ( ) WebSphere Message Broker Monitoring Agent (x86-64 only)
  (*) Tivoli Enterprise Services User Interface Extensions
(*) Tivoli Enterprise Monitoring Server - TEMS
  (*) WebSphere MQ Configuration Agent
  (*) WebSphere MQ Monitoring Agent
  ( ) WebSphere Message Broker Monitoring Agent
(*) Tivoli Enterprise Portal Server - TEPS
  (*) WebSphere MQ Configuration Agent
  (*) WebSphere MQ Monitoring Agent
  ( ) WebSphere Message Broker Monitoring Agent
(*) TEP Desktop Client - TEPD
  (*) WebSphere MQ Configuration Agent
  (*) WebSphere MQ Monitoring Agent
  ( ) WebSphere Message Broker Monitoring Agent
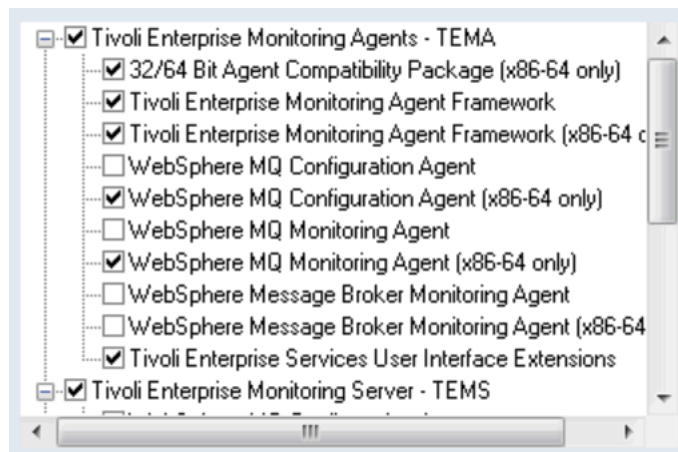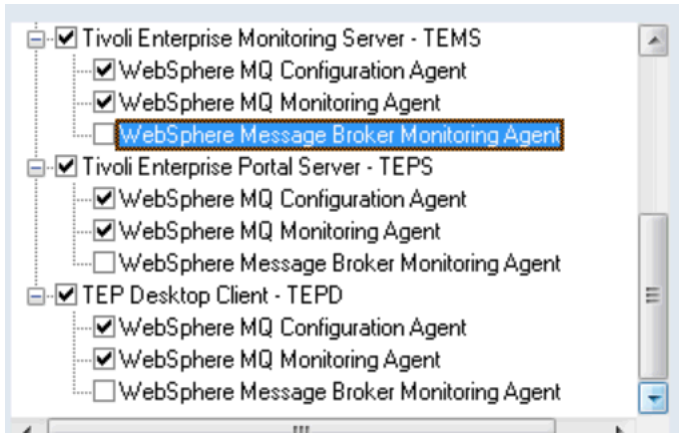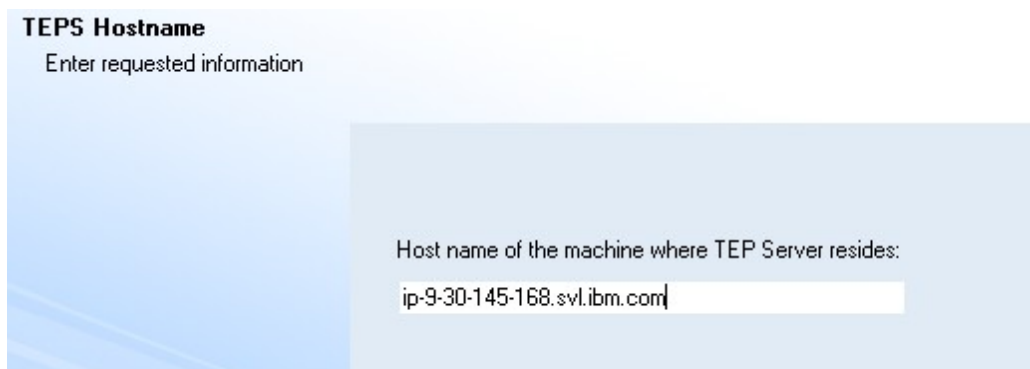
Continue with the prompts.
In the screen for Agent Deployment, select the items that were selected previously:
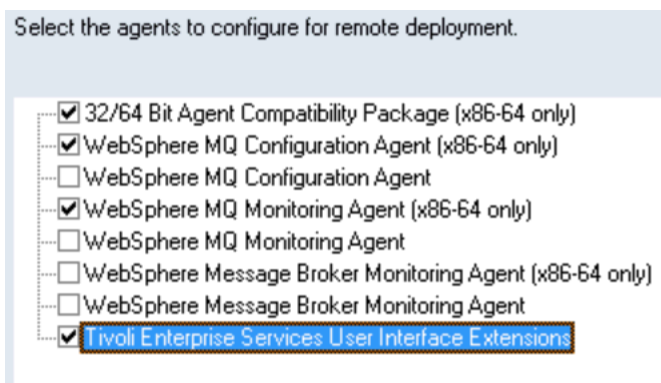
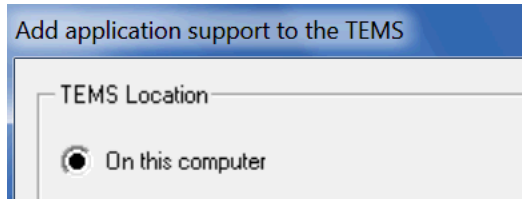You will see the list of items to be installed.
Proceed with the installation.

