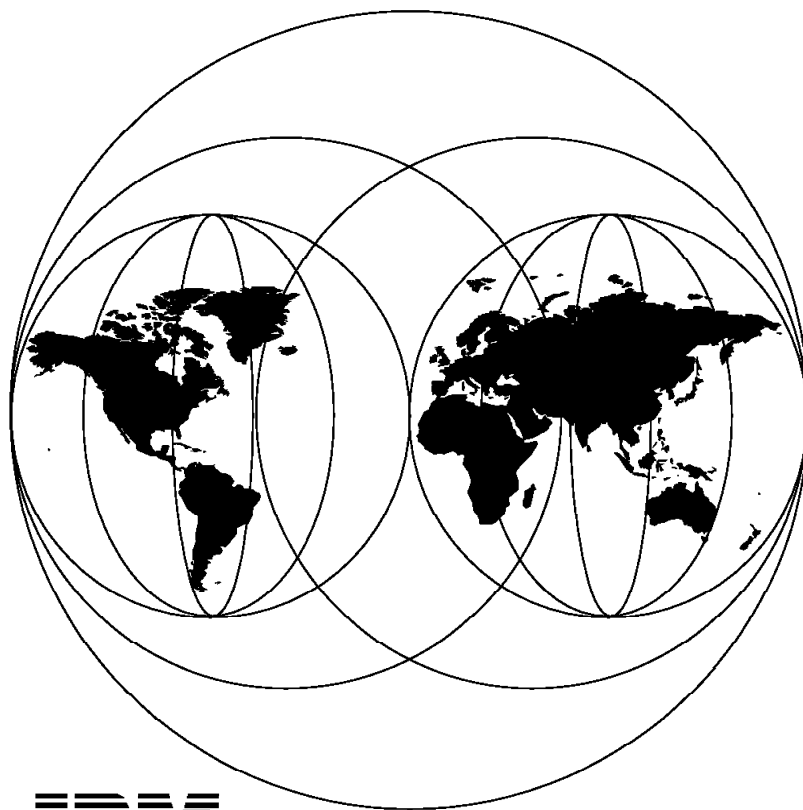


Examples of Using the TME 10 Module for MQSeries

October 1997



**International Technical Support Organization
Raleigh Center**



International Technical Support Organization

SG24-2134-00

Examples of Using the TME 10 Module for MQSeries

October 1997

Take Note!

Before using this information and the product it supports, be sure to read the general information in Appendix F, "Special Notices" on page 85.

First Edition (October 1997)

This edition applies to Version 1.0 of TME 10 Module for MQSeries.

Comments may be addressed to:

IBM Corporation, International Technical Support Organization

Dept. HZ8 Building 678

P.O. Box 12195

Research Triangle Park, NC 27709-2195

When you send information to IBM, you grant IBM a non-exclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

© **Copyright International Business Machines Corporation 1997. All rights reserved.**

Note to U.S. Government Users — Documentation related to restricted rights — Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

Contents

Figures	v
Preface	vii
The Team That Wrote This Redbook	vii
Comments Welcome	viii
Chapter 1. TME 10 Module for MQSeries Overview	1
1.1 Introduction	1
1.2 Supported Platforms	1
1.3 Software Prerequisites	2
1.4 TME 10 Module for MQSeries Requirements	2
1.5 What the TME 10 Module for MQSeries Provides	3
1.5.1 Automated Software Distribution	3
1.5.2 MQSeries Configuration	3
1.5.3 Comprehensive Monitoring	3
1.5.4 Centralized MQSeries Management	3
1.5.5 Rules-Based Event Correlation	3
1.5.6 Automated Operations	4
1.5.7 Policy-Based MQSeries Configuration and Administration	4
Chapter 2. Using the TME 10 Module for MQSeries	5
2.1 Installing the TME 10 Module for MQSeries on AIX	5
2.2 Executing and Scheduling the Queue Manager Discovery Task	12
2.3 Installing and Configuring of the TEC Adapter	17
2.4 Use of Event Correlation in the TEC	23
2.5 Using TME 10 Distributed Monitoring to Monitor the MQSeries Command Server	25
2.6 Monitoring and Configuring an MVS MQSeries Qmgr	28
2.6.1 MQSeries MQSC Commands Involving MVS	29
2.6.2 MQSeries Events Involving MVS and TEC	31
2.7 Upgrading the TME 10 Module for MQSeries	36
2.8 Customizing the Supplied TEC Tasks	37
2.9 Using Tivoli for Filtering of MQSeries Event Messages	44
2.10 Installation of MQSeries on AIX and Windows NT	48
2.11 Installing and Configuring an MQSeries Application	55
2.12 Summary Comments	58
Appendix A. TME 10 Module for MQSeries Directory Structure	59
Appendix B. Shell Script to Remove TME 10 Module for MQSeries	61
Appendix C. Additional Information on Installing MQSeries on Windows NT	63
Appendix D. TME 10 MQSeries Module - Oriented Labs	65
D.1 Installing and Basic Use of the TME 10 MQSeries Module	65
D.1.1 Configuring TEC for the TME 10 MQSeries Module	67
D.1.2 Generating an MQSeries Performance Event and a TEC Example	69
D.1.3 Building and Using File Packs	71
D.1.4 An Additional File Distribution Lab	74
D.1.5 Command Access to MQSeries MQM MVS/ESA Using TME 10 Module for MQSeries	78

D.1.6 TEC and MQSeries MQM MVS/ESA Using TME 10 Module for MQSeries	81
Appendix E. Changes in the TME 10 Module for MQSeries V1.0 Revision B	83
Appendix F. Special Notices	85
Appendix G. Related Publications	87
G.1 International Technical Support Organization Publications	87
G.2 Redbooks on CD-ROMs	87
G.3 Other Publications	87
How to Get ITSO Redbooks	89
How IBM Employees Can Get ITSO Redbooks	89
How Customers Can Get ITSO Redbooks	90
IBM Redbook Order Form	91
Index	93
ITSO Redbook Evaluation	95

Figures

1.	Installing the TME Module for MQSeries	6
2.	Confirming the Installation Dialog	6
3.	Installation Completion Dialog	7
4.	New TME desktop with MQSeries Icon	8
5.	Select MQS Utility Task	8
6.	Select MQS Create Management Domain	9
7.	MQS Create Management Domain Dialog	9
8.	Created Policy Region	10
9.	Selecting TMR Roles	10
10.	Assigning MQS Roles	11
11.	Tasks in the MQS_ITSO Policy Region	11
12.	Selecting Discover Queue Managers Job	13
13.	Output from Discover Queue Manager Task	14
14.	Additional Icon on MQS_ITSO Policy Region	15
15.	Scheduling the Discover Queue Managers Job	16
16.	Checking the Scheduler	17
17.	Installing the TME 10 TEC Adapter for MQSeries	18
18.	Confirming the Installation Dialog	18
19.	Installation Completion Dialog	19
20.	Select Configure TEC Adapter	20
21.	Configure TEC Adapter	20
22.	Configure TEC Adapter Output	21
23.	Select Configure Event Server	21
24.	Configure Event Server	22
25.	Configure Event Server Output	22
26.	Select Assign Event Groups	23
27.	Assign MQSeries Event Group	23
28.	Queue Manager Quiescing Event in TEC	24
29.	Starting Queue Manager RS60002	24
30.	Updated TEC	25
31.	Selecting the TME 10 Distributed Monitoring Monitors	25
32.	Selecting the TME 10 Distributed Monitoring Monitors	26
33.	Selecting the Command Server Monitor	26
34.	Configuring the Command Server Monitor	27
35.	TEC Event	27
36.	Set up the Display Queue Manager Attributes Task	29
37.	MQS Display Queue Manager	30
38.	MQS_ITSO Display Queue Manager Attributes Output	30
39.	MQSeries Event Group	32
40.	MQ_GET_INHIBITED Event	32
41.	MQ_BRIDGE_STARTED Event	33
42.	MQ_CHANNEL_STARTED Event	34
43.	MQ_UNKNOWN_REMOTE_Q_MGR Event	35
44.	MQ_CHANNEL_CONV_ERROR Event	36
45.	TME 10 Module for MQSeries TEC Tasks	38
46.	mqstec.tll	39
47.	mqs_enabtrg.sh	42
48.	Configuring the Event Server	43
49.	New TEC Task Library	43
50.	Modified TEC Adapter MQSeries Configuration File	45
51.	Select Event Groups	46

52.	Select Create New Event Group	46
53.	Adding a New Filter	47
54.	Select Assign Event Groups	47
55.	Select Assign Event Groups	48
56.	Select Install Task	48
57.	Select Create AIX File Pack	49
58.	Select Create AIX File Pack	49
59.	Output from Create AIX File Pack Job	50
60.	Select MQS_ITSO File Packs	50
61.	Select aixserver File Pack	51
62.	Selecting Properties	52
63.	Properties of the aixserver File Pack	53
64.	Properties of the Nested File Pack	53
65.	Create Windows NT File Pack	54
66.	Distributing the ntserver File Pack	55
67.	Select MQS_ITSO File Packs	56
68.	Select Create Profile	56
69.	Create aixpingpong Profile	57
70.	Enter Files for File Pack	57
71.	File Package UNIX Options	58
72.	Example Shell Used to Remove TME 10 Module for MQSeries	61
73.	MQS Configure Event Server Panel	69
74.	Create Local Queue Panel	70
75.	MQS Create AIX File Pack	71
76.	Start Distribution for the Selected Install MQSeries FilePack	72
77.	Start Distribution for the Selected MQSeries Application FilePack	73
78.	MQS Create AIX File Pack	75
79.	MQS Create AIX File Pack Output	76
80.	MQS_ITSO FilePacks Profile Manager	76
81.	File Package Properties	77
82.	MQS Display Channel Status	79
83.	MQS Display Channel Status Output	80
84.	runmqsc Command Remote to MVS	80
85.	TEC Console Showing Channel Stopped	82
86.	TEC Console Showing Channel Started	82

Preface

This redbook positions the new TME 10 Module for MQSeries in terms of both MQSeries and TME 10. The TME 10 Module for MQSeries provides a centralized systems management tool for MQSeries and allows the configuration and monitoring of MQSeries resources.

This redbook helps you install, tailor and configure the new TME 10 Module for MQSeries. It does this by providing real examples of how to perform some of the basic tasks provided by this module. Examples cover installation, use of MQSeries events by the TME 10 Enterprise Console and TME 10 Distributed Monitoring of MQSeries among others.

This redbook also helps you design/create a solution to managing an MQSeries network.

This redbook also gives a broad understanding of the various tasks provided by the TME module and also gives an insight into the underlying architecture of the module. This is used if a user needs to track down possible error situations.

Chapter 1 contains a short description of the TME 10 Module for MQSeries and its capabilities. Chapter 2 contains real-life examples guiding the user through some of the main tasks that will be required for managing MQSeries.

Examples that are covered are:

- Installation of the TME 10 Module for MQSeries on AIX
- Executing and Scheduling the Queue Manager Discovery task
- Installation and Configuration of the TEC adapter
- Use of Event Correlation in the TEC
- Using Distributed Monitoring to monitor the MQSeries Command Server
- Monitoring and Configuring an MVS MQSeries Queue Manager
- Customizing the supplied TEC Tasks
- Using Tivoli for filtering of MQSeries event messages
- Installation of MQSeries on AIX and Windows NT
- Installing and Configuring of an MQSeries application
- Upgrading the TME 10 Module for MQSeries

The appendix includes exercises that are used at ITSO workshops related to material covered in the document.

The Team That Wrote This Redbook

This redbook was produced by a team of specialists from around the world working at the Systems Management and Networking ITSO Center, Raleigh.

Roger Meli, IBM ISC Hursley
Ikuo (Gan) Iwamura, IBM Japan
Claudia Degli Esposti, IBM Italy

The advisors of this project were:

Dave Shogren, ITSO Raleigh Center
Stefan Uelpenich, ITSO Raleigh Center
Dieter Wackerow, ITSO Raleigh Center

Thanks to the following people for their invaluable contributions to this project:

Carla Sadtler
Paul Fearn
Kathy Hebblethwaite
Fred Plassman
all of the Systems Management and Networking ITSO Center, Raleigh.

Jen Wang
Mary Beth Kristoff
Ron Cherveney
Robert Silver
Barry Sheehan
Kevin Cunningham
all of Tivoli Systems, an IBM Company

Request for Feedback

Readers of this document are encouraged to feed back any information or comments regarding *any* of the material in this document. Please send your comments to:

Dave Shogren or Stefan Uelpenich
ITSO-Raleigh

INTERNET: shogren@vnet.ibm.com
uelpenich@vnet.ibm.com

VNET: SHOGREN at WTSCPOK or STEFANU at WTSCPOK

or: IBM Corporation HZ8D/B678/D100
Attn: Dave Shogren / Stefan Uelpenich
Building 678 Rm D100
1001 Winstead Dr.
Raleigh (Cary) NC 27513

All source code referred to in this book will be available after publication of this redbook at the Redbooks Web site: <http://www.redbooks.com>

Comments Welcome

Your comments are important to us!

We want our redbooks to be as helpful as possible. Please send us your comments about this or other redbooks in one of the following ways:

- Fax the evaluation form found in "ITSO Redbook Evaluation" on page 95 to the fax number shown on the form.

- Use the electronic evaluation form found on the Redbooks Web sites:
For Internet users <http://www.redbooks.ibm.com>
For IBM Intranet users <http://w3.itso.ibm.com>
- Send us a note at the following address:
redbook@vnet.ibm.com

Chapter 1. TME 10 Module for MQSeries Overview

This chapter gives a brief overview of the TME 10 Module for MQSeries.

1.1 Introduction

MQSeries solves a critical problem for distributed, business-critical applications: how to reliably exchange information messages over wide geographic areas across disparate computing resources. Deploying MQSeries to distributed nodes, configuring the appropriate MQSeries queues and channels, monitoring the health of the MQSeries network, and taking appropriate responses to MQSeries events is a labor-intensive and time-consuming undertaking. The TME 10 Module for MQSeries streamlines and simplifies these management activities.

Keeping business-critical applications such as those that depend on MQSeries up and running is the primary goal of all IT organizations. If the hardware platforms, operating systems, or networks these applications depend on are unavailable, application downtime increases and productivity plummets, resulting in lost profits to your organization. Likewise, a healthy underlying infrastructure has very little value if applications are often unavailable; the lost productivity translates to lost profits. Tivoli offers a complete solution to applications management, providing products that focus on managing the entire application stack including critical components such as MQSeries. Tivoli has designed a unique life-cycle solution for the management of applications based on the Applications Management Specification (AMS).

By using AMS to make applications management-ready, developers transfer vital management information to management platforms. This means that custom and commercial applications such as Lotus Notes and SAP R/3, when they use MQSeries as a message passing medium, can be managed in conjunction with each other from the same central Tivoli management console.

The TME 10 Module for MQSeries is an enterprise management solution for MQSeries commercial messaging software. It is the only MQSeries management product that addresses the life-cycle of MQSeries networks by deploying software components, configuring MQSeries objects, monitoring processes, managing events, and automating routine tasks. It is also the only MQSeries management product that manages the entire application stack, from low-level network and operating system resources up through the applications that use MQSeries for messaging. Built on Tivoli's open TME 10 Framework, the TME 10 Module for MQSeries provides centralized management for distributed MQSeries networks that span geographic distances and heterogeneous systems.

1.2 Supported Platforms

The TME 10 Module for MQSeries can be installed on the following platforms.

- HP 9000 systems running HP/UX 9.01, 9.03 or 9.05 and Motif 1.5
- HP 9000 systems with PA RISC 1.1 architecture running HP/UX 10.1 and Motif 1.2
- IBM RS/6000 or Power PC system running AIX 3.2.5 or AIX 4.1 and Motif 1.2

- Sun SPARC systems running SunOS 4.1.3 with OpenLook and Motif 1.2
- Sun SPARC systems running Solaris 2.4 or 2.5 with OpenLook and Motif 1.2
- PC systems running Windows NT 3.5.1 with Service Pack 4
- PC systems running Windows NT 4.0

1.3 Software Prerequisites

The TME 10 Module for MQSeries requires the following Tivoli software to be present.

- AIX, HP/UX, Sun OS or Sun Solaris
 - TME 10 Framework 3.0 Rev C with TMP Service Pack 1 or later
 - TME 10 Enterprise Console 2.6 Rev B or later
 - TME 10 Distributed Monitoring (Sentry) 3.0 Rev A or later with UNIX and Universal Monitoring Collections
 - TME 10 Software Distribution (Courier) 3.0 Rev B or later
 - TME 10 AEF 3.0 (from TMP 3.0 Rev C) or later
- Windows NT
 - TME 10 Framework 3.1 with TMP service pack 1 or later
 - TME 10 Enterprise Console 3.1
 - TME 10 Distributed Monitoring 3.0 Rev A or later with UNIX and Universal Monitoring Collections
 - TME 10 Software Distribution 3.1 or later and CLI Utilities

1.4 TME 10 Module for MQSeries Requirements

In general, the main TMR Server platform will have the TME 10 Module for MQSeries installed on it. If the TME 10 Enterprise Console (TEC) is installed on another machine, then it must also have the TME 10 Module for MQSeries installed on it. Other Tivoli managed nodes with MQSeries on them will have a TEC Adapter installed (one per queue manager). Other nodes that are not managed by Tivoli but that have MQSeries installed can also be monitored and configured but require MQSeries channels to allow this.

Before installing the TME Module for MQSeries, the following are required.

- There must be at least 5 MB of free space in /tmp.
- There must be at least 15 MB of free space in TME database subdirectory (usually: /var/spool/Tivoli).
- On UNIX platforms, each user must have at least 200 processes available.
- On Windows NT managed nodes, a user ID called tmemqs must be created and assigned to the mqm and the Administrator groups. Also add this user ID as a Tivoli login name with at least the senior TMR role.

When the MQSeries module is installed, if either TME 10 Distributed Monitoring (Sentry) or TME 10 Software Distribution are not installed then the installation process will not create the relevant icons for that use the facilities of that

package. For example, if TME 10 Software Distribution is not present, the MQSeries file package icons and tasks will not be available.

1.5 What the TME 10 Module for MQSeries Provides

The following sections summarize the major features of the TME 10 Module for MQSeries.

1.5.1 Automated Software Distribution

The TME 10 Module for MQSeries provides pre-distribution checks for system resources and dependencies: disk space, memory, OS level and network configuration. It also provides automated distribution and installation of MQSeries software to remote MQSeries nodes and post-distribution validation.

1.5.2 MQSeries Configuration

It supports the definition and configuration of queue managers, queues and channels from the central console. Also supported are queue and channel configurations based on standard definitions that vary for different management domains. The TME 10 Module for MQSeries also supports a discovery feature that automatically detects queue managers in MQSeries networks. Finally, it reduces the complexity of defining and deploying MQSeries networks resulting in speedier and less error-prone deployments.

1.5.3 Comprehensive Monitoring

The TME 10 Module for MQSeries provides extensive in-band and out-of-band monitoring to ensure the availability of MQSeries. It monitors and retrieves MQSeries queue manager, performance and channel events, filters them according to user preference, and passes critical events to the central console for display and action. The health of MQSeries processes, hosts and system resources necessary for reliable MQSeries operation is also monitored and displayed live at the central management console. The monitoring collections are fully extensible, allowing for the addition of user-defined events and conditions.

1.5.4 Centralized MQSeries Management

The TME 10 Module for MQSeries allows administrators to manage multi-domain, cross-platform and enterprise-scale MQSeries networks from one centralized point. It supports MQSeries administrative and operational commands from the central console. Task collections are extensible allowing users to define new tasks.

1.5.5 Rules-Based Event Correlation

The TME 10 Module for MQSeries correlates MQSeries events and events from other sources (for example, network devices and operating systems) based on user-defined rules. This allows events to be evaluated in context with one another for accurate problem diagnosis and appropriate action. It also allows administrators to key on important events maximizing their productivity and system availability.

1.5.6 Automated Operations

Commands and tasks can be manually executed on multiple MQSeries nodes with a single action. Tasks can be automated to execute on a scheduled basis or as a result event occurrences.

1.5.7 Policy-Based MQSeries Configuration and Administration

The TME 10 Module for MQSeries supports the use of administrative and configuration policies for different domains based on MQSeries subregions.

It also allows management policies to be defined based on business units and geographic regions. It leverages the productivity of senior administrators allowing routine operational tasks to be performed by junior administrators.

Chapter 2. Using the TME 10 Module for MQSeries

This chapter provides detailed examples of using the MQSeries module. It is especially useful for implementers who need to perform similar tasks. Each section contains detailed descriptions of the function being performed, actual screen shots and directions on where to go to for possible error reports. In some cases there is a description of the code underpinning the GUI interface.

Examples that are covered are:

- Installation of the TME 10 Module for MQSeries on AIX
- Executing and scheduling the Queue Manager Discovery task
- Installation and configuration of the TEC adapter
- Use of Event Correlation in the TEC
- Using TME 10 Distributed Monitoring to monitor the MQSeries Command Server
- Monitoring and configuring an MVS MQSeries Queue Manager
- Customizing the supplied TEC tasks
- Using Tivoli for filtering of MQSeries event messages
- Installation of MQSeries on AIX and Windows NT
- Installing and configuring an MQSeries application
- Upgrading the TME 10 Module for MQSeries

2.1 Installing the TME 10 Module for MQSeries on AIX

This example guides you through the installation and initial configuration of the TME Module for MQSeries. You must be logged on as a root administrator to install the product.

1. Select **Install->Install Product** from the TME desktop. This displays the Install Product dialog box. Assuming the install media is pointing to the location of the TME Module code, we select the product to install (TME 10 Module for MQSeries, Version 1.0) and the client on which to install it. In this case, we install it on rs60002.

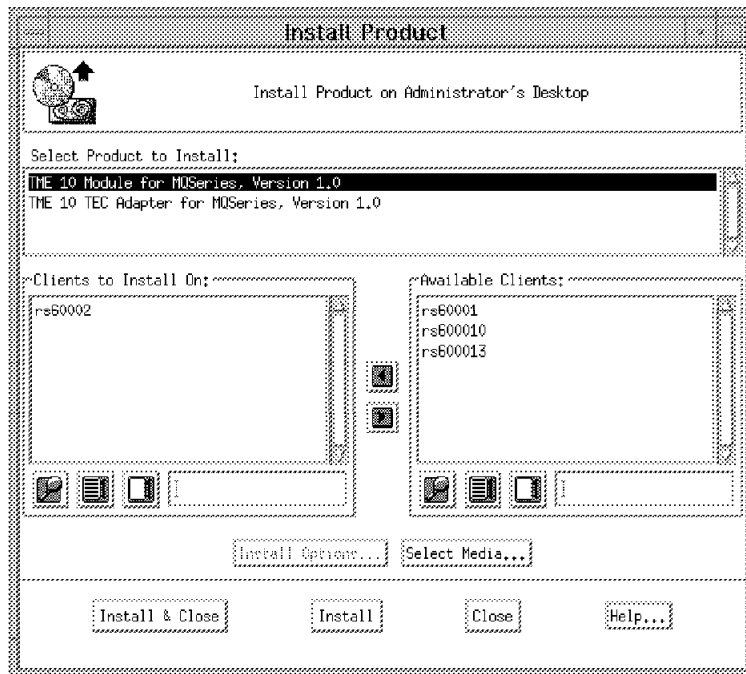


Figure 1. Installing the TME Module for MQSeries

2. Select the **Install & Close** button. The Product Install dialog box is displayed, showing the actions that will be taken.

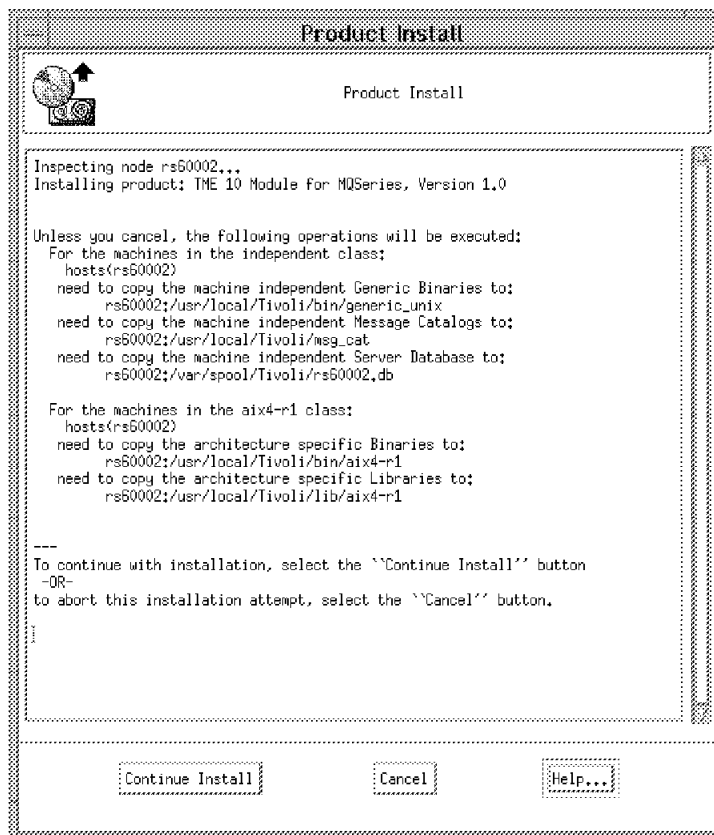


Figure 2. Confirming the Installation Dialog

3. Select the **Continue Install** button to complete installation. The dialog box displays messages showing the progress of the installation and a completion message when the installation completes.

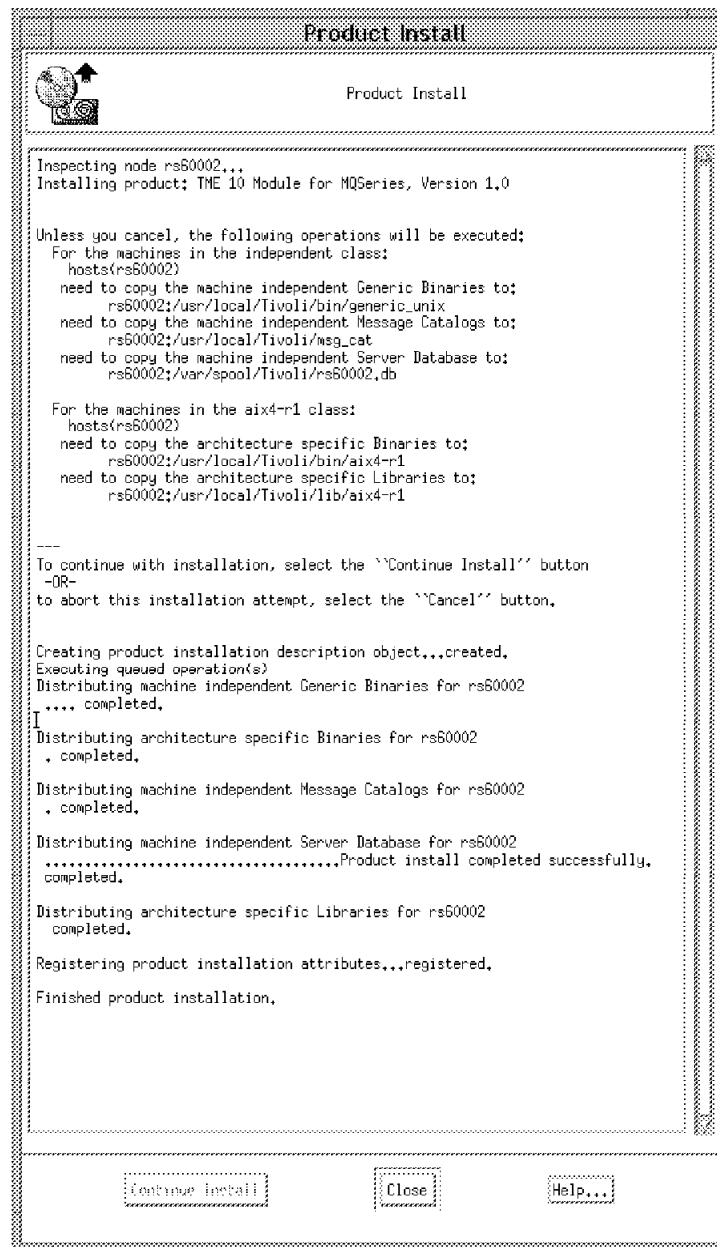


Figure 3. Installation Completion Dialog

4. Select **Close** to dismiss the Product Install dialog box.

We then have an icon for the Module for MQS on the TME desktop. This represents the Module for MQS policy region.

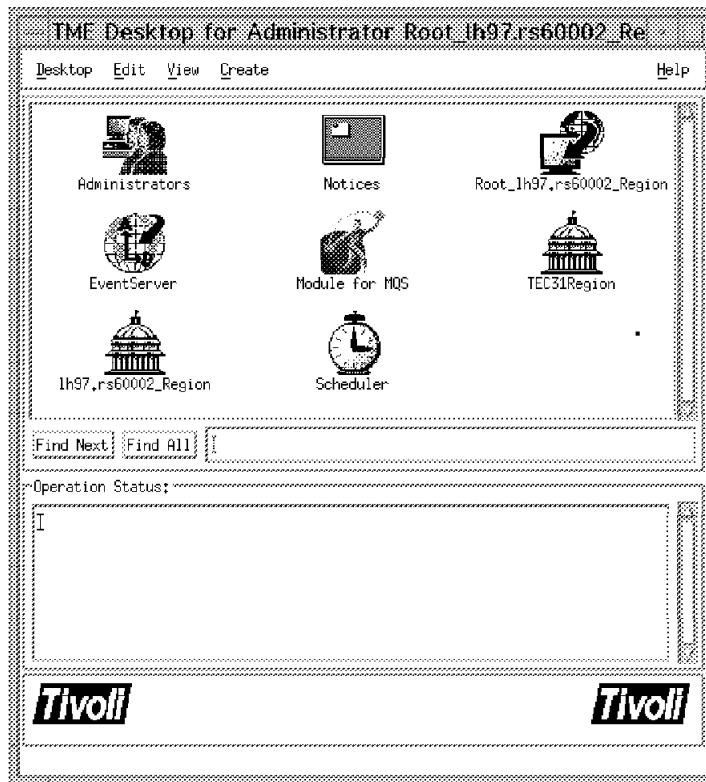


Figure 4. New TME desktop with MQSeries Icon

If there are any errors from this task, you can refer to the log file in /tmp called mqs_server_init.log.

5. We double-click on this icon and get another window showing the MQS Utility Tasks library. We use this to continue configuration of the TME 10 Module for MQSeries.

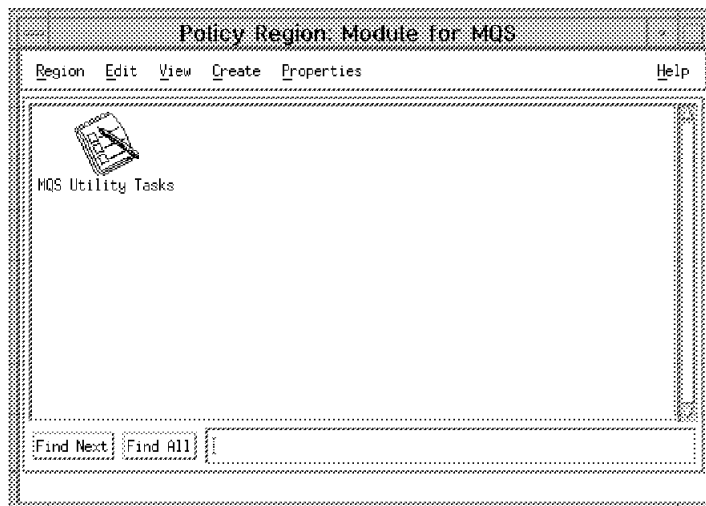


Figure 5. Select MQS Utility Task

6. We create a management domain that contains all the MQSeries resources in the TMR.

All MQSeries resources that are to be managed must be contained in a management domain. At least one management domain must be created, although it is possible to have more. Each management domain contains its own set of MQSeries resources plus profile managers, monitors, task libraries and TMR roles. Each management domain is implemented as a TME policy region, so it is possible to set different authorizations for each of the management domains.

- a. Double-click on the **MQS Utility Tasks** icon.
- b. Then double-click on the **MQS Create Management Domain** icon.

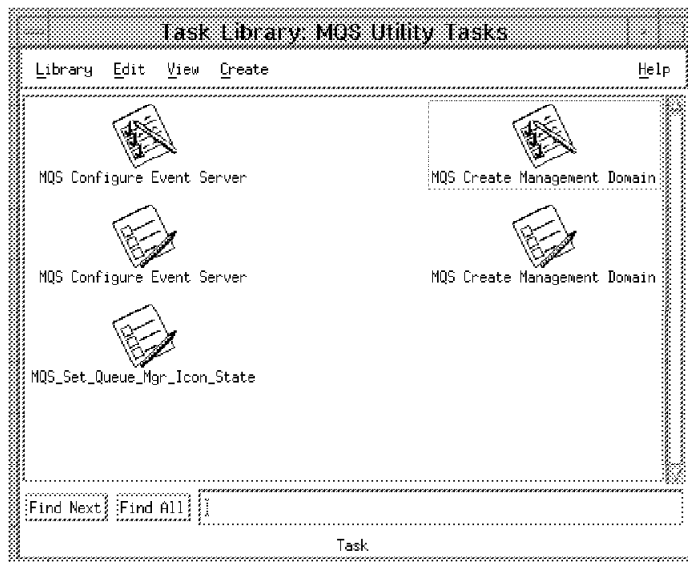


Figure 6. Select MQS Create Management Domain

- c. In the dialog box that appears, we type in the name of our Management Domain, ITS0. The TME 10 Module for MQSeries will prepend MQS_ to the name, that is, it will generate a Management Domain called MQS_ITS0.

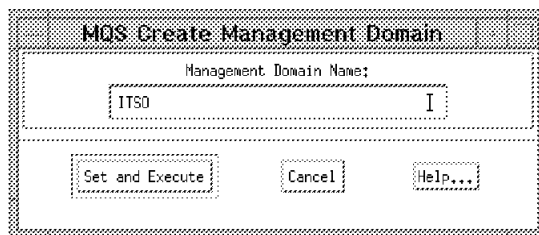


Figure 7. MQS Create Management Domain Dialog

When the task has completed, there is a new icon that appears in the Policy Region: Module for MQS window. This icon has the name MQS_ITS0 and underneath this icon are all the tasks and resources for the MQSeries domain.

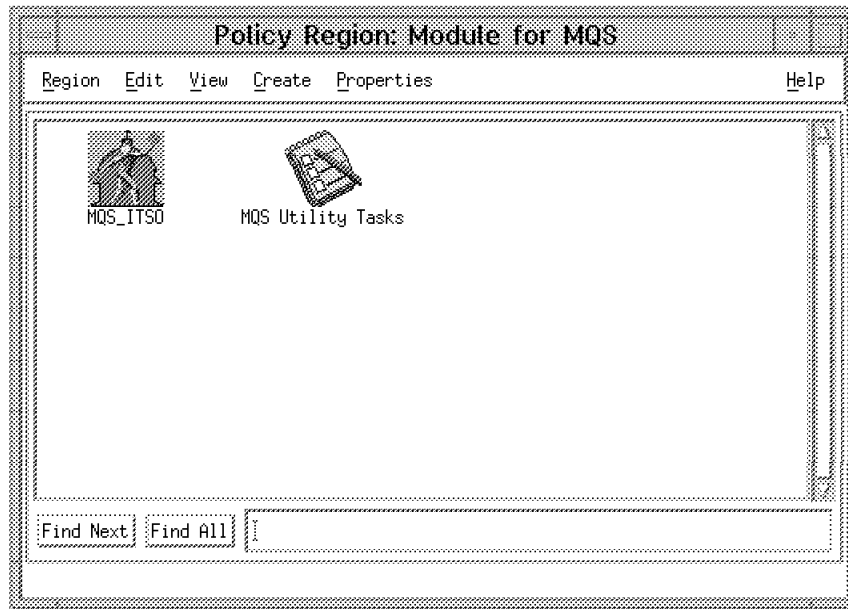


Figure 8. Created Policy Region

If there are any errors from this task, it is possible to view the log file created in /tmp called MQS_ITSO_mqs_create_domain.log.

7. The last thing we do is assign two roles that the TME 10 Module for MQSeries created to administrators of that domain. These roles are called MQS_ITSO_super and MQS_ITSO_admin. We assign these by:
 - a. Select **Administrators** from the TME Desktop.
 - b. Click on **Root_lh97.rs60002_Region** icon and select **Set TMR Roles**.



Figure 9. Selecting TMR Roles

- c. Select the **MQS_ITSO_super** and **MQS_ITSO_admin** roles and move them from the right-hand window to the left-hand window.

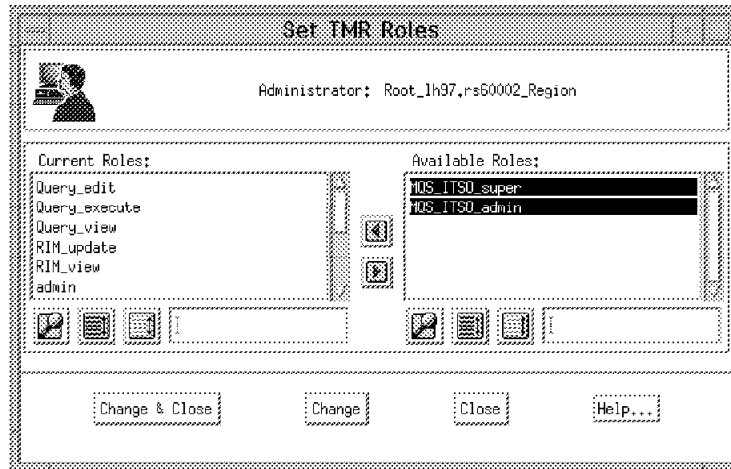


Figure 10. Assigning MQS Roles

d. Select **Change & Close**.

Then, close the TME Desktop and restart for the roles to be properly assigned.