I used the fully qualified domain name for the host:
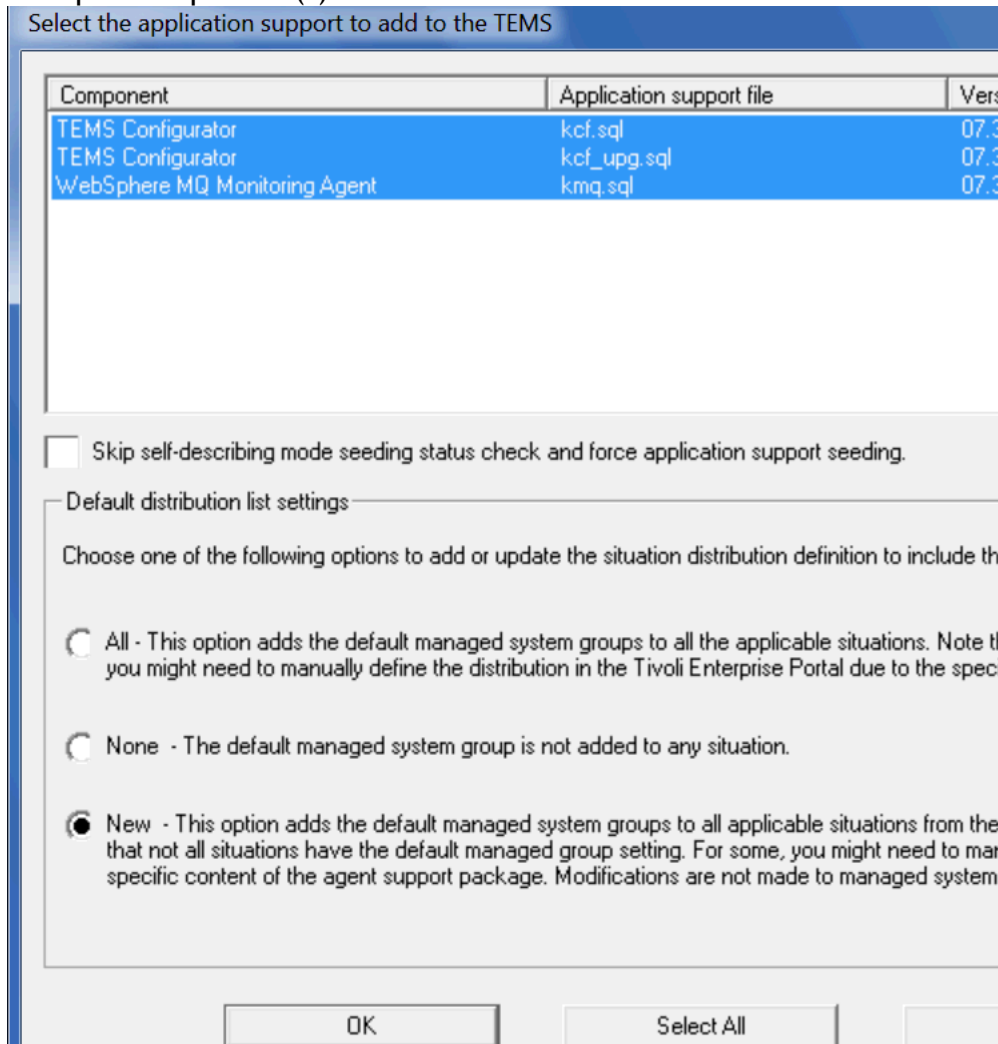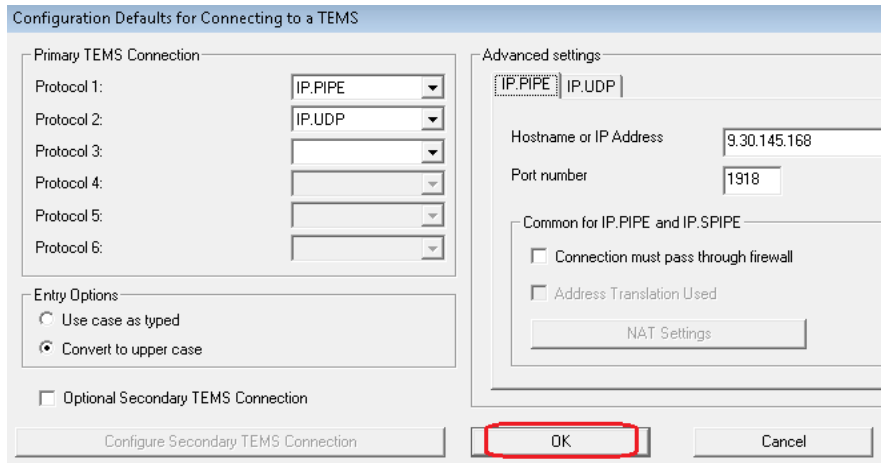 ip-9-30-145-168.svl.ibm.com

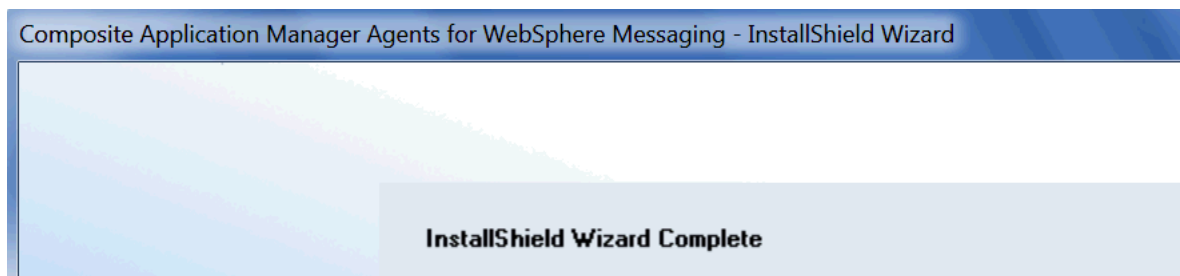Continue with the prompts.

Accept the default for
(*) On this computer

Add application support to the TEMS

TEMS Location

⦿ On this computer

Accept the option " (*) New " and click OK:

Select the application support to add to the TEMS

Component	Application support file	Vers
TEMS Configurator	kcf.sql	07.3
TEMS Configurator	kcf_upg.sql	07.3
WebSphere MQ Monitoring Agent	kmq.sql	07.3

☐ Skip self-describing mode seeding status check and force application support seeding.

Default distribution list settings

Choose one of the following options to add or update the situation distribution definition to include th

○ All - This option adds the default managed system groups to all the applicable situations. Note th
you might need to manually define the distribution in the Tivoli Enterprise Portal due to the speci

○ None - The default managed system group is not added to any situation.

⦿ New - This option adds the default managed system groups to all applicable situations from the
that not all situations have the default managed group setting. For some, you might need to mar
specific content of the agent support package. Modifications are not made to managed system

OK	Select All	

Click OK at the Protocols window:

Wait until the installation finishes

Notice 2 new items in "Manage Tivoli Enterprise Monitoring Services":
  WebSphere MQ Monitoring Agent
  WebSphere MQ Configuration Agent

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+++ Chapter 3: Creating a local MQ Monitoring Agent for a queue manager in Windows
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In this Windows host that has the TEMS, there is a local MQ queue manager called QM_WIN1 and it is listening at port 1414.
Let's create a dedicated instance of the MQ Monitoring Agent for this queue manager.

Note: To create an MQ Monitoring Agent for a queue manager located in a remote box, see Chapter 5 of this techdoc.

Start the TEP Desktop.
See Chapter 4 of the related techdoc on installing ITM:
   Chapter 4: Starting the Tivoli Enterprise Portal GUI