When the TME desktop is restarted, we see underneath the MQS_ITSO policy region all the available tasks for the management of MQSeries.

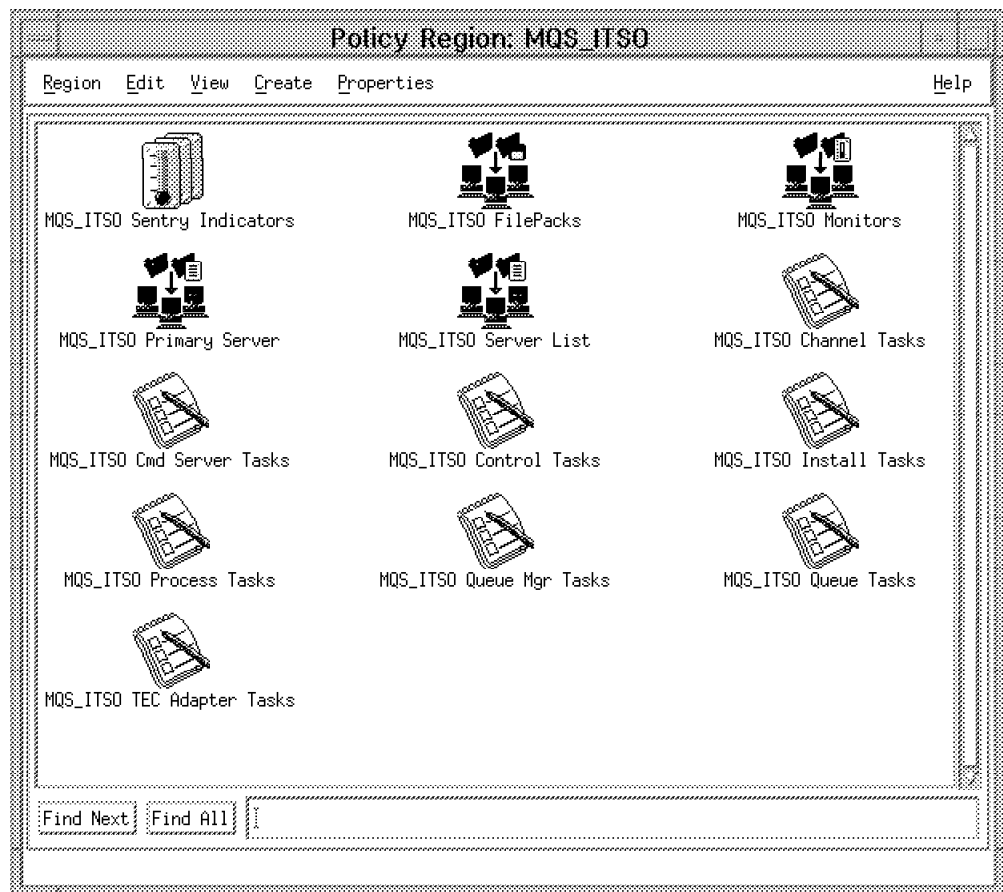


Figure 11. Tasks in the MQS_ITSO Policy Region

We experienced a problem when using the MQS Create Management Domain task which we believe is due to the default timeout used for a TME 10 task. We bypassed this by invoking the shell script directly from the command line.

This was an alternative to using the MQS Create Management Domain dialog window. To do this, from a command prompt, enter `mqs_create_domain.sh`. This shell script takes an argument which is the name of the management domain. In our case, we would enter: `mqs_create_domain.sh ITS0`.

The only difference between executing this shell script and creating the management domain from the dialog box is that the dialog box approach executes under the control of TME. Hence, if an error occurs, then TME will back out all the changes.

2.2 Executing and Scheduling the Queue Manager Discovery Task

After installing the TME 10 Module for MQSeries and creating the MQS_ITS0 policy region we execute the Queue Manager Discovery task on machine RS60002. This task automatically discovers all the queue managers defined on that machine and creates icons on the MQS_ITS0 Policy Region panel for all discovered queue managers.

The procedure to do this is as follows:

1. From the Module for MQS policy region, open the MQS_ITS0 management domain by double-clicking on its icon.
2. Then open the Queue Manager Tasks panel.
3. From the Queue Mgr Tasks panel double-click the **Discover Queue Managers** job.

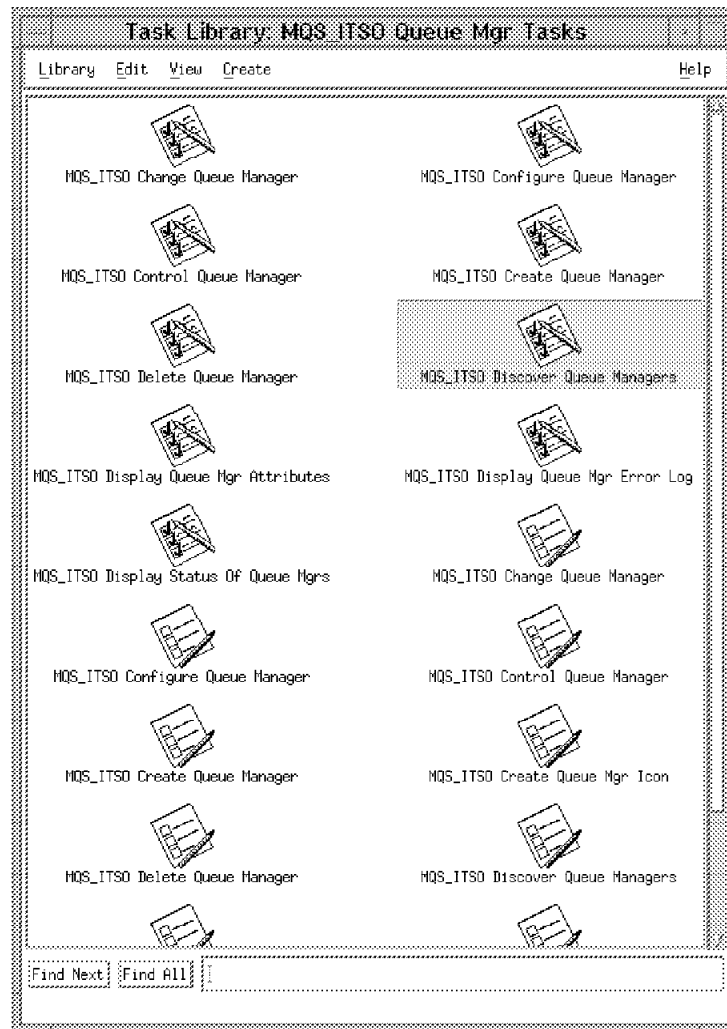


Figure 12. Selecting Discover Queue Managers Job

When the task is complete, an icon is added to the MQS_ITSO management domain panel representing queue manager RS60002. The icon has a label RS60002@rs60002 representing the queue manager name and the managed node name on which the queue manager is located. A log file is also created which can be examined if there are any errors. This file is located in /tmp and is called MQS_ITSO_mqs_discover_qmgr.log.

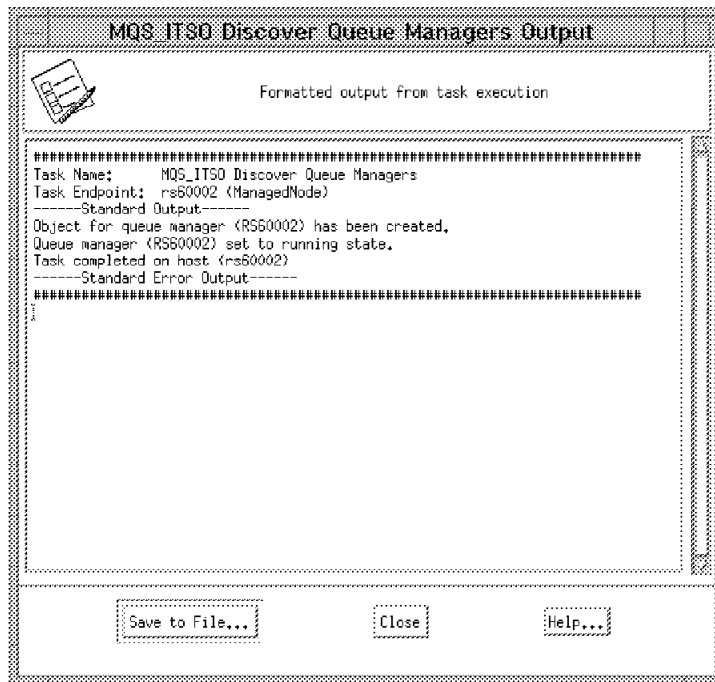


Figure 13. Output from Discover Queue Manager Task

If the queue manager is already running, the icon has a green background.
If it is not currently running, it has the background window color.

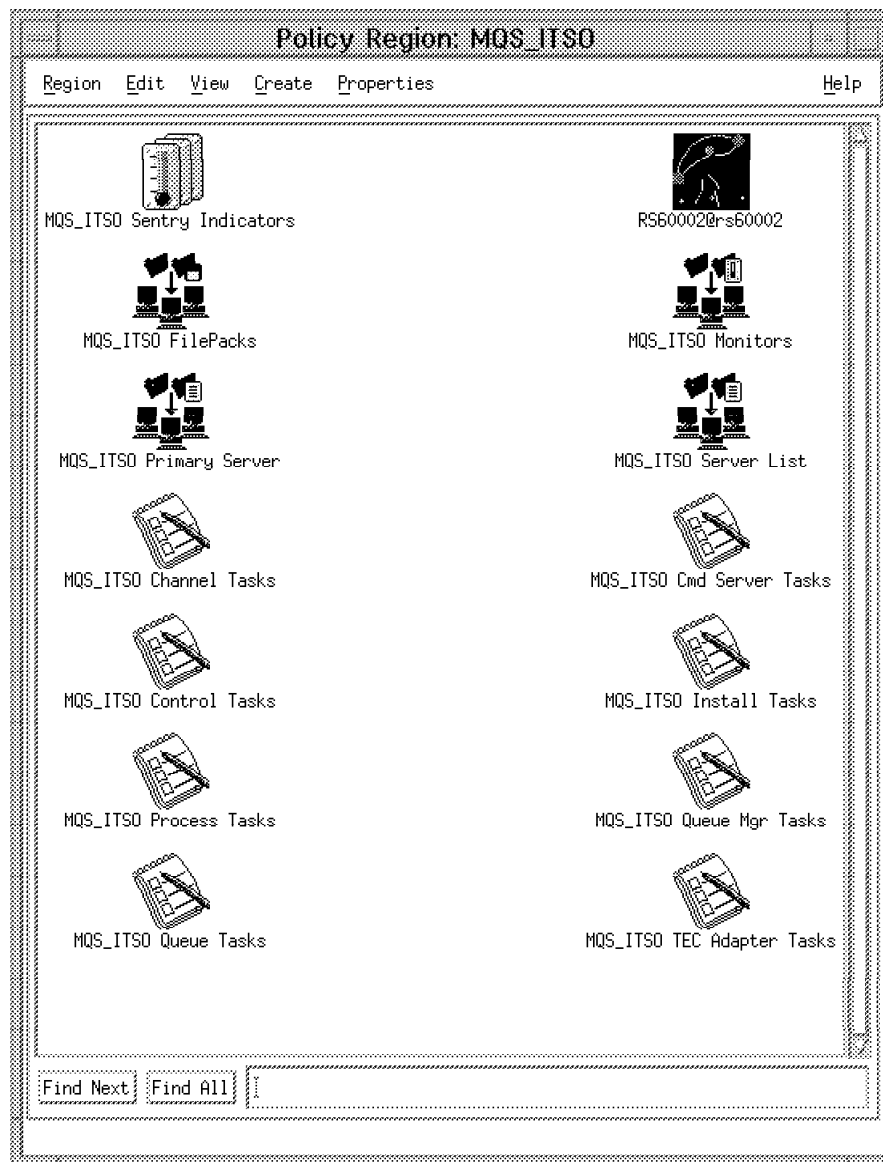


Figure 14. Additional Icon on MQS_ITSO Policy Region

A useful feature of Tivoli is the inbuilt scheduler. This enables a user to automatically define when a particular job is to be executed. The next set of panels show how the Discover Queue Manager task can be scheduled to be executed once a day. This is useful as it means that the current state of the queue managers in the managed domain can be kept up-to-date. We will schedule a job to be executed every day at 8:00 a.m.

1. Select the **Discover Queue Managers** job in the Queue Mgr Tasks panel.
2. Drag this icon onto the Scheduler icon on the TME desktop.
3. A new dialog window appears, and we set up the dialog so that the job is scheduled for 8:00 a.m. every day. We also send a notice to the enterprise console group, to say whether the job was successful or not.

Add Scheduled Job

Schedule Job

Job Name : MQS_ITS0 Discover Queue Managers

Job Label :

☐ Disable the Job,

Description:
 This job will automatically discover what Queue Managers are defined on rs60002.

Schedule Job For:

Date:

Time: :

☒ AM ☐ PM

MonthDayYearHourMinute

Repeat The Job:

☒ Repeat the job indefinitely.

☐ Repeat the job times.

The job should start every

When Job Complete:

☒ Post Tivoli Notice:

☐ Post Status Dialog on Desktop:

☐ Send email to:

☐ Log to File:

Host :

File :

Figure 15. Scheduling the Discover Queue Managers Job

4. Select **Schedule Job & Close** and the job has been scheduled.
5. To check this, we go to the **Scheduler** icon and double-click on it. Another window appears showing the job we just scheduled.

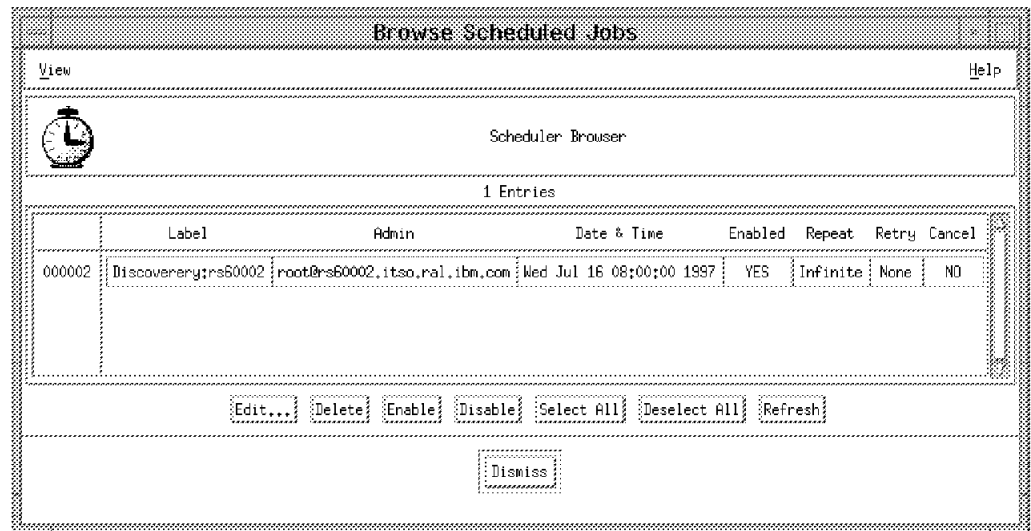


Figure 16. Checking the Scheduler

2.3 Installing and Configuring of the TEC Adapter

This section describes how to install the TEC adapter for monitoring the queue manager on machine rs60002. It also describes how to configure the TEC, a procedure that must be done once only for the TME 10 Enterprise Console (TEC). Each queue manager in the managed region requires a separate TEC adapter. You must be logged on as a root administrator to install the product.

1. Select **Install->Install Product** from the TME desktop. This displays the Install Product dialog box. Assuming the media is pointing to the location of the TME Module code, we select the product to install (TME 10 TEC Adapter for MQSeries, Version 1.0) and the client on which to install it. In this case, we install it on rs60002.

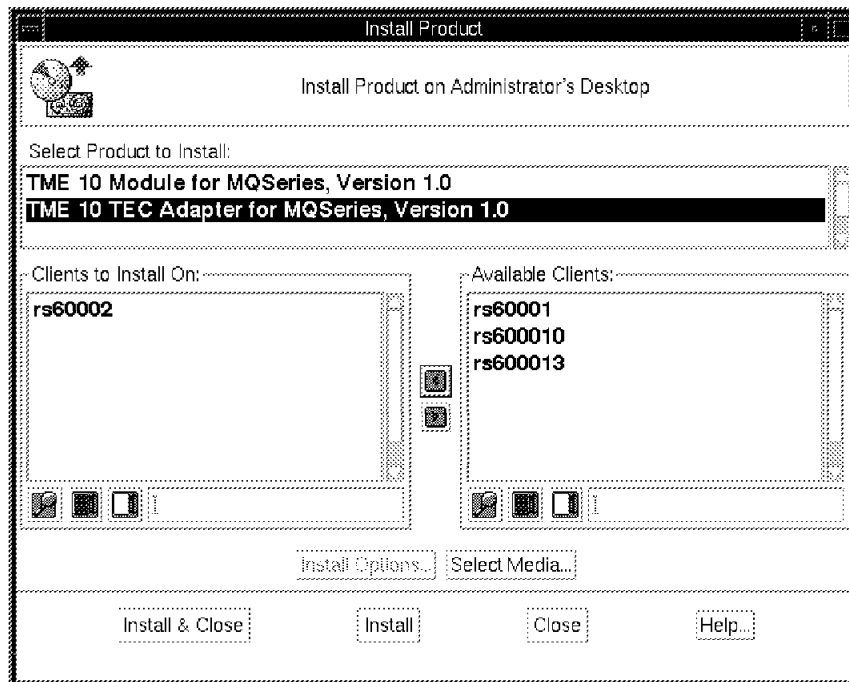


Figure 17. Installing the TME 10 TEC Adapter for MQSeries

2. Select the **Install & Close** button. The Product Install dialog box is displayed, showing the actions that will be taken.