From the left panel, expand the view and click on "Agent Management Services".
Notice that on the right panel, "Agent Management Status" you will see:
  WebSphere MQ Monitoring Agent
  WebSphere MQ Configuration Agent
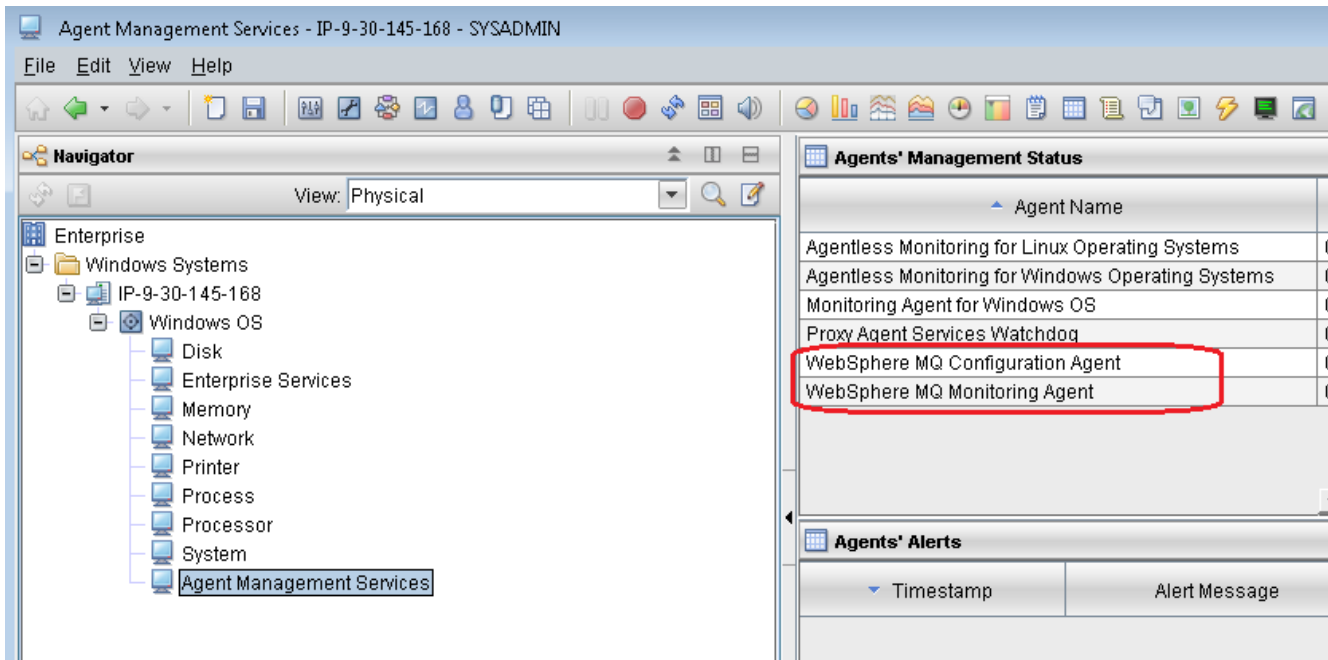
From the Manage Tivoli Enterprise Monitoring Services, select:
  WebSphere MQ Monitoring Agent
right click and select "Create Instance ..."
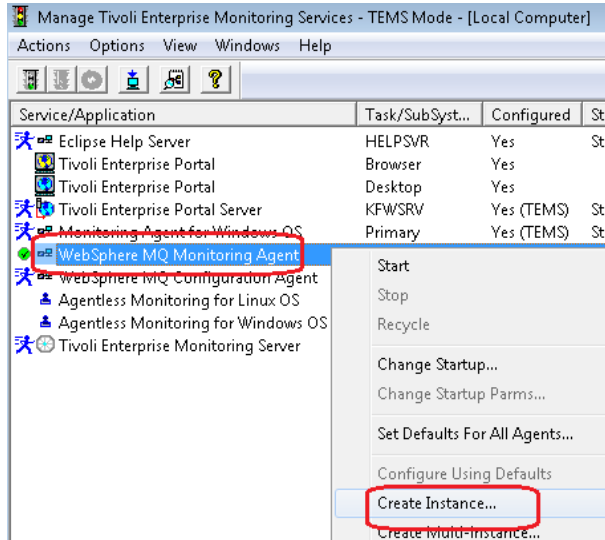
Provide the instance name. In this example it is:
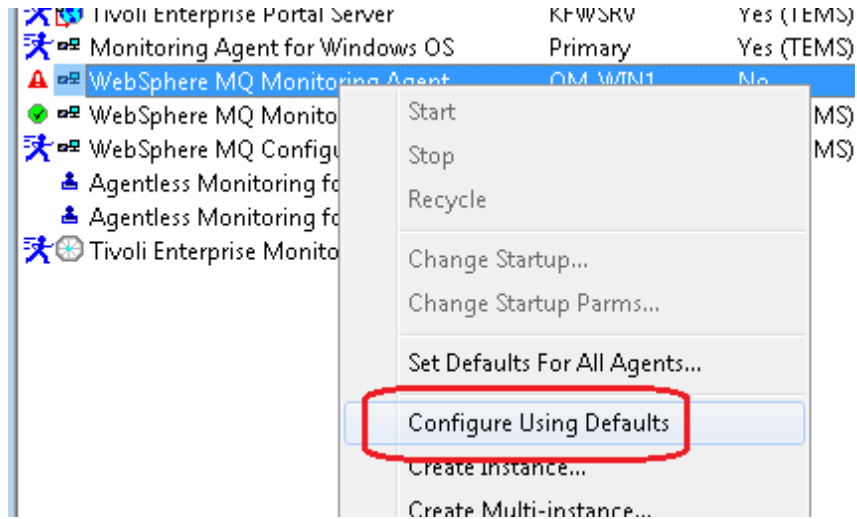 QM_WIN1
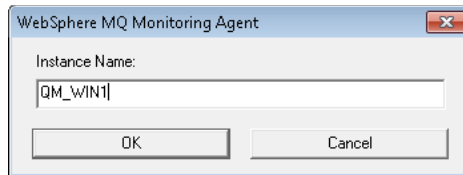
Notice that a new entry is added:
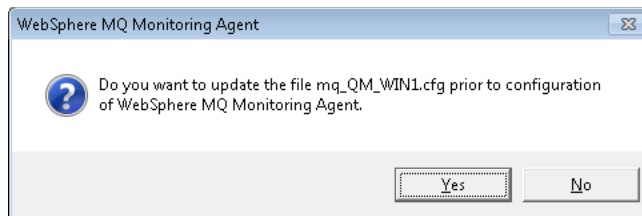

We need to configure it now.

Notice that the new entry for QM_WIN1 has the following values:
  Column: Configured   Value: No
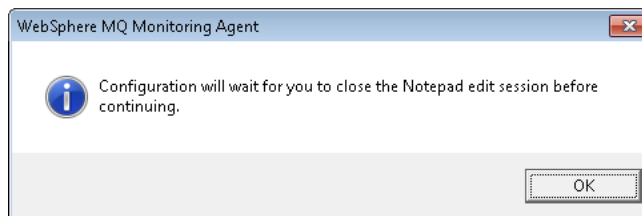 Column: Configuration   Value: N/A

From Tivoli Enterprise Monitoring Services, right-click WebSphere MQ Monitoring Agent and select Configure Using Defaults

You are prompted to edit the agent's .cfg file. (The primary agent's file is named mq.cfg.)

Click Yes

A Notepad session opens for the corresponding cfg file:

C:\IBM\ITM\TMAITM6_x64\mq_QM_WIN1.cfg

Supply the WebSphere MQ queue manager name in the MANAGER NAME() and MGRNAME()
parameters of the .cfg file.
In this case it is: QM_WIN1

WARNING!! Do NOT enclose the name within quotes! This will cause runtime errors!

You will need to add a statement for SET AGENT and provide the name of the host.

The SET AGENT is useful to refine the identification of a queue manager.
It is not necessary in all cases, but it is a good idea to set it always.
But it is needed in 2 situations:
- When working with multi-instance queue managers.
- When doing remote monitoring.

+ begin changes
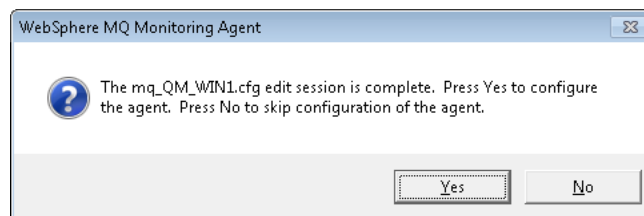SET MANAGER NAME(QM_WIN1)
SET QUEUE NAME(*) MGRNAME(QM_WIN1) QDEFTYPE(PREDEFINED)
SET CHANNEL NAME(*) MGRNAME(QM_WIN1)
SET AGENT NAME(9.30.145.168)
+ end changes

Save and exit the Notepad session.
Click Yes at the next prompt to continue.

You are returned to the Tivoli Enterprise Monitoring Services window.
This completes the initial configuration, and the agent is ready to be started.

Notice that the new entry for QM_WIN1 has the following values:
Column: Configured   Value: Yes(TEMS)
Column: Configuration   Value: up-to-date

Start the instance:

If the start is successful (no errors were encountered), then the status will be updated to "Started":

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+++ Chapter 4: Using the TEP Desktop GUI to monitor the queue manager via the agent
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Start the TEP Desktop.
Notice that there is now an entry under the host and it is for:
  MQSERIES - QM_WIN1
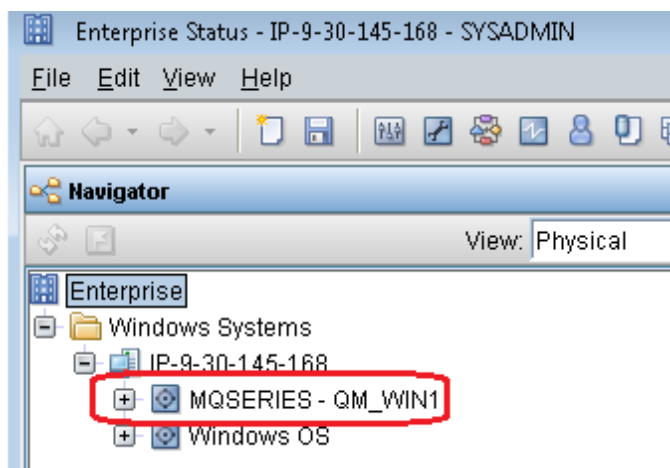
Expand it and select "Queue Manager Status"

This is what the right side of the window shows:

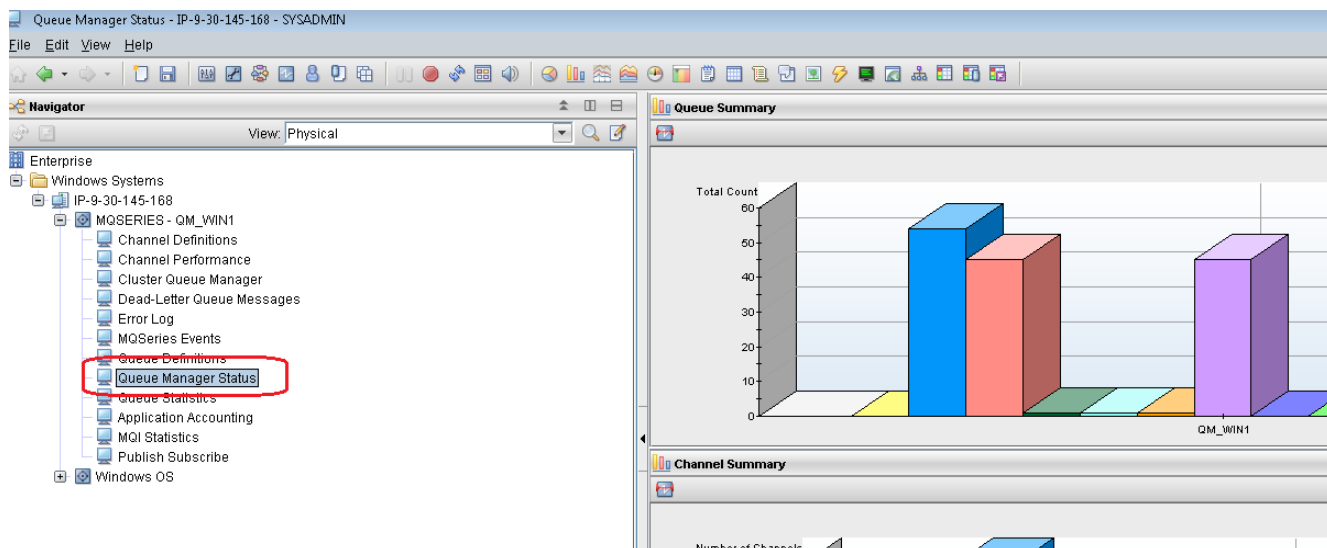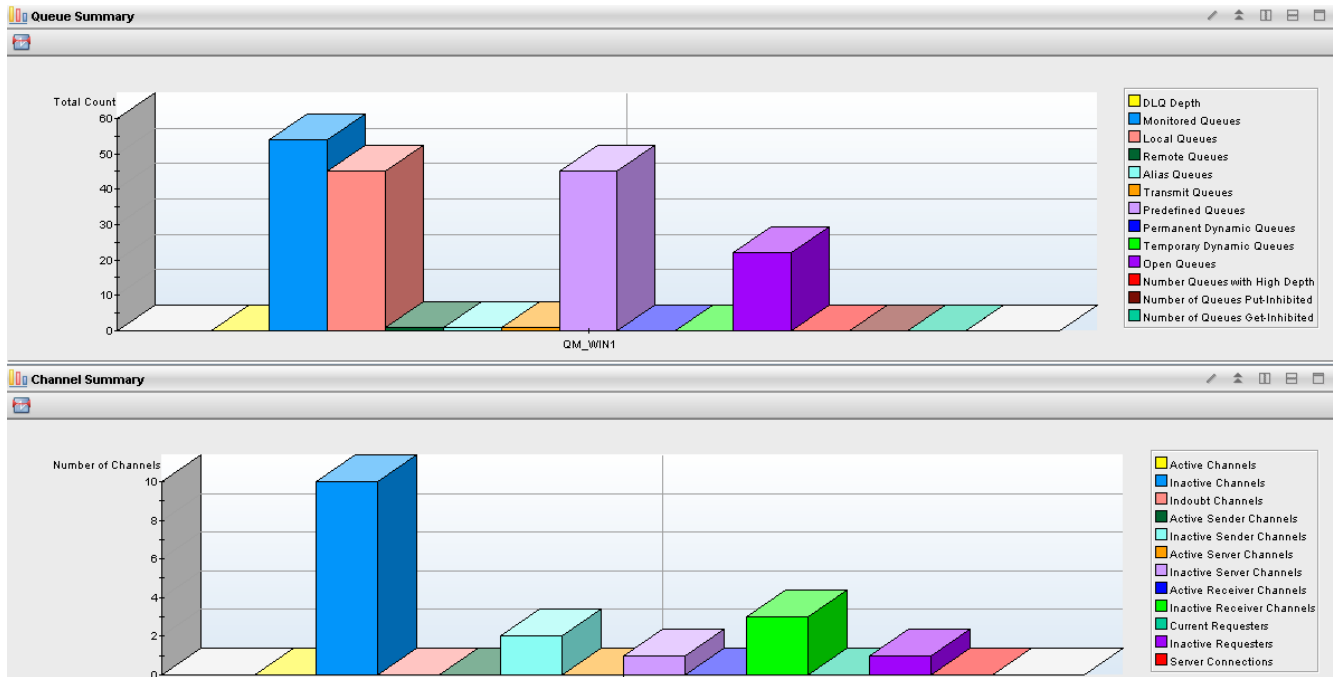And the bottom. Notice that the Status of the queue manager is: Active

QMgr Name	Host Name	QMgr Subsys	Host Jobname	Start Date & Time	QMgr Status	QMgr Type	DLQ Depth	DLQ Maximum	Monitored Queues	Local Queues	Remote Queues	Alias Queues	Transmit Queues	Predefined Queues
QM_WIN1	IP-9-30-145-168			03/01/16 12:32:21	Active	NT	0	0	54	45	1	1	1	45

Let's do a quick and simple experiment: stop the queue manager and see what happens within the context of the monitoring.

From the MQ Explorer in the box, stop the queue manager.
Then the MQ Explorer will show that the queue manager is now stopped:
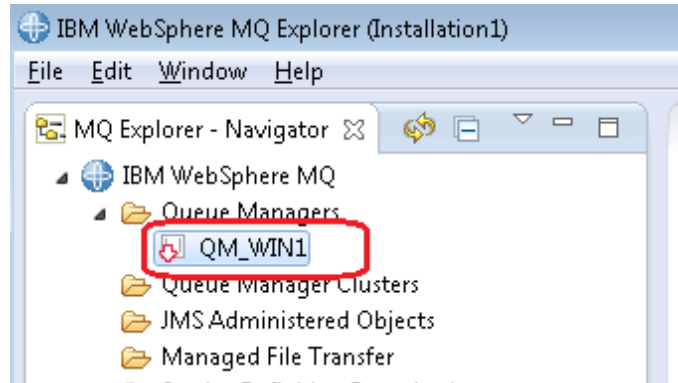
Refresh the workspace in the TEP Desktop:
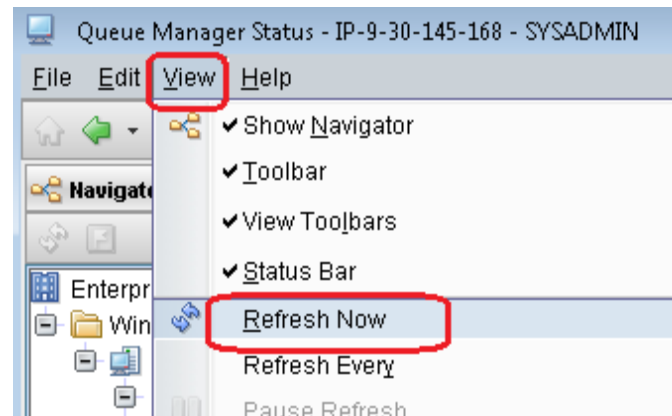
Also let's contract the view.