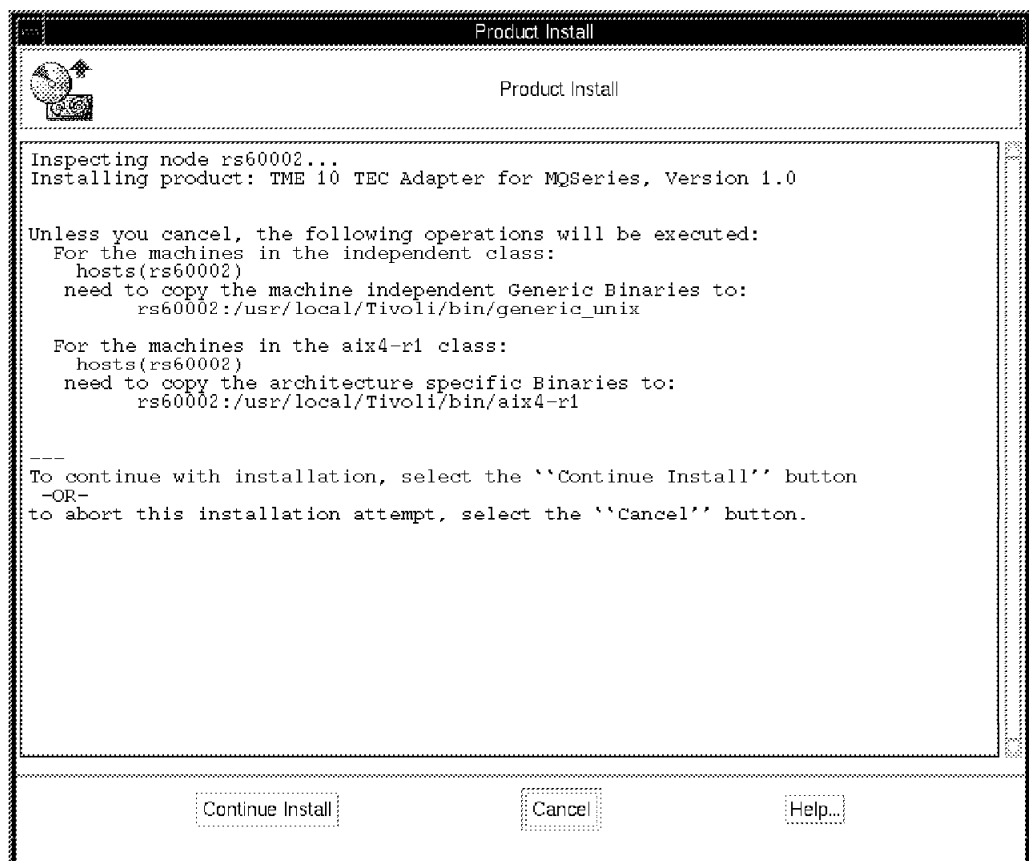


Figure 18. Confirming the Installation Dialog

3. Select the **Continue Install** button to complete installation. The dialog box displays messages showing the progress of the installation and a completion message when the installation completes.

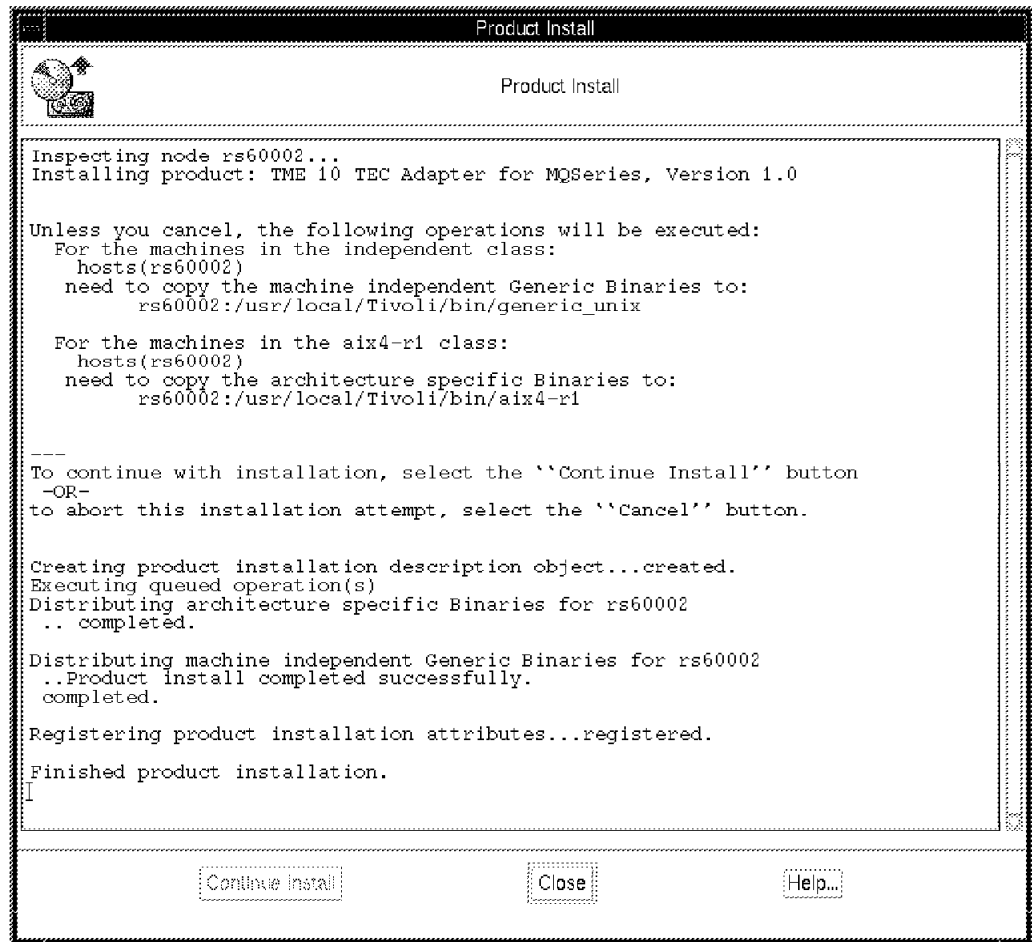


Figure 19. Installation Completion Dialog

4. Select **Close** to dismiss the Product Install dialog box.
5. To configure the TEC adapter, we execute the Configure TME 10 TEC Adapter for MQSeries task. This is contained in the MQS_ITSO TEC Adapter Tasks. This task must be executed to allow MQSeries events to be forwarded to the TEC console.

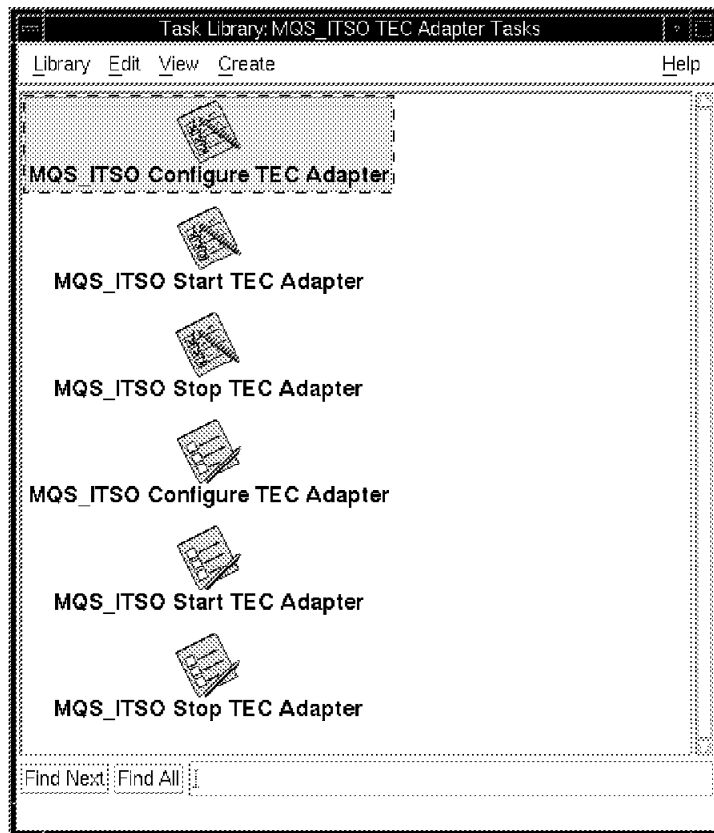


Figure 20. Select Configure TEC Adapter

6. Then we enter the queue manager name that the TME 10 TEC Adapter for MQSeries will be monitoring. For AIX it is not necessary to enter the Event Server Host name in the dialog box. This is only necessary for SunOS, Sun Solaris and HP-UX. Select **Set and Execute**.

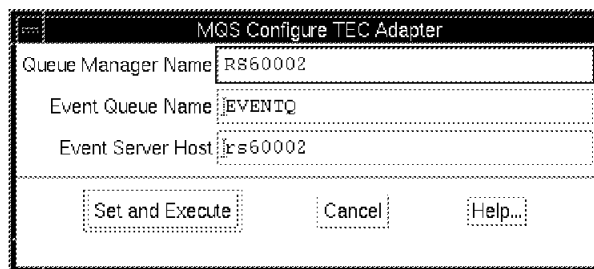


Figure 21. Configure TEC Adapter

When this completes, the output window shows the results of the task. If it completes successfully, the following is created:

- A configuration file for the TME 10 TEC Adapter for MQSeries is created called `tecad_mqseries.RS60002.cfg` in directory `$BINDIR/TME/TEC/adapters/bin`.
- An mqsc file is created called `tecad_mqseries.RS60002.mqsc` in directory `$BINDIR/TME/TEC/adapters/bin`.

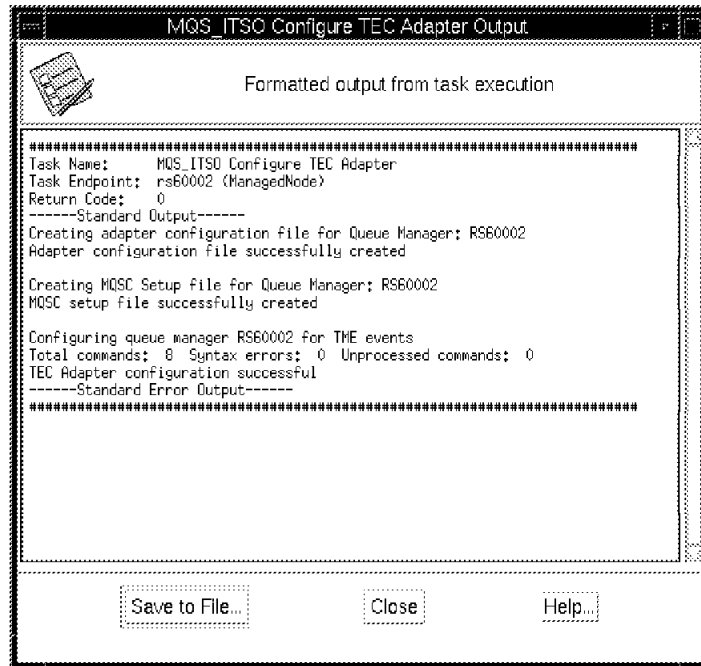


Figure 22. Configure TEC Adapter Output

- Next we configure the TEC by executing the task MQS Configure Event Server in the MQS Utility Tasks. In our example, the TEC is installed on a machine that does not have MQSeries installed. In such a case, the MQS Configure Event Server task needs to be edited to change the Group Name in the Execution Privileges dialog from mqm to sys.

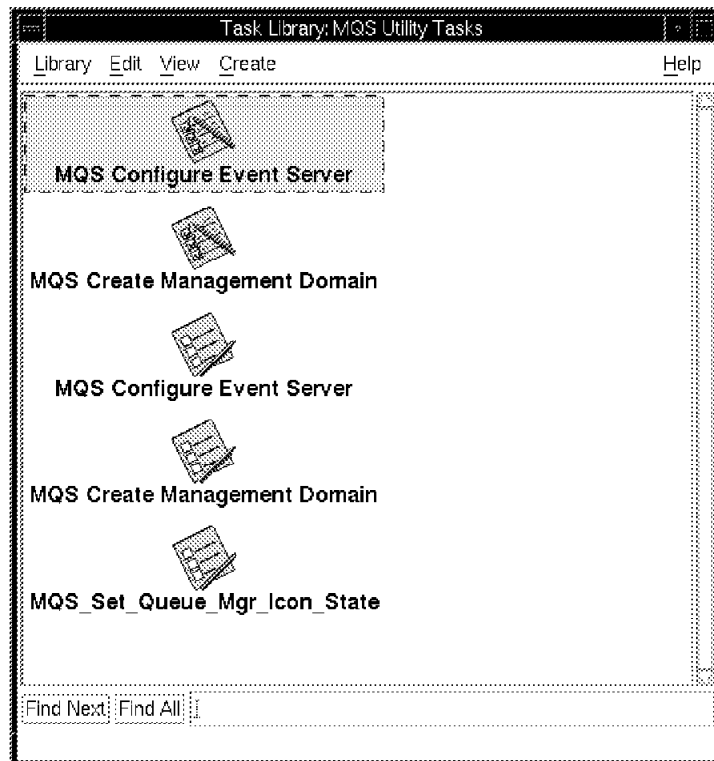


Figure 23. Select Configure Event Server

8. We are using the name MQS as the new rule base.

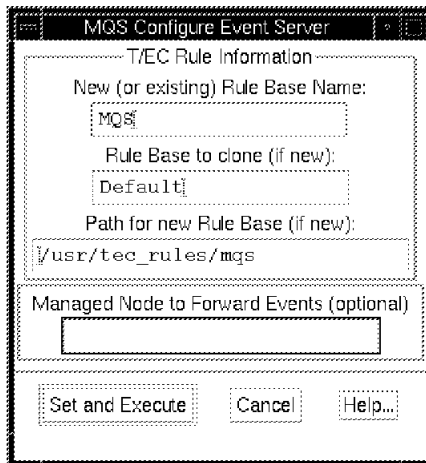


Figure 24. Configure Event Server

When this task completes, the output window has the results. In addition there is a log file in /tmp called mqs_config_evtsvr.log that contains additional information as to the progress through the configuration. It is useful to check this as the task is executing; the task can take a long time to complete and the best way of tracking the progress of the task is to look in the log file.

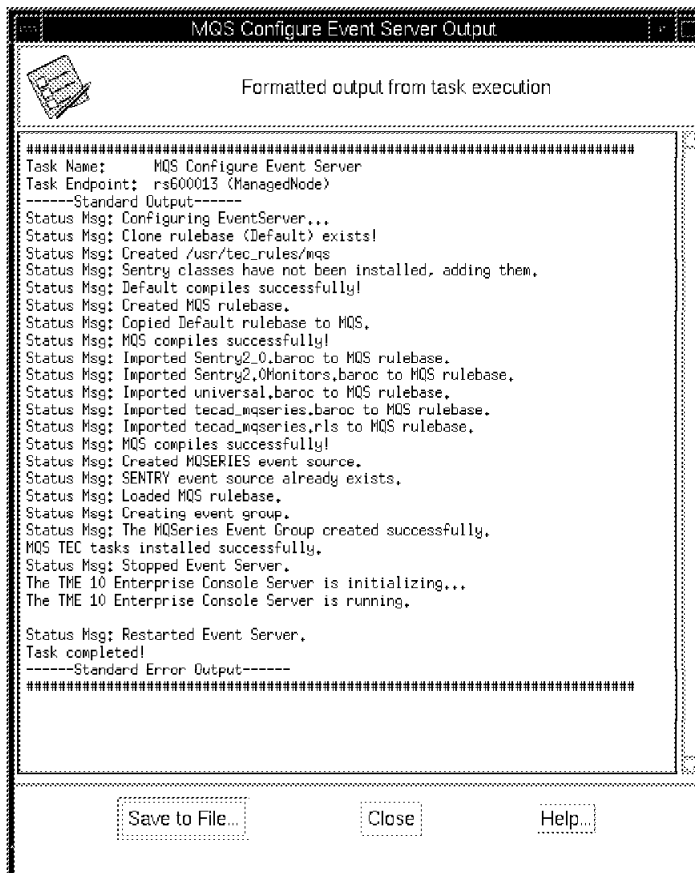


Figure 25. Configure Event Server Output

- Then we need to assign the MQSeries Event Group to a TEC Console. First, we select **TEC console** on the desktop and then select **Assign Event Groups**.

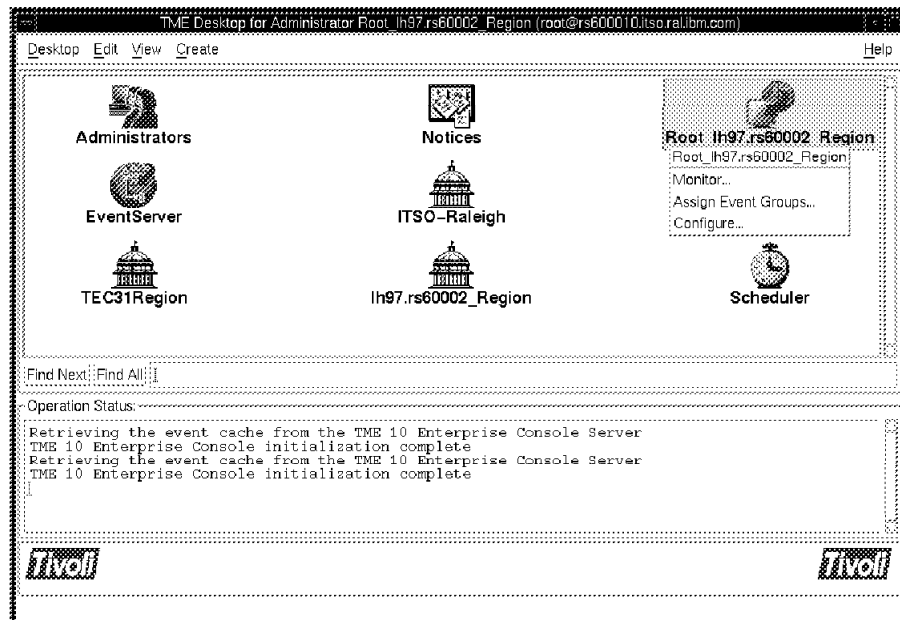


Figure 26. Select Assign Event Groups

- Then select the **MQSeries Event Group** from the Unassigned Event Groups window and move it into the Assigned Event Groups window. Also, select the Admin Roles as admin.

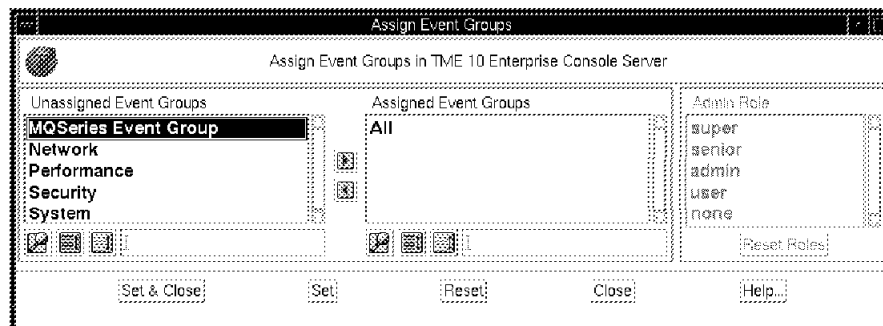


Figure 27. Assign MQSeries Event Group

- Select **Set & Close** and the configuration is complete.

2.4 Use of Event Correlation in the TEC

This section shows an example of the built-in event correlation rules provided by the TME 10 Module for MQSeries. The example shown here is concerned with the starting and stopping of a queue manager. However, there are more event correlation rules, notably those concerned with MQSeries channel events. Consult the *TME 10 Module for MQSeries Users Guide Version 1.0* for more information.

In our example, dealing with correlating events resulting from starting and stopping a queue manager, the following dialog summarizes the example.