Notice that there is a red marker at the highest level:
  Enterprise
... and that there is a red marker for:
  Windows Systems
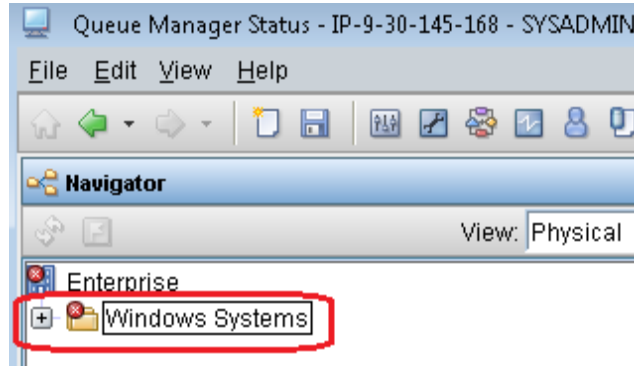
Let's expand the "Windows Systems" and let's image for the moment that we had 10 different Windows hosts that were monitored.
We could see a red marker for the monitored host that had a "problem".
In this case:
  IP-9-30-145-168
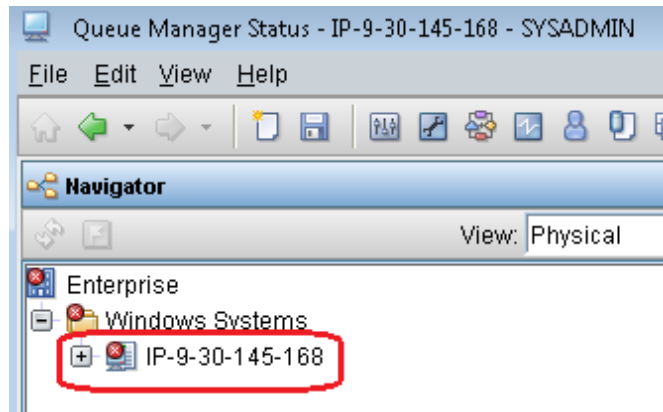
Let's expand the affected host.
We will see the red marker for the item:
  MQSERIES - QM_WIN1
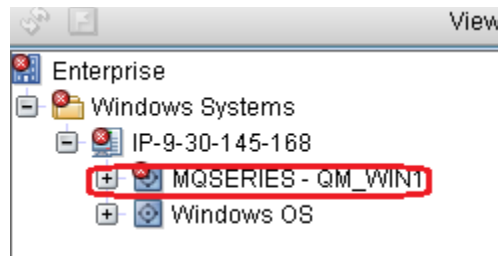
Let's expand the affected item.
Notice that there is a red marker at:
   Queue Manager Status
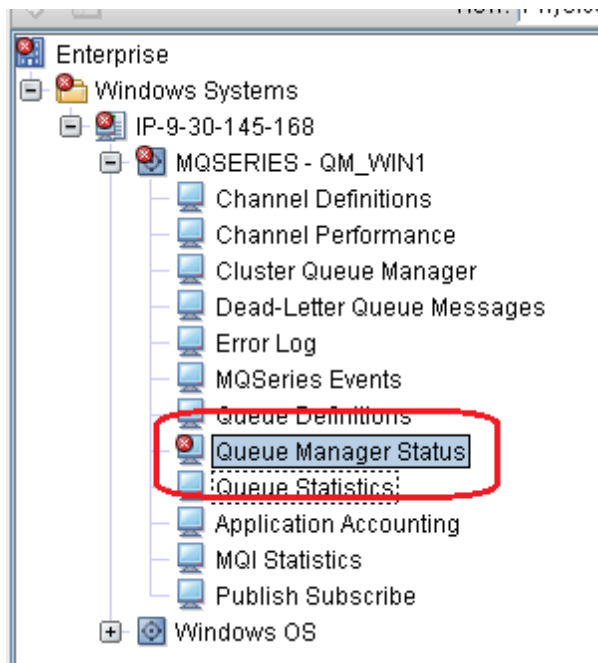
Scroll down in the TEP Desktop to see the bottom, and we will see that there is a red marker at the column for:
   Qmgr Status
Saying: QueueManager Not Available

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+++ Chapter 5: Creating a remote MQ Monitoring Agent for a remote queue manager in
Linux
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In the Chapter 3 of this techdoc, the queue manager to be monitored was a "local" queue manager to the TEMS, and needed a "local" MQ Monitoring Agent.

In this Chapter 5, the queue manager to be monitored is a "remote" queue manager to the TEMS and there are no ITM Agents nor ITCAM Agents installed in that remote box.

Scenario:
Host RHEL1 is a Linux box but it does NOT have any components for ITM and ITCAM.
Is it possible to remote monitor from the TEMS in Windows, a remote queue manager called QM80RHEL1 (port 1422) located in host RHEL1?

Answer:
Yes, it is necessary to define a Server-Connection channel in the queue manager and then add a corresponding Client-Connection channel in a CCDT and make available the CCDT file to the TEMS in Windows.
It is necessary to define a remote MQ Monitoring Agent for the queue manager.