1. Stopping the queue manager RS60002 results in an event message being forwarded to the TEC.

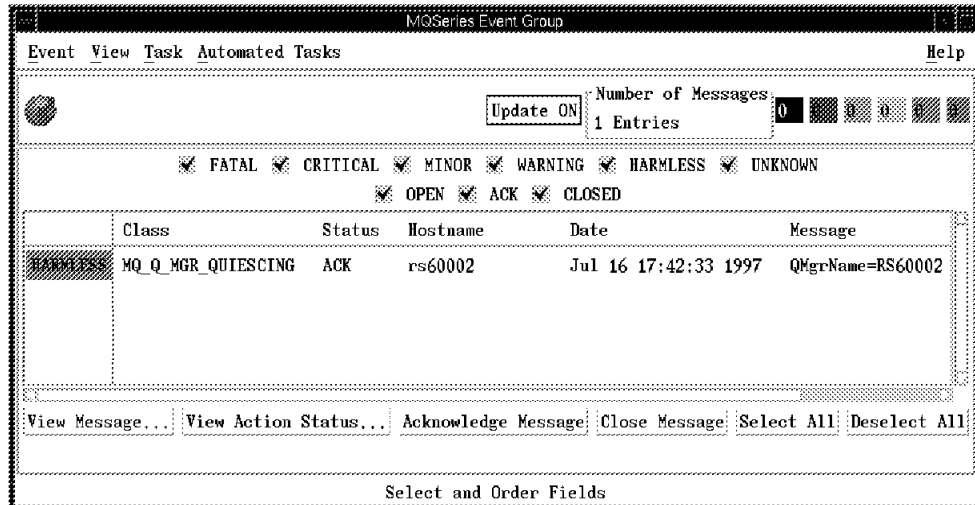


Figure 28. Queue Manager Quiescing Event in TEC

2. Later, we then start the queue manager from the pull-down menu provided by the TME 10 Module for MQSeries.

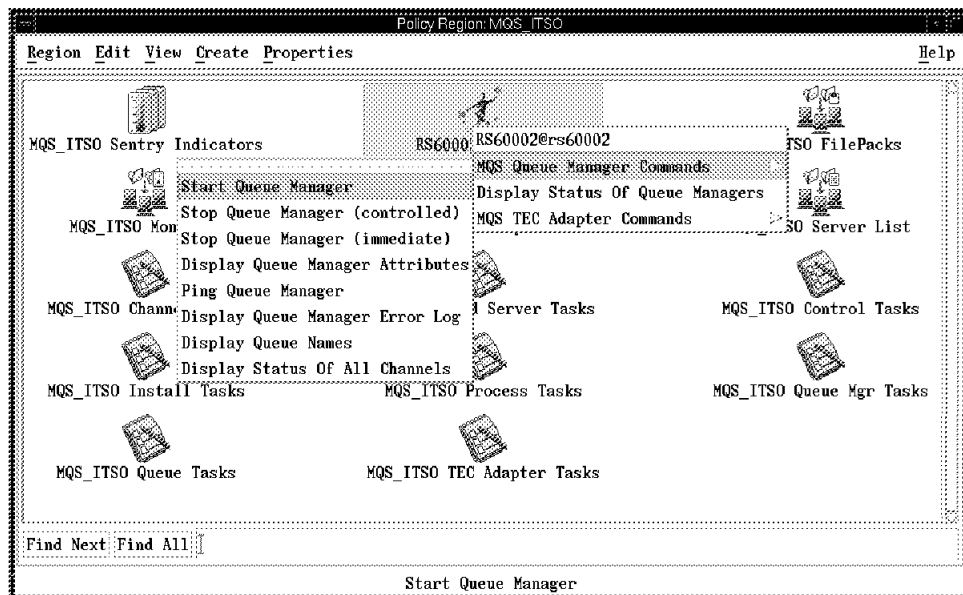


Figure 29. Starting Queue Manager RS60002

The event correlation rule for the queue manager active event first sets the RS60002 queue manager icon to green, starts the Command Server, the trigger monitor (runmqtrm), and the channel initiator (runmqchi). It also changes the status of the MQ_Q_MGR_ACTIVE event to ACK and closes the related MQ_Q_MGR QUIESCING event.

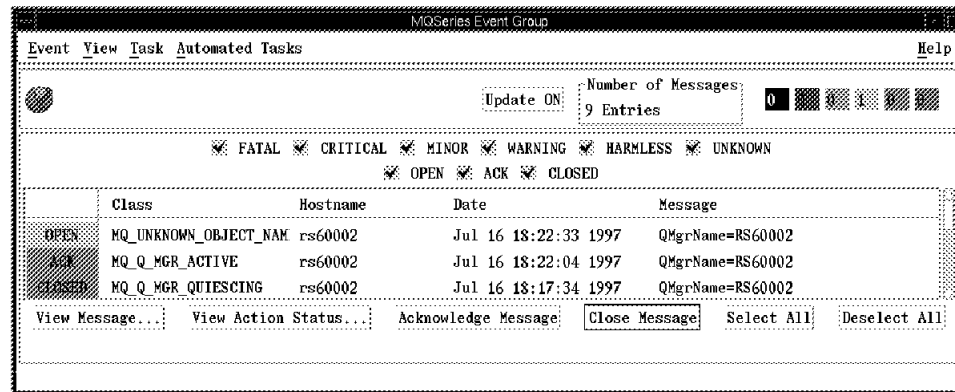


Figure 30. Updated TEC

2.5 Using TME 10 Distributed Monitoring to Monitor the MQSeries Command Server

The TME 10 Module for MQSeries provides some TME 10 Distributed Monitoring monitors. One of these monitors the MQSeries Command Server process. This section shows how to customize this monitor to do two things:

- Send a CRITICAL event to the TEC
- Restart the command server

The steps to configure the TME 10 Distributed Monitoring monitor on machine rs60002 are as follows:

1. From the MQS_ITSO policy region, select **MQS_ITSO Monitors**.

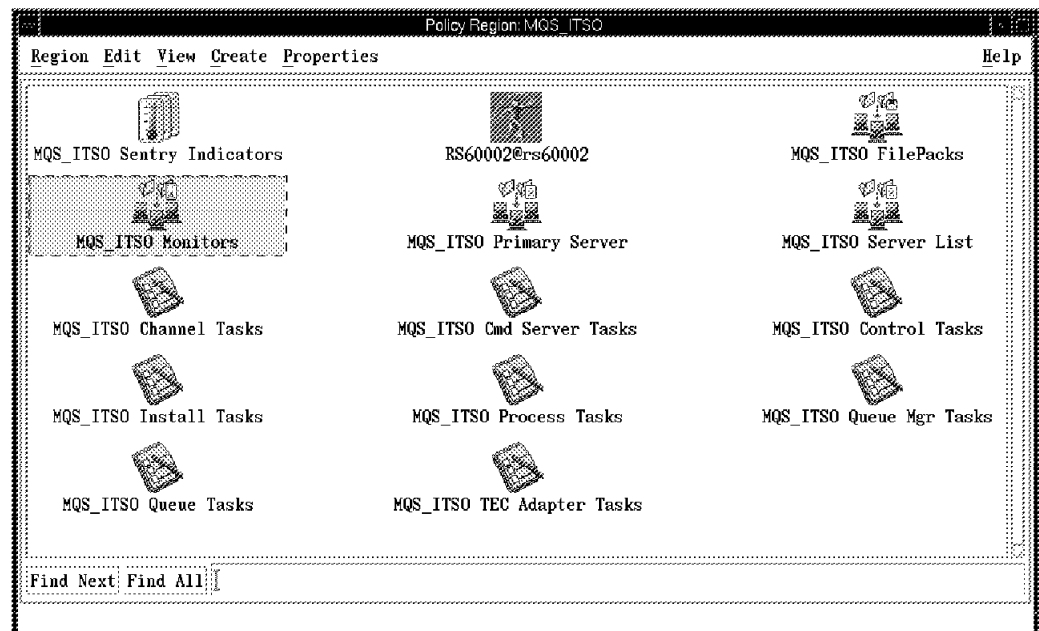


Figure 31. Selecting the TME 10 Distributed Monitoring Monitors

2. Select the TME 10 Distributed Monitoring monitors for the rs60002 TMR server.

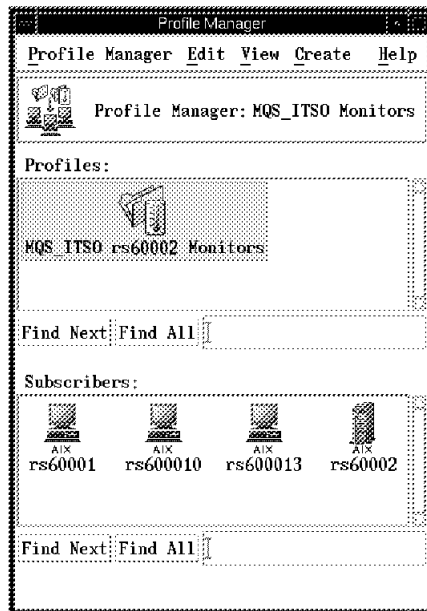


Figure 32. Selecting the TME 10 Distributed Monitoring Monitors

3. Select the **amqpcsea** monitor. This is the command server process.

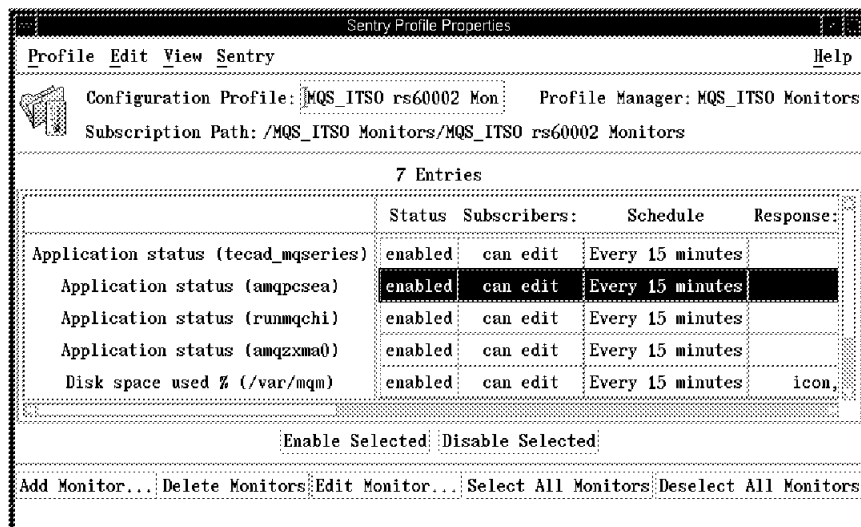


Figure 33. Selecting the Command Server Monitor

4. Edit the monitor as required. Here, we have selected to send a Critical event to the TEC and to run the strmqcsv program which starts the command server.

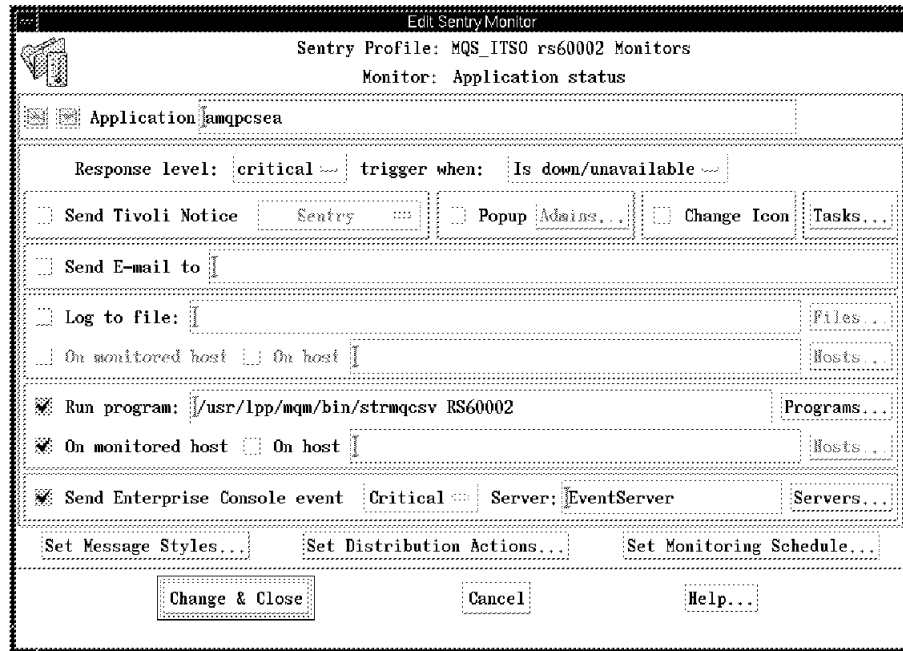


Figure 34. Configuring the Command Server Monitor

5. Select **Change & Close**.
6. Select **Profile->Save**.
7. Select **Profile->Close**.
8. Drag the MQS_ITSO rs60002 Monitors icon over the rs60002 subscriber.
When this completes the customization is finished.

As a test, we stopped the command server and waited for the event to appear in the TEC. The following screen capture shows the result.

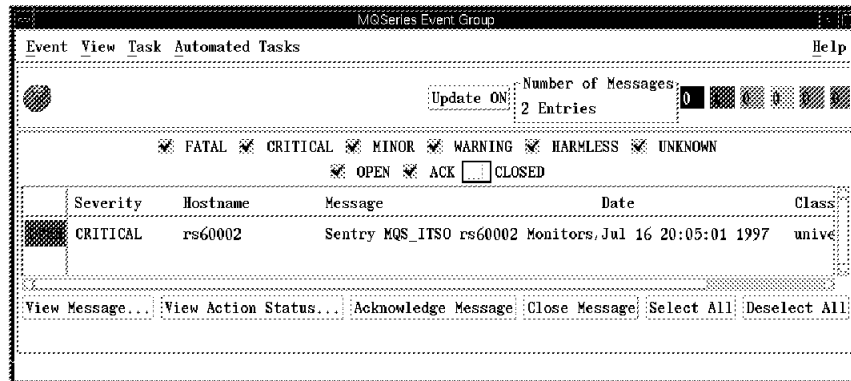


Figure 35. TEC Event

2.6 Monitoring and Configuring an MVS MQSeries Qmgr

This section contains screen captures, etc. on how the TME module can be used to monitor and configure MQSeries on MVS.

TME 10 Module for MQSeries exploits the ability of MQSeries to issue its commands to remote queue managers. In that way you can extend the administration of MQSeries resources to a non-managed (by TME 10) node platform such as MVS.

You can issue this subset of MQSC commands to MQSeries on MVS with the MQS/Tivoli module, using the supplied MQS/Tivoli GUI.

- Change queue manager
- Display queue manager attributes
- Change queue
- Clear queue
- Create queue
- Delete queue
- Display queue attributes
- Search queue attributes
- Change channel
- Control channel
- Create channel
- Delete channel
- Display channel attributes
- Display channel status
- Change process
- Create process
- Delete process
- Display process

These tasks are selected and configured using the panels on a TME 10 managed node which has the desktop containing options for the TME 10 Module for MQSeries. From the task menu you have to select **remote-MVS** from the Command Execution drop-down box.

Tivoli executes a:

```
runmqsc -w<timeout in seconds> -x<qmgr name>
```

command, and sends the command to MVS, using standard MQSeries remote configuration support. Then, the module displays the answer by showing any resulting standard output.

In order to execute remote configuration, the MQSeries channels between the managed node and MVS should have an XMITQ with the same name as the target queue manager. This is a normal convention and it is implemented by the MQSeries command server.

2.6.1 MQSeries MQSC Commands Involving MVS

As an example, we want to execute a Display Queue Manager Attributes command on an MVS queue manager named CSQ2. The procedure to do this is as follows:

1. From the Module for MQS policy region, open the **MQS_ITSO** management domain by double-clicking on its icon.
2. Then open the Queue Manager Tasks panel.
3. From the Queue Manager Tasks panel, double-click the **MQS_ITSO Display Queue Mgr Attributes** task.
4. In the Execute Task panel select **Display on Desktop for the Output Destination** and **rs60001 (ManagedNode)** as Task Endpoint and then click on the **Execute and Dismiss** button.
5. In the MQS Display Queue Manager panel, insert CSQ2 as Queue Manage Name, select ALL attributes, leave the defaults for the remote wait time, and select **Remote-MVS** from the drop-down menu as Command Execution. Then select **Set and Execute**.

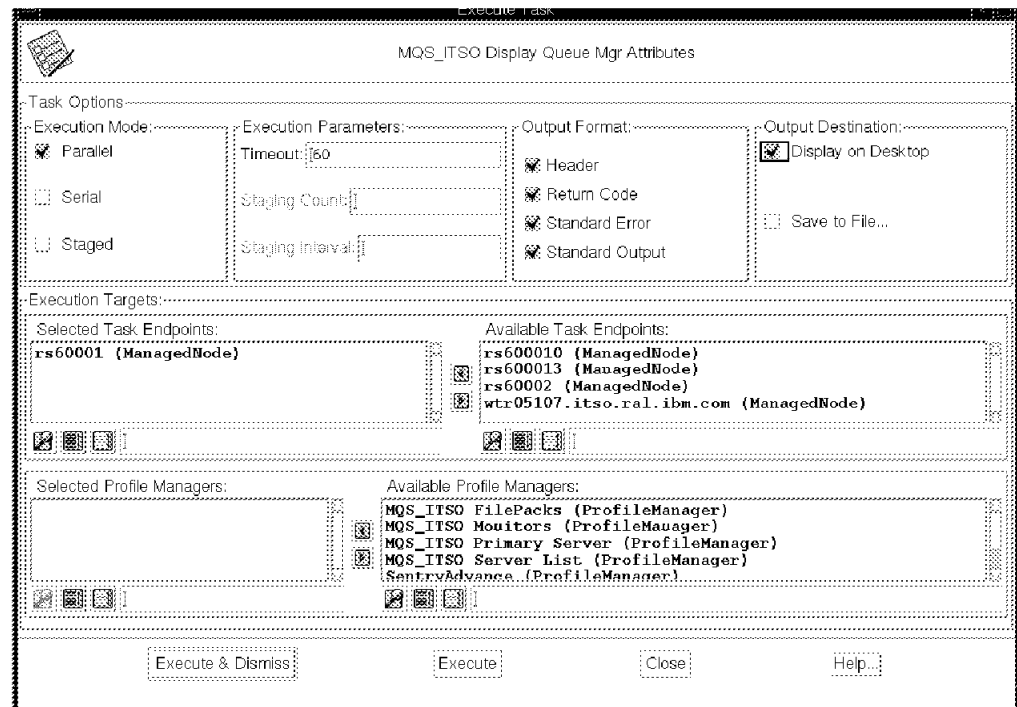


Figure 36. Set up the Display Queue Manager Attributes Task

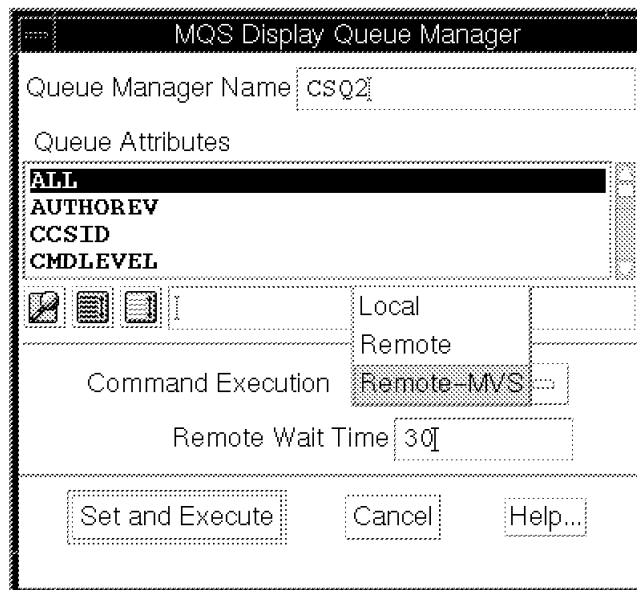


Figure 37. MQS Display Queue Manager

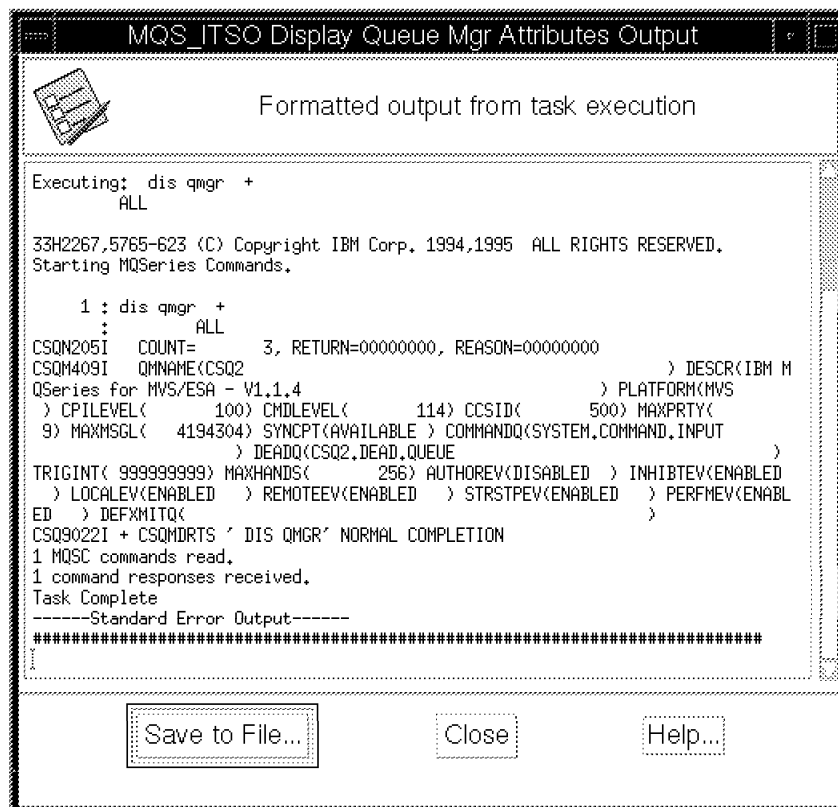


Figure 38. MQS_ITSO Display Queue Manager Attributes Output

2.6.2 MQSeries Events Involving MVS and TEC

MQSeries for MVS can generate events and can send them to the TEC via MQ. In order to do this you have to perform almost the same steps that the TEC adapter configuration task does on a managed node, except that the EVENTQ will be a remote queue.

On MVS:

1. Delete the three event queues:

```
SYSTEM.ADMIN.CHANNEL.EVENT  
SYSTEM.ADMIN.PERFM.EVENT  
SYSTEM.ADMIN.QMGR.EVENT
```

2. Define a remote queue called, for example, EVENTQ.REMOTE pointing to the EVENTQ of the Tivoli managed node connected using MQSeries with MVS. In this example, we are routing event messages to queue manager RS60001.

```
DEFINE QREMOTE(EVENTQ.REMOTE) RNAME(EVENTQ) RQMNAME(RS60001)+  
XMITQ(RS60001) REPLACE
```

3. Define three alias queues replacing the event queues previously deleted and pointing to EVENTQ.REMOTE:

```
DEFINE QALIAS (SYSTEM.ADMIN.PERFM.QUEUE) REPLACE DEFPSIST(NO) +  
DEFPRTY(0) PUT(ENABLED) GET(ENABLED) TARGQ(EVENTQ.REMOTE)  
DEFINE QALIAS (SYSTEM.ADMIN.QMGR.QUEUE) REPLACE DEFPSIST(NO) +  
DEFPRTY(0) PUT(ENABLED) GET(ENABLED) TARGQ(EVENTQ.REMOTE)  
DEFINE QALIAS (SYSTEM.ADMIN.CHANNEL.QUEUE) REPLACE DEFPSIST(NO) +  
DEFPRTY(0) PUT(ENABLED) GET(ENABLED) TARGQ(EVENTQ.REMOTE)
```

4. Enable the queue manager events (if they are disabled):

```
ALTER QMGR AUTHOREV(ENABLED) INHIBTEV(ENABLED) LOCALEV(ENABLED) +  
PERFMEV(ENABLED) REMOTEEV(ENABLED) STRSTPEV(ENABLED)
```

After these configuration steps, when an MQSeries event is generated by the MVS queue manager, it is sent to the EVENTQ of the managed node connected to it.

Note: If the MQSeries channels between MVS and the managed node are stopped, events will not be able to be routed to the TEC Server.

If the channels are started and operational, the MQSeries events reach the EVENTQ. They are then read by the TME 10 Module for MQSeries TEC adapter for queue manager RS60001, forwarded to the TEC Server, appear on the TEC Console, and may be processed by event correlation.

In the following screen captures we can see some events generated by an MVS queue manager. The first display shows the TEC Console for the MQSeries Event Group. In this screen are grouped all the MQSeries events that the TMR manager wants to monitor. This group is a subset of all the MQSeries events that TEC can collect. This picture shows some events generated by an MVS queue manager called CSQ2. Notice that in some events the queue manager originator is shown; in other cases, we would need to open the event to see more details.

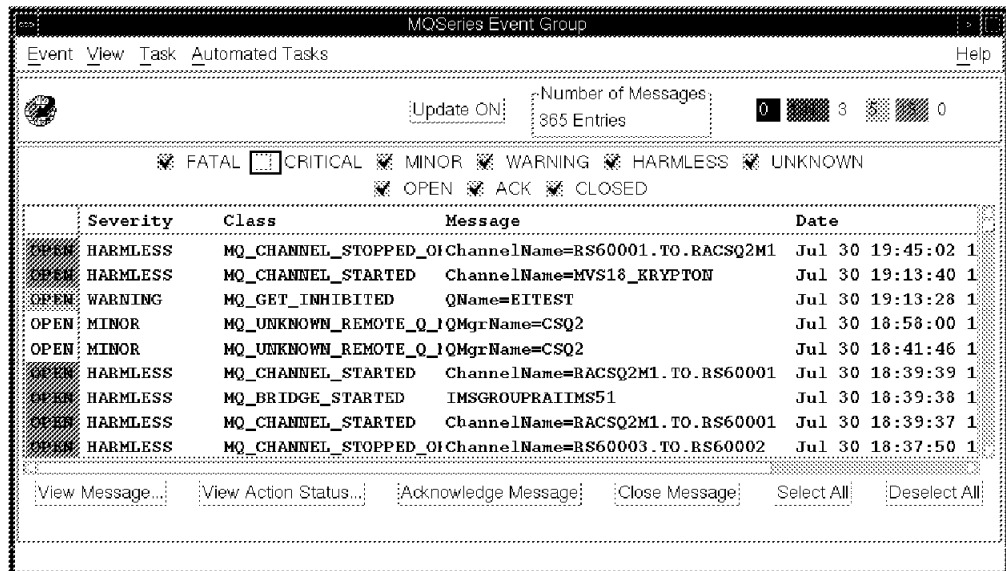


Figure 39. MQSeries Event Group



Figure 40. MQ_GET_INHIBITED Event

Figure 40 on page 32 shows details for the MQ_GET_INHIBITED event. Some fields of particular interest include:

- hostname=rs60001: This is the hostname of the managed node where we have routed the MVS events. The same information is in the origin (with the IP address).
- AppName=CSQ2CHIN: This is the application that was trying to open the queue and failed because the queue was get inhibited.
- QMgrName=CSQ2: This is the queue manager that originated the event.
- QName=EITEST: This is the queue which was get inhibited.



Figure 41. MQ_BRIDGE_STARTED Event



Figure 42. MQ_CHANNEL_STARTED Event

Figure 42 on page 34 shows an MQ_CHANNEL_STARTED event. In the lower part of the details we can find the ChannelName, ConnectionName, and the XmitQName.



Figure 43. MQ_UNKNOWN_REMOTE_Q_MGR Event

In Figure 43 on page 35, we see an MQ_UNKNOWN_REMOTE_Q_MGR event that was generated because the queue manager tried to send a reply message to the IMS.LOAC.CSQ2.REPLY on EITEST queue manager, but this queue manager was unknown. In fact, checking the channel definition, we found that the transmission queue to that queue manager was wrong.



Figure 44. MQ_CHANNEL_CONV_ERROR Event

In Figure 44 on page 36, we show a channel conversion error and in the details we can see what the format is that generated the event and also a ConversionReasonCode.

2.7 Upgrading the TME 10 Module for MQSeries

There is no simple way in Tivoli to upgrade or remove an installed component. To remove the TME 10 Module for MQSeries completely, three things need to be done:

1. If the Tivoli database was backed up before installation of the TME 10 Module for MQSeries, then simply restoring the old database removes all the object and references created during the installation. If it is not possible to restore the old database, then the only alternative is to manually delete all the icons in the panels under the Module for MQS policy region and manually delete installed files and directories. Icons such as tasks, jobs and profile manager icon in an MQSeries management panel can easily be

deleted. Deleting installed files, directories, and other matters are more of a challenge and, at this time, there is no absolute, recommended, approach.

However, if you delete the icons, continue with the following steps.

2. Stop all running TEC adapters.
3. Delete all the files and directories that have been created during the installation process. Refer to Appendix A, “TME 10 Module for MQSeries Directory Structure” on page 59 for the directory structure. Appendix B, “Shell Script to Remove TME 10 Module for MQSeries” on page 61 contains a sample shell script that has been used to remove all the files and directories. However there is no guarantee that this shell script will function correctly for later versions of the TME 10 Module for MQSeries.

In our tests, it was possible to reinstall the TME 10 Module for MQSeries if the above steps are executed properly.

2.8 Customizing the Supplied TEC Tasks

This section contains an example of how to customize the supplied TEC tasks. We add another task that enables triggering for all transmission queues. This could be run as an automated task, for example, when an MQ_Q_MGR_ACTIVE event arrives in the TEC.

The tasks to perform are as follows. The TEC is installed on rs600013 and we modify files on that machine, not on the TMR server machine. In our example, rs60002 is the TMR server. The set of available tasks in the TEC are shown in Figure 45 on page 38.

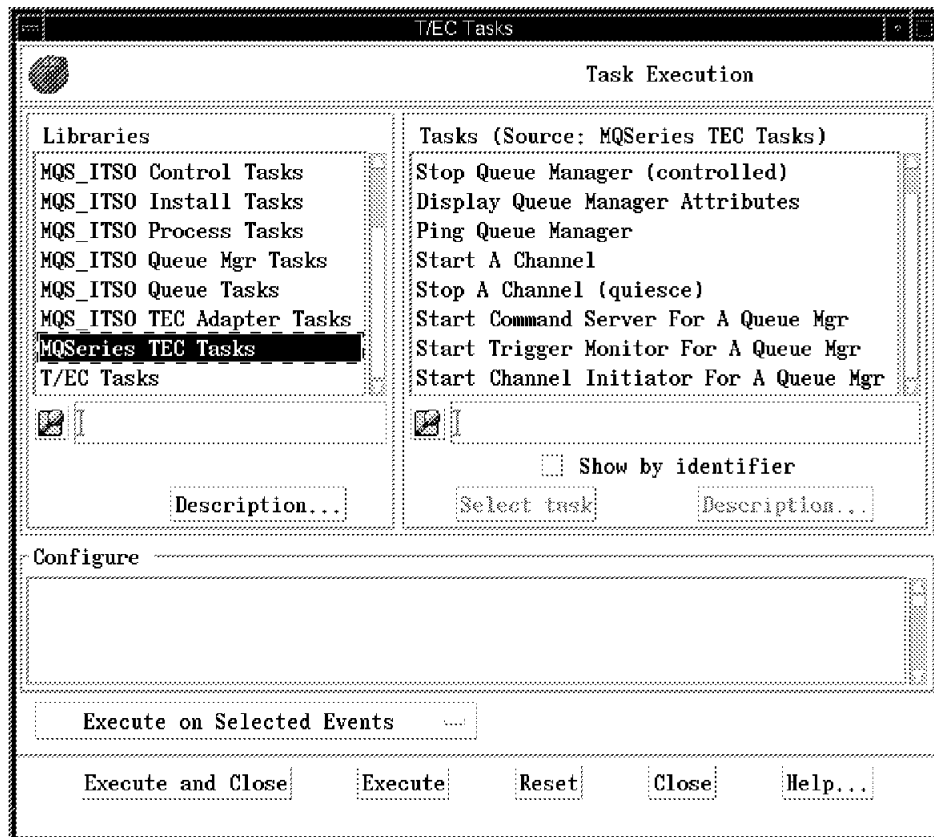


Figure 45. TME 10 Module for MQSeries TEC Tasks

1. Modify the file mqstec.tll in the directory:

```
/usr/local/Tivoli/bin/generic_unix/TME/MQS/tll
```

We add a section at the bottom that identifies the shell script to execute for the Enable Channel Triggering task. The updated file is shown in Figure 46 on page 39. The section at the end of the file, starting with Task Enable_Channel_Triggering, is the part we have added.

```

TaskLibrary "MQSeries TEC Tasks" {
    Context = "TEC";
    Distribute = "ALI";
    HelpMessage = "MQSeries TEC Task Library";
    Requires = ">2.5";
    Version = "1.0";

    Task Start_Queue_Manager {
        Description = (MQSTECTaskCat, "Start Queue Manager", 1);
        HelpMessage = (MQSTECTaskCat, "Use this facility to
            start a queue manager on a host or node.
            \nThe queue manager name will be retrieved
            from the selected TEC event.", 2);

        Uid = "";
        Comments = "Task Name          : Start queue manager";
        Roles = "super:senior";
        Implementation ("default") Binary "./mqs_tecstrtqm.sh";
    };

    Task Stop_Queue_Manager {
        Description = (MQSTECTaskCat,
            "Stop Queue Manager (controlled)", 3);
        HelpMessage = (MQSTECTaskCat, "Use this facility to
            stop a queue manager on a host or
            node.\nThe queue manager name will
            be retrieved from the selected TEC
            event.", 4);

        Uid = "";
        Comments = "Task Name          : Stop queue manager";
        Roles = "super:senior";
        Implementation ("default") Binary "./mqs_tecstopqm.sh";
    };

    Task Display_Queue_Manager {
        Description = (MQSTECTaskCat,
            "Display Queue Manager Attributes", 5);
        HelpMessage = (MQSTECTaskCat, "Use this facility to
            display a queue manager on a host or
            node.\nThe queue manager name will
            be retrieved from the selected TEC
            event.", 6);

        Uid = "";
        Comments = "Task Name          : Display queue manager";
        Roles = "super:senior";
        Implementation ("default") Binary "./mqs_tecdispqm.sh";
    };
};

```

Figure 46 (Part 1 of 3). mqstec.tll

```

Task Ping_Queue_Manager {
    Description = (MQSTECTaskCat, "Ping Queue Manager", 7);
    HelpMessage = (MQSTECTaskCat, "Use this facility to
        ping a queue manager on a host or node.
        \nThe queue manager name will be
        retrieved from the selected TEC event.",
        8);

    Uid= "*";
    Comments = "Task Name          : Ping queue manager";
    Roles = "super:senior";
    Implementation ("default") Binary "./mqs_tecpingqm.sh";
};

Task Start_Channel      {
    Description = (MQSTECTaskCat, "Start A Channel", 9);
    HelpMessage = (MQSTECTaskCat, "Use this facility to
        start a channel on a host or node.
        \nThe queue manager name and
        channel name will be retrieved from the
        selected TEC event.", 10);

    Uid = "*";
    Comments = "Task Name          : Start A Channel";
    Roles = "super:senior";
    Implementation ("default") Binary "./mqs_tecstrtch.sh";
};

Task Stop_Channel      {
    Description = (MQSTECTaskCat,
        "Stop A Channel (quiesce)", 11);
    HelpMessage = (MQSTECTaskCat, "Use this facility to stop
        a channel on a host or node.\nThe queue
        manager name and channel name will be
        retrieved from the selected TEC event.",
        12);

    Uid= "*";
    Comments = "Task Name          : Stop A Channel";
    Roles = "super:senior";
    Implementation ("default") Binary "./mqs_tecstopch.sh";
};

Task Start_Command_Server {
    Description = (MQSTECTaskCat,
        "Start Command Server For A Queue Mgr",13);
    HelpMessage = (MQSTECTaskCat, "Use this facility to
        start the command server for a queue
        manager.\nThe queue manager name will be
        retrieved from the selected TEC event.",
        14);

    Uid = "*";
    Comments = "Task Name          : Start Command Server";
    Roles = "super:senior";
    Implementation ("default") Binary "./mqs_tecstrtcsv.sh";
};

```

Figure 46 (Part 2 of 3). mqstec.tll

```

Task Start_Trigger_Monitor {
    Description = (MQSTECTaskCat,
        "Start Trigger Monitor For A Queue Mgr",
        15);
    HelpMessage = (MQSTECTaskCat, "Use this facility to
        start the trigger monitor for a queue
        manager.\n The queue manager name from
        the selected TEC event is used, and
        SYSTEM.DEFAULT.INITIATION.QUEUE is used
        for initiation queue name.", 16);
    Uid = "*";
    Comments = "Task Name          : Start Trigger Monitor";
    Roles = "super:senior";
    Implementation ("default") Binary "./mqs_tecstrttrm.sh";
};

Task Start_Channel_Initiator {
    Description = (MQSTECTaskCat,
        "Start Channel Initiator For A Queue Mgr",
        17);
    HelpMessage = (MQSTECTaskCat, "Use this facility to
        start the channel initiator for a queue
        manager.\nThe queue manager name will be
        retrieved from the selected TEC event.",
        18);
    Uid= "*";
    Comments = "Task Name          : Start Channel Initiator";
    Roles = "super:senior";
    Implementation ("default") Binary "./mqs_tecstrtchi.sh";
};

Task Enable_Channel_Triggering {
    Description = (MQSTECTaskCat,
        "Enable Channel Triggering", 21);
    HelpMessage = (MQSTECTaskCat, "Use this facility to
        enable channels for triggering.\nThe
        queue manager name will be retrieved
        from the selected TEC event.", 22);
    Uid = "*";
    Comments = "Task Name          : Enable triggering";
    Roles = "super:senior";
    Implementation ("default") Binary "./mqs_enabtrg.sh";
};
}

```

Figure 46 (Part 3 of 3). mqstec.tll

The mqs_enabtrg.sh shell script called by mqstec.tll is shown in Figure 47 on page 42.

```

#!/bin/sh
# File:
#     mqs_enabtrg.sh
# Description:
#     This script is a callback script for the TEC task - enable
#     channel triggering
#     - the queue mgr name will be retrieved from the $QMgrName
#     variable of the selected TEC event
#
# Change History:
#
#     07/17/97 - created by Roger Meli, IBM Hursley
#
# Free up this variable
unset CHILD_OF_OSERV
# Set the display to the caller
DISPLAY=$WD_DISPLAY
export DISPLAY
# check for queue manager name
if "x$QMgrName" = x ; then
    echo "The QMgrName variable doesn't contain a valid queue
        mgr name."
    exit 0
fi
# This is the command to execute
CMD="/u/rmmeli/tectasks/enabtrig"
OPTS=" $ChannelName "
#####
if "$INTERP" = "w32-ix86" ; then

    TASKOUT=wruntask -l "MQS Utility Tasks" \
        -t "MQS Run Command" -h "$hostname" \
        -a "/dev/null" -a "/usr/bin" -a $CMD -a "$OPTS" -m 2 -o 0
        2>& 1 &

    sleep 4
else
    #-----
    # On all other systems besides NT, call the command
    # directly. Route output to a file to prevent a hang;
    # this happens on some systems if the trigger monitor not active
    #-----
    $CMD $OPTS > /dev/null 2>& 1 &
    echo "command issued: $CMD $OPTS"
fi
echo "Command issued to enable channel triggering queue manager
    ($QMgrName)"
exit 0

```

Figure 47. *mqs_enabtrg.sh*

2. To enable the TEC to access the updated tasks, we reconfigure the event server. Select **MQS Configure Event Server** in the MQS Utility Tasks panel. In this example we are updating the current rules base.