+ References

http://www.ibm.com/support/knowledgecenter/en/SS3JRN_7.2.1/com.ibm.omegamon.me s_dist.doc_7.1/t_setup_eviron_remote.html
Tivoli Composite Application Manager for Applications > Tivoli Composite Application Manager for Applications 7.2.1 > WebSphere Message Broker Monitoring, WebSphere MQ Monitoring, and WebSphere MQ Configuration agents > WebSphere MQ Monitoring Agent User's Guide > Monitoring remote queue managers >
Setting up the environment for remote queue manager monitoring

http://www-01.ibm.com/support/docview.wss?uid=swg21503459
Remote monitoring multiple Queue Managers with ITM MQ agent

http://www-01.ibm.com/support/docview.wss?uid=swg21700672
Remote monitoring on the MQ Appliance environment

++ Steps

Follow the directions mentioned in this techdoc in:
Chapter 3: Creating a local MQ Monitoring Agent for a queue manager in Windows

Specify the desired name of the queue manager: QM80RHEL1

A Notepad session opens for the corresponding cfg file:

C:\IBM\ITM\TMAITM6_x64\mq_QM80RHEL1.cfg

Supply the WebSphere MQ queue manager name in the MANAGER NAME() and MGRNAME()
parameters of the .cfg file.
In this case it is: QM80RHEL1

WARNING!! Do NOT enclose the name within quotes! This will cause runtime errors!

There are 2 important differences with respect to the local agent configured in Chapter 3.
1) In the statement for SET MANAGER you MUST add: REMOTE(YES)
2) In the statement for SET AGENT you MUST provide the name of the Queue Manager (not
the name of the host).

+ begin changes
SET MANAGER NAME(QM80RHEL1) **REMOTE(YES)**
SET QUEUE NAME(*) MGRNAME(QM80RHEL1) QDEFTYPE(PREDEFINED)
SET CHANNEL NAME(*) MGRNAME(QM80RHEL1)
SET AGENT NAME(QM80RHEL1)
+ end changes

Save and exit the Notepad session.

Continue with the steps for the configuration of the agent.

After the agent is configured, do NOT start it yet!
Additional steps are necessary.

Notice that the userid "system" is going to be passed by ITM in Windows when contacting
the remote MQ queue manager in Linux.
You may get the following MQ errors in the remote Linux box:

08/28/2016 03:34:06 PM - Process(26276.20) User(mqm) Program(amqrmppa)
          Host(ip-9-30-145-118) Installation(Installation2)
          VRMF(8.0.0.4) QMgr(QM80RHEL1)
AMQ9557: Queue Manager User ID initialization failed for 'system'.
EXPLANATION:
The call to initialize the User ID 'system' failed with CompCode 2 and Reason 2035.

To avoid the above security error AMQ9557 (reason code 2035 MQRC_NOT_AUTHORIZED, in the remote Linux box you can do several things.
Note: The main focus of this tutorial is on setting MQ for monitoring. The focus is not on all the security aspects related to MQ remote access, thus, I am keeping it simple.
1) If your organization has already established standards for MQ remote access, then follow them.
2) For test/development system, you could create the necessary userid and a mapping of users.
2.a) As user root, you need to create a user id called "system" and add it to the group "mqm".
    useradd -u 515 -g mqm -s /bin/bash -d /home/system -m system
2.b) Create a channel authentication record that maps the client user "system" to the MCA user "mqm".

Create a server-connection channel.
Note:
The naming of the channel in this example is mostly used with MQ clusters.
Use the naming standards for you organization.

In the remote MQ queue manager (QM80RHEL1) in the Linux box.
Use runmqsc to define a Server-Connection channel:
  DEFINE CHANNEL(TO.QM80RHEL1) CHLTYPE(SVRCONN) TRPTYPE(TCP)

Then, in the queue manager local (QM_WIN1) in the Windows box that has the TEMS, define a Client-Connection channel, which will be added to the CCDT file for that queue manager:
  DEFINE CHANNEL(TO.QM80RHEL1) CHLTYPE(CLNTCONN) TRPTYPE(TCP)
CONNAME('9.30.145.118(1422)') QMNAME(QM80RHEL1)

The CCDT file will be updated. It is located at:

C:\ProgramData\IBM\MQ\qmgrs\QM_WIN1\@ipcc>dir
08/28/2016 03:24 PM   4,204 AMQCLCHL.TAB
03/01/2016 01:32 PM   8 AMQRSYNA.DAT

Copy the CCDT file from the MQ queue manager to the ITM location:
C:\IBM\ITM\TMAITM6_x64

The command is a long one. Even though it may appear in 2 lines in this note, it is only 1 long line:
  COPY C:\ProgramData\IBM\MQ\qmgrs\QM_WIN1\@ipcc\AMQCLCHL.TAB
C:\IBM\ITM\TMAITM6_x64

Now a copy of the CCDT file resides at:
  C:\IBM\ITM\TMAITM6_x64\AMQCLCHL.TAB

Now you can start the remote MQ Monitoring Agent from the TEMS Services GUI.

<u>NEXT ACTION:</u>

See the tutorial:
http://www.ibm.com/support/docview.wss?uid=swg27048601
Installation of ITM Agents 6.0.3.2 and ITCAM MQ Agents 7.3 in Linux
IBM Techdoc: 7048601

+++ end