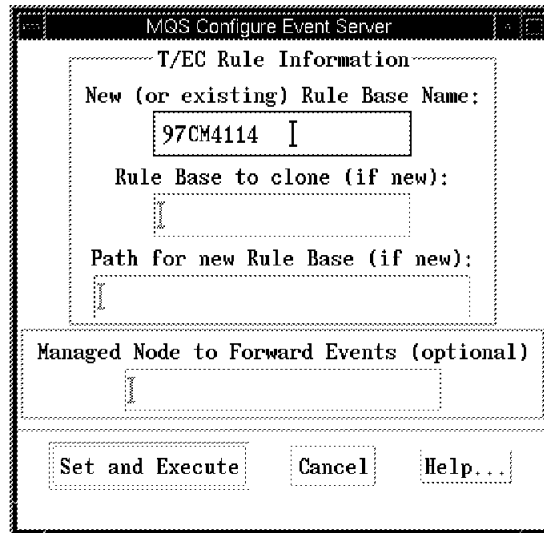


Figure 48. Configuring the Event Server

When this completes, we can see the new TEC task in the TEC console.

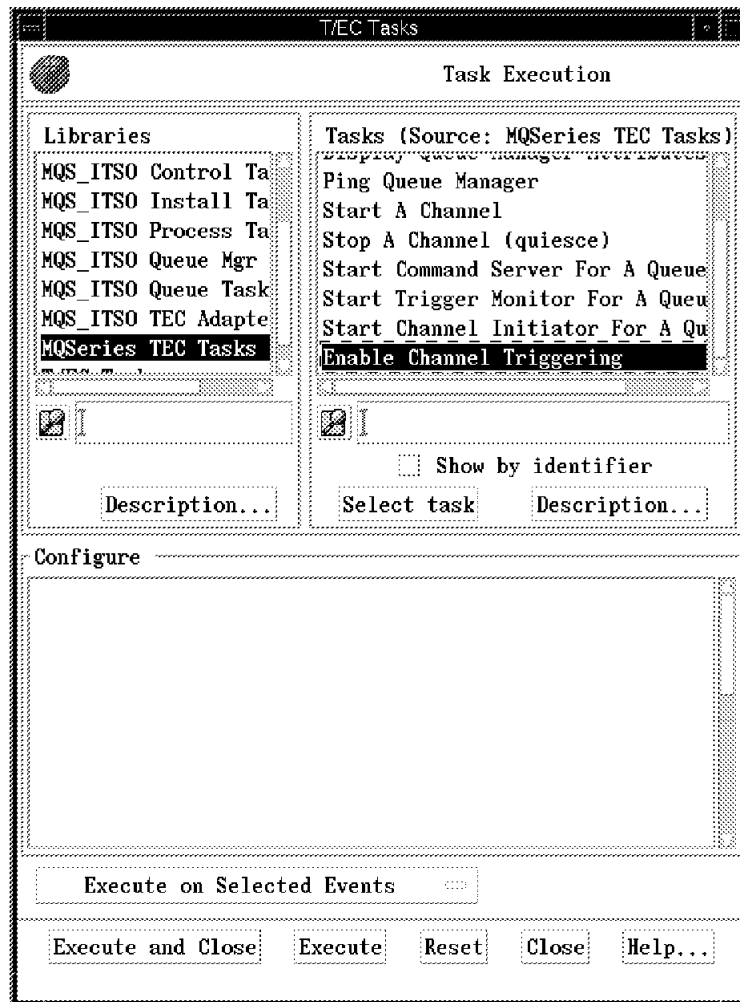


Figure 49. New TEC Task Library

2.9 Using Tivoli for Filtering of MQSeries Event Messages

This section describes how Tivoli may be programmed to provide various levels of event filtering.

There are essentially three ways of achieving this in Tivoli:

1. Specify that the event is not forwarded from the managed node. The TEC adapter for MQSeries receives the MQSeries event, but does not forward the event to the event server. This technique may be usual to reduce the amount of network traffic and it can also be used to provide a better level of granularity than that provided by MQSeries.
2. Exclude classes of events by using the TEC user interface.
3. Create new rules to exclude a specific event. In this case, the event will be forwarded to the event server but will be eliminated by the rules engine.

We will show examples of 1 and 2. For 1, we will filter events arriving from the MVS queue manager called CSQ2 of type MQ_UNKNOWN_OBJECT_NAME. These events are arriving at the event queue for queue manager RS60002. For 2, we will not be able to have the same granularity as 1. We filter *all* events of type MQ_CHANNEL_EVENT. The event group filters do not allow any more granularity when looking at MQSeries events.

1. Filtering at the TEC adapter.
 - a. Edit the TEC adapter configuration file called `tecad_mqseries.RS60002.cfg` in directory `/usr/local/Tivoli/bin/aix4-r1/TME/TEC` on machine `rs60002`.
 - b. Add the following entry
`Filter:Class=MQ_UNKNOWN_OBJECT_NAME;QMgrName=CSQ2;`
 - c. The resulting `.cfg` file is shown in Figure 50 on page 45.


```

#####
#
# Tivoli MQSeries Adapter Configuration File
#
# Version:      1.0
#
# Copyright (c) 1996, Tivoli Systems, Inc. All rights reserved.
# Licensed Materials - Property of Tivoli Systems
#
# tecad_mqseries.cfg - Tivoli TEC MQSeries adapter configuration.
#
# File format:
#   <keyword>=<value>
# where <keyword> is
#   ServerLocation      - Hostname of the T/EC server.
#   ServerPort          - Port number on which the T/EC server is
#                       - listening
#   EventMaxSize        - Maximum length of T/EC event message.
#   ConnectionMode      - connection_oriented OR connection_less
#   WellBehavedDaemon   - TRUE/FALSE
#   ErrorLogLevel       - FATAL/MAJOR/MINOR.
#   TracingLevel        - LOW/NORMAL/VERBOSE.
#
#####
ServerLocation=@EventServer
EventMaxSize=4096
ConnectionMode=connection_less
EventQueueName=EVENTQ
TracingLevel=LOW
ErrorLogLevel=MINOR
# Filter out MQ_UNKNOWN_OBJECT_NAME events
#   added by Roger Meli, IBM Hursley
Filter:Class=MQ_UNKNOWN_OBJECT_NAME;QMGrName=CSQ2;

```

Figure 50. Modified TEC Adapter MQSeries Configuration File

- d. Stop the TEC adapter and restart it.
2. Filtering using the TEC console user interface:
 - a. Click on **Event Server** icon and select **Event Groups**.

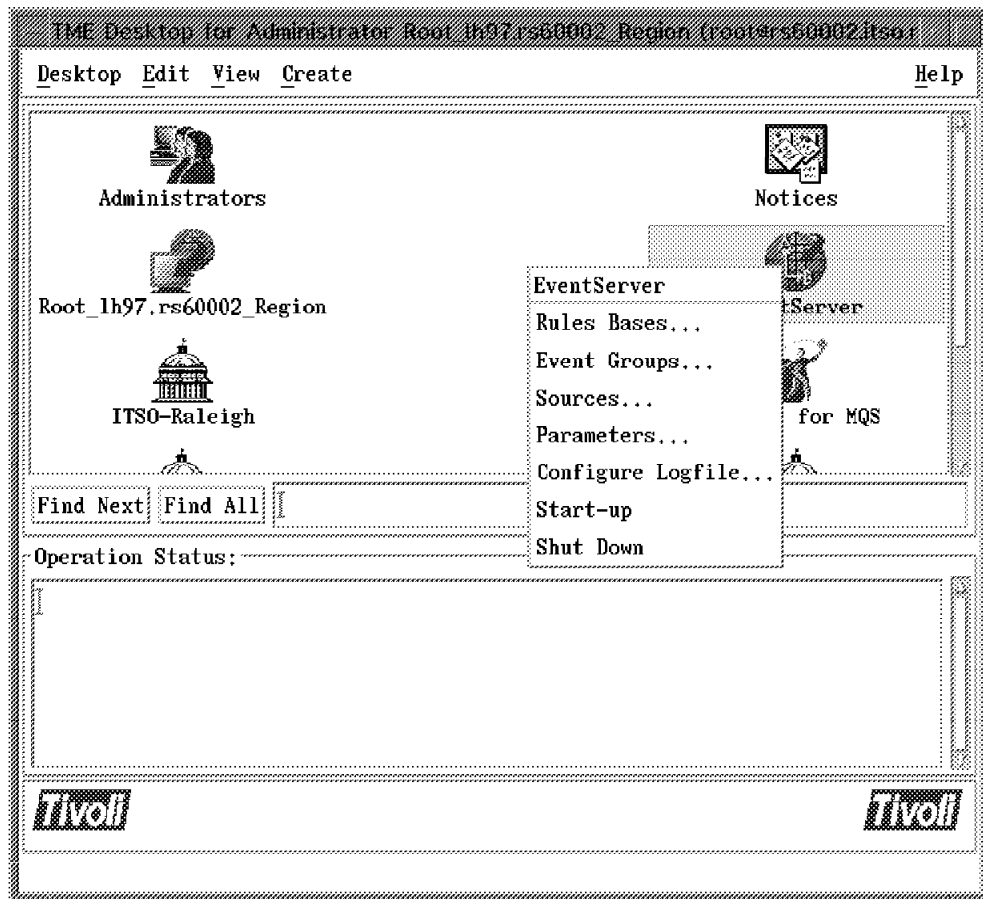


Figure 51. Select Event Groups

- b. Select **Create new event group**.

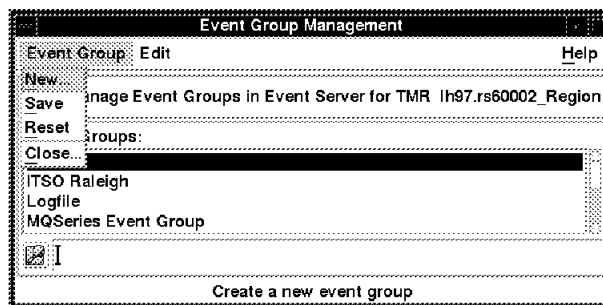


Figure 52. Select Create New Event Group

- c. Enter the name of the new event group **MQ_CHANNEL_EVENTS** and select a bitmap icon to represent this event group. In our case we have imported the MQS icon supplied by the TME 10 Module for MQSeries.
- d. Select **Create**.
- e. The Edit Event Group Filters dialog appears.
- f. Specify asterisks in all the filter values apart for the Event Class field.
- g. Click on the **Event Class** button.
- h. Select **MQ_CHANNEL_EVENT** from the list of event classes.

i. Click on **Add Filter**.

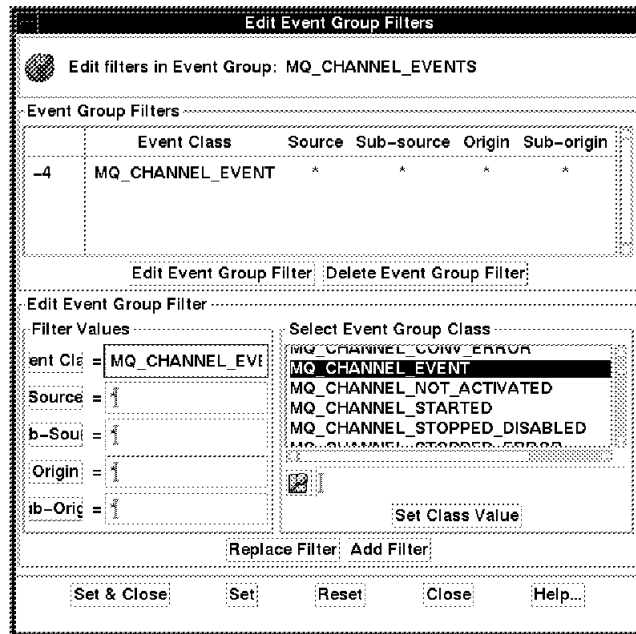


Figure 53. Adding a New Filter

j. Select **Set & Close**.

k. From the main desktop panel, click on the **Event Server** icon.

l. Select **Assign Event Groups**.

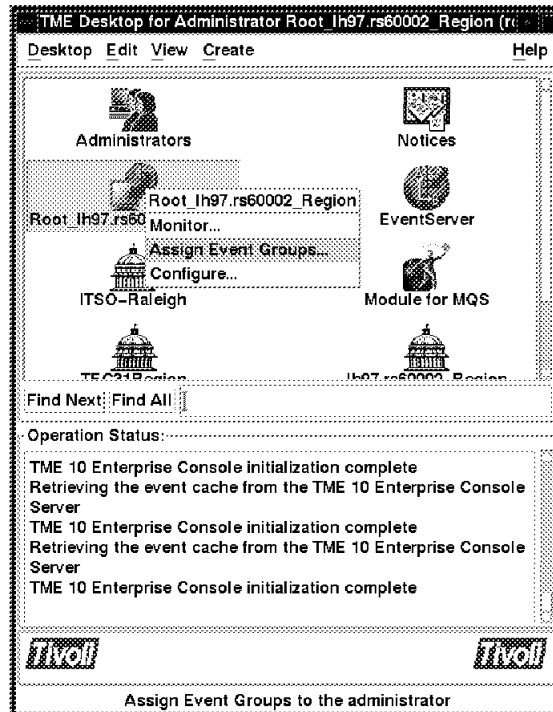


Figure 54. Select Assign Event Groups

m. Assign the event group from the Unassigned Event Groups to the Assigned Event Groups.

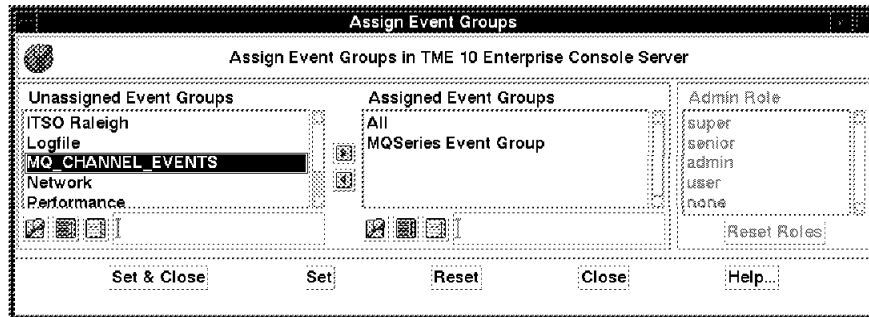


Figure 55. Select Assign Event Groups

n. Click on **Set & Close**.

The MQSeries event filtering is complete.

2.10 Installation of MQSeries on AIX and Windows NT

This section contains an example of installing MQSeries first on the rs600010 AIX machine and then on Windows NT. Each example installs the server MQSeries code and the samples.

1. AIX installation:

a. Select the **MQS_ITSO Install Task** from the main MQS_ITSO panel.

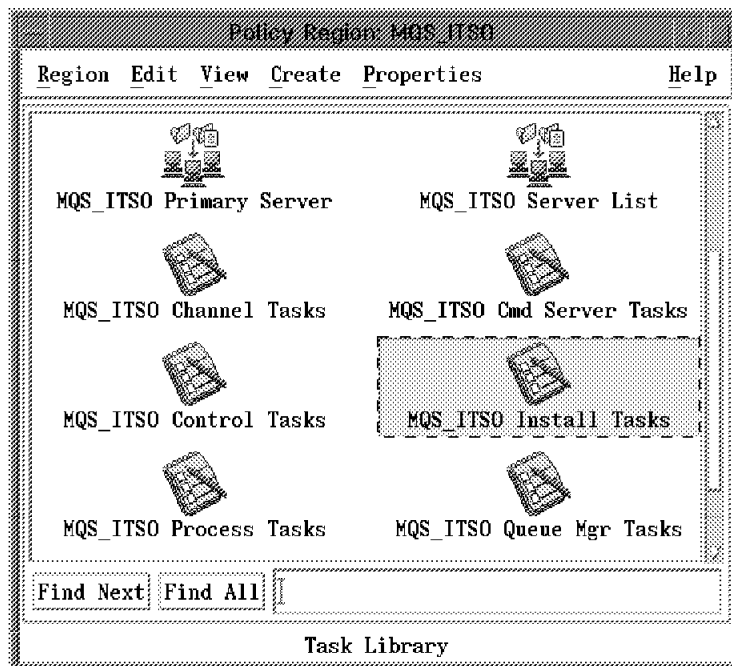


Figure 56. Select Install Task

b. Select **MQS_ITSO Create AIX File Pack**.

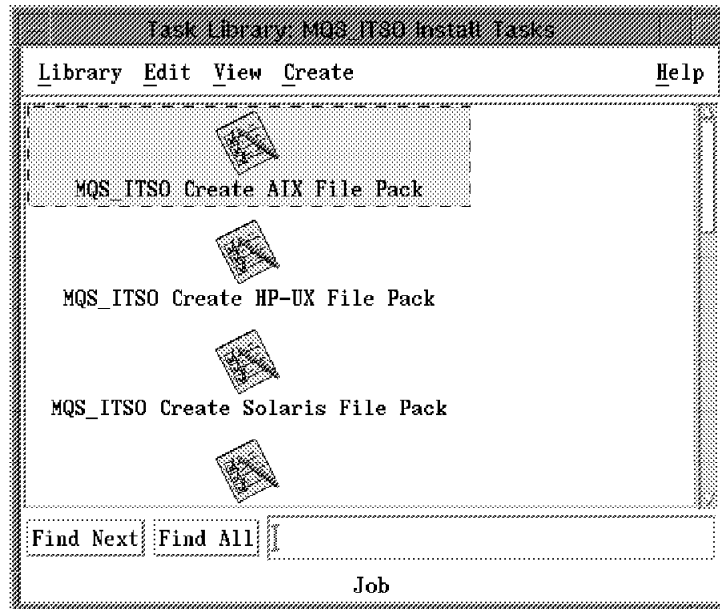


Figure 57. Select Create AIX File Pack

- c. The panel is modified as shown in the following diagram. The location of the MQSeries for AIX image is entered and the machine on which it is located. In addition, the name of the file pack is entered (aixserver).

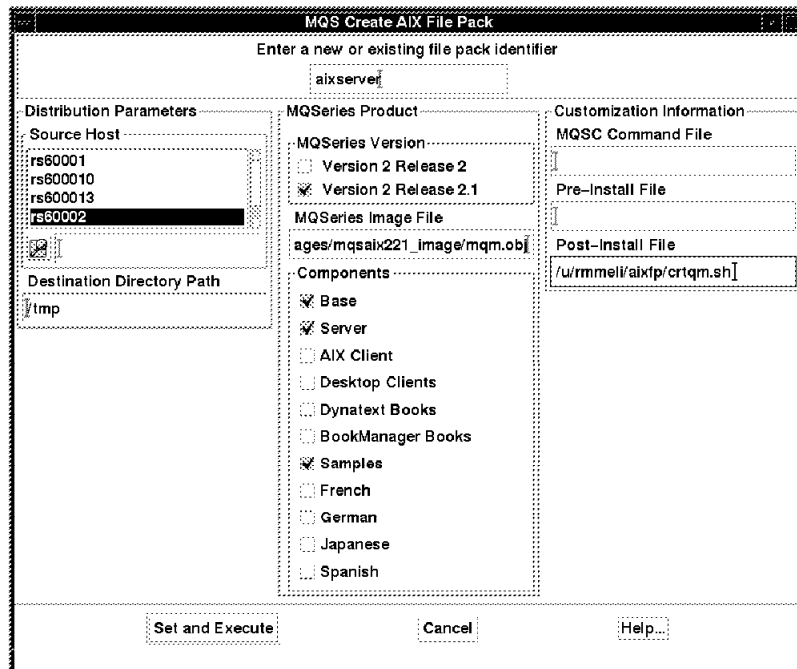


Figure 58. Select Create AIX File Pack

- d. Click on the **Set and Execute** button. When complete the output is shown in a window.

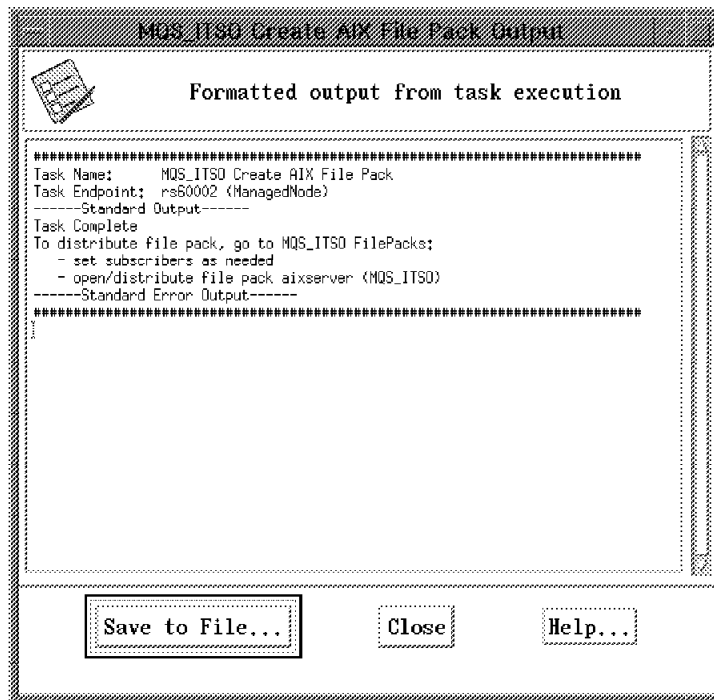


Figure 59. Output from Create AIX File Pack Job

- e. From the main MQS_ITSO policy region, select **MQS_ITSO FilePacks**.

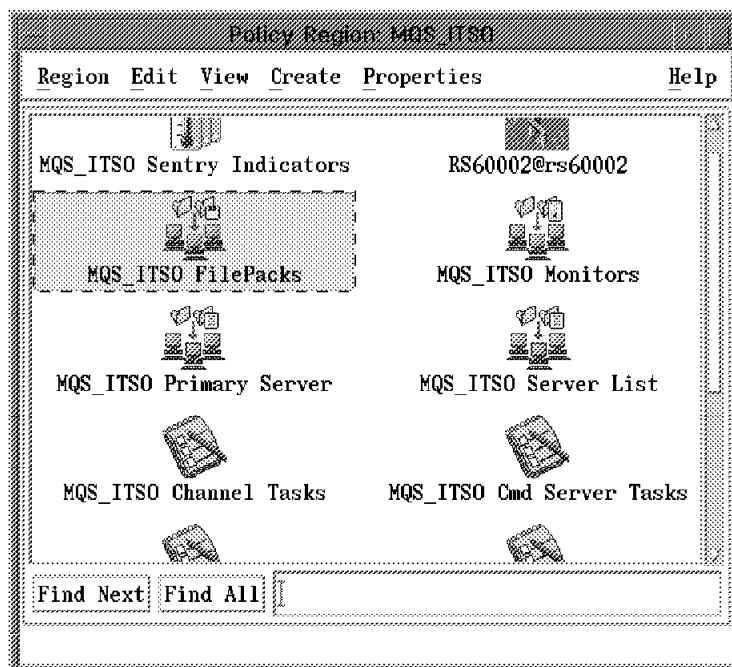


Figure 60. Select MQS_ITSO File Packs

- f. Select the **aixserver** file pack.

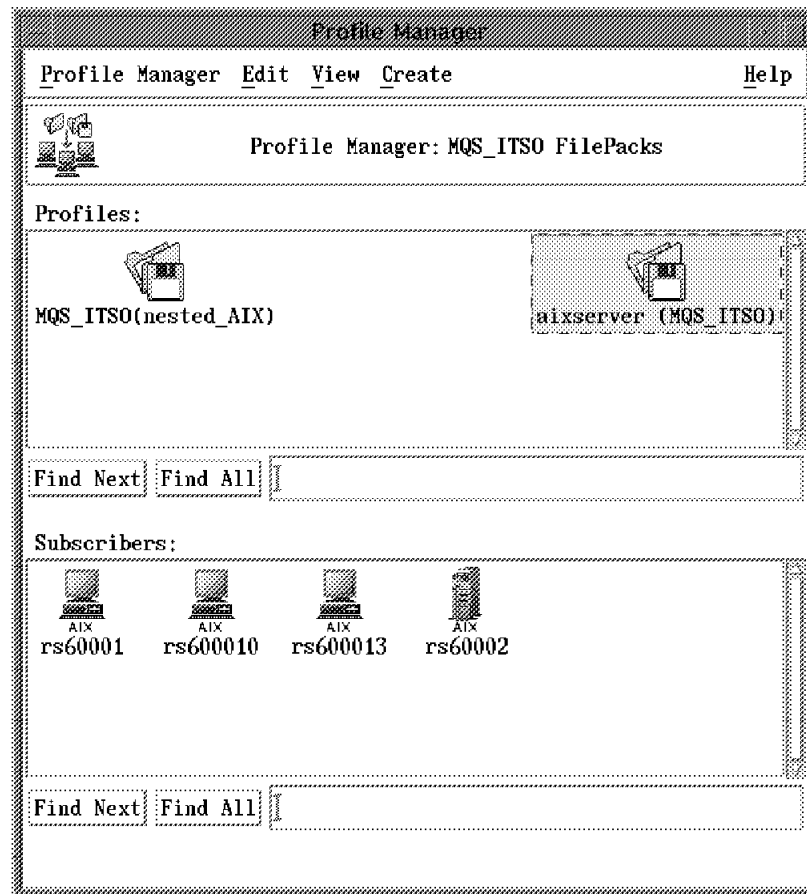


Figure 61. Select aixserver File Pack

- g. It is possible to see exactly what is in the file pack and where any log information will be written by clicking on the **aixserver** file pack icon.

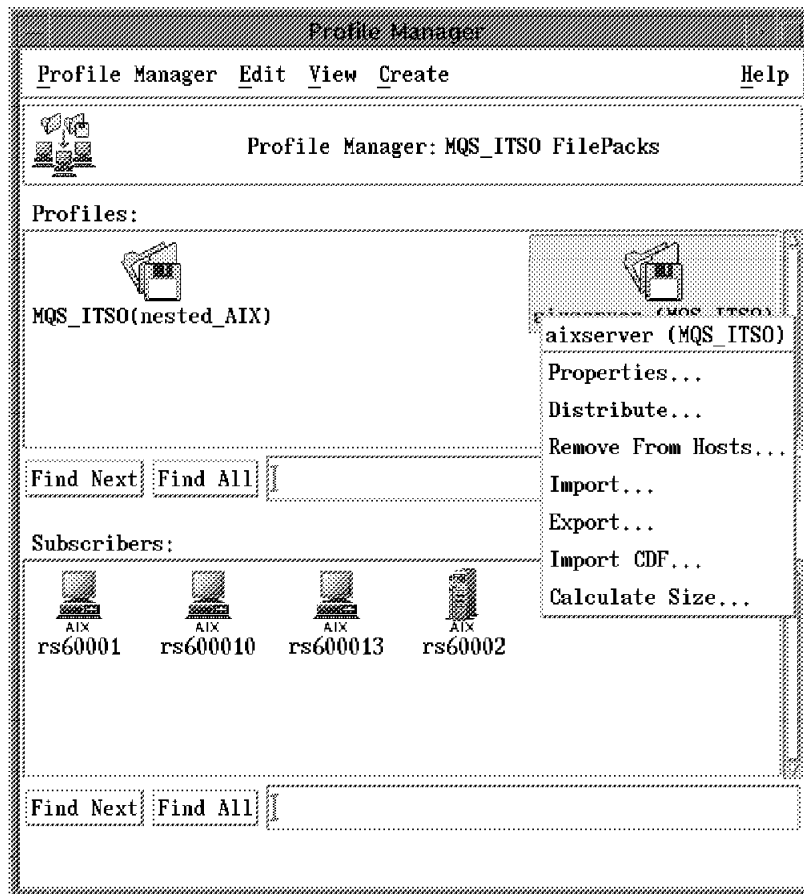


Figure 62. Selecting Properties

- h. A window will appear showing the properties of the aixserver file pack. Automatically, the TME 10 Module for MQSeries creates a nested file pack which will also be distributed. This contains the default MQSC script for machines that do not have the MQSeries samples distributed.

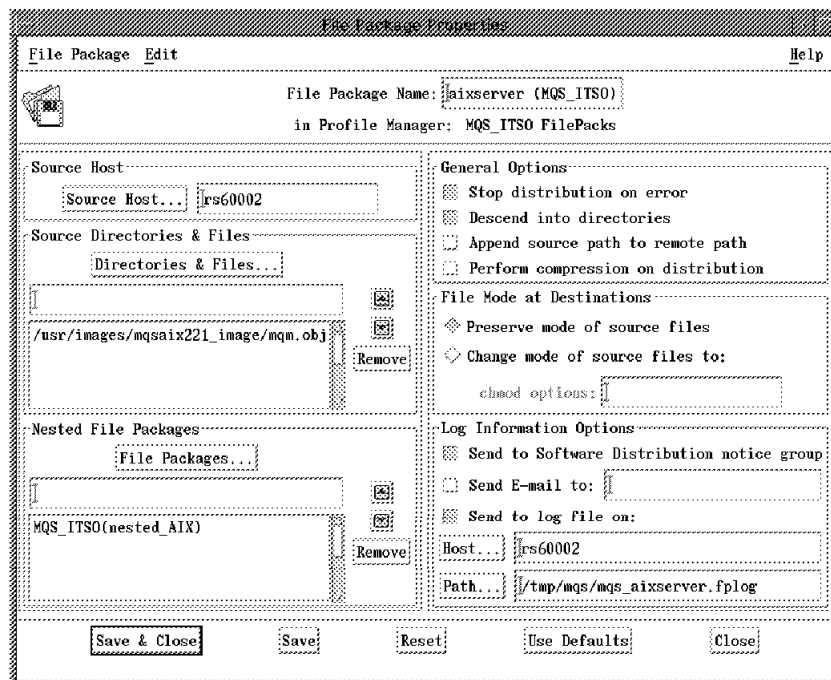


Figure 63. Properties of the aixserver File Pack

- i. We change the nested AIX file pack to include two more shell scripts. These are called `crtqm1.sh` and `mqs_crt.sh`. These shell scripts create a queue manager with a name that is the TCP/IP hostname converted to upper case. This is part of the naming convention used by our ITSO sample application. The first shell script finds the TCP/IP hostname, converts it to uppercase and then calls the second shell script passing the name as an argument. The second file, `mqs_crt.sh`, creates a default queue manager, starts it, creates the default objects and then issues `endmqm`.

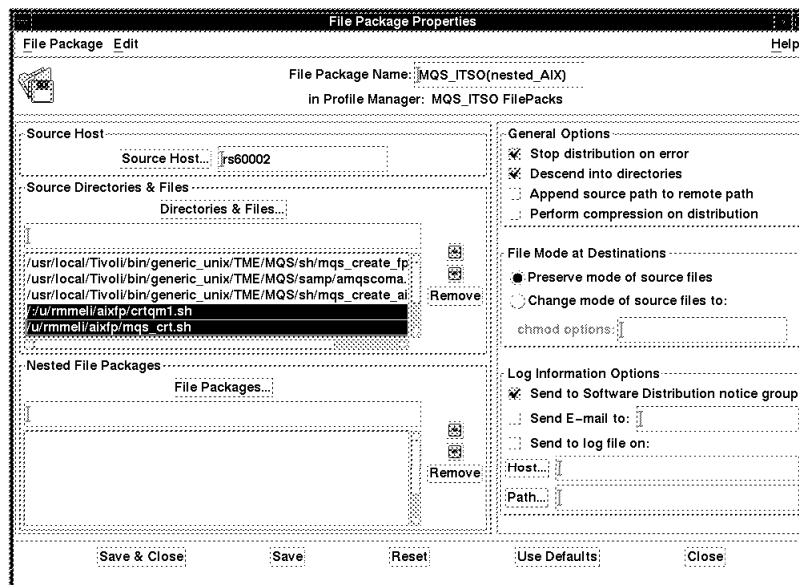


Figure 64. Properties of the Nested File Pack

- j. To perform the distribution, drag the aixserver icon over the rs600010 subscriber icon.

When complete, if successful, MQSeries will be installed. There are log files that created. On rs60002 (the machine the distribution occurred from) there is a log file called mqs_aixserver.log in directory /tmp/mqs. On rs600010 (the machine on which MQSeries was installed), there are two log files. The first is called mqs_aixserver.complist. This file indicates what componenets were installed. The second file is called mqs_aixserver.installout and is the output from installp. These files are in /tmp/mqs also.

Note: If you experience problems when distributing to AIX, make certain that /tmp on the target node has sufficient space to hold the MQSeries install image (/tmp is used by the file package to temporarily store the input to installp when installing on the target node). To determine the amount of space needed, you can check the size of the mqm.obj file which is included in the file package (see Figure 64 on page 53).

2. Windows NT

Creating a Windows NT file pack is similar to AIX.

- a. Select **MQS_ITSO Install Tasks**.
- b. Select **MQS_ITSO Create Windows NT File Pack**.

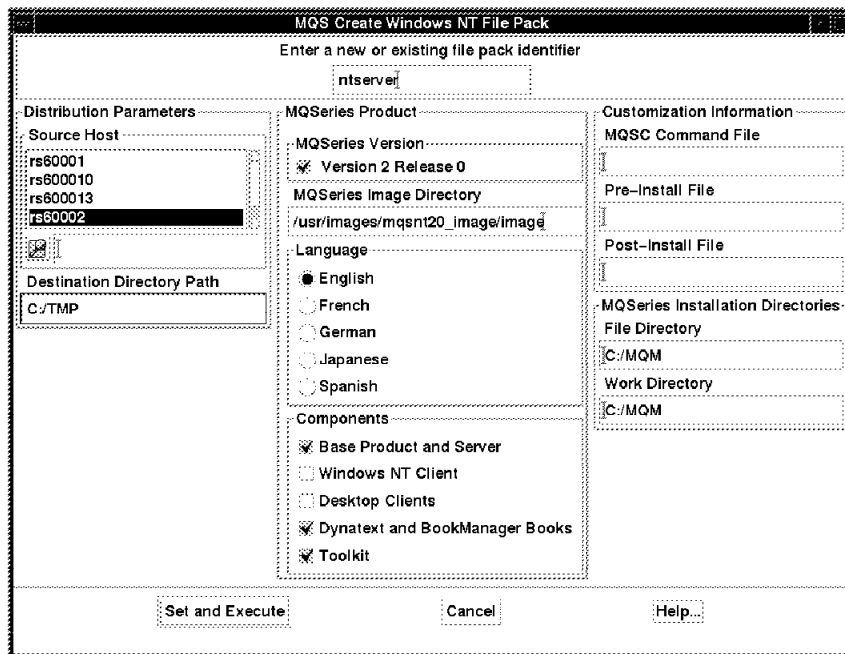


Figure 65. Create Windows NT File Pack

- c. When created, from the main policy region panel select **MQS_ITSO FilePacks**.
- d. To perform the distribution, drag the ntserver icon over the wtr05107 subscriber icon.

When complete, if successful, MQSeries will be installed.

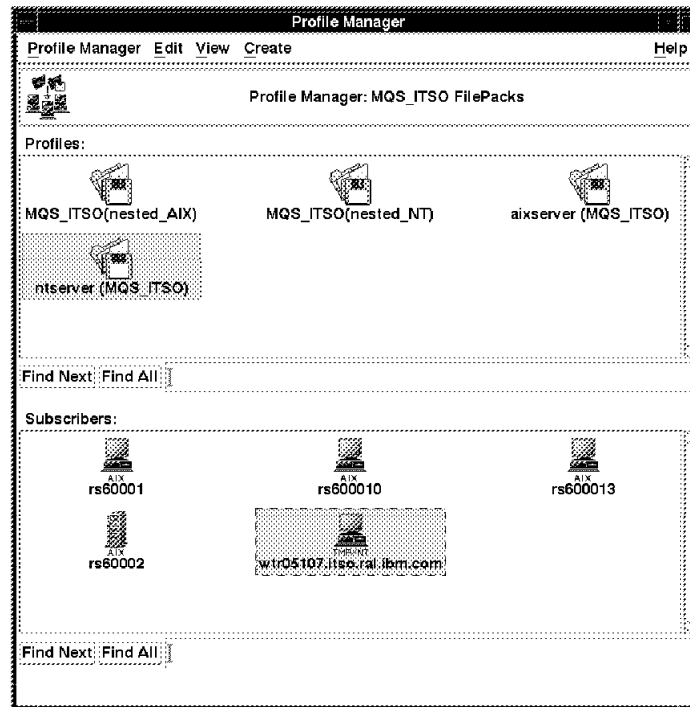


Figure 66. Distributing the ntserver File Pack

Note that the installation on Windows NT requires an executable called `wrunui.exe`. This executable is distributed only with the Tivoli Windows NT TMR serve code. Copy this file to each of your Windows NT managed nodes.

You may want to refer to Appendix C, “Additional Information on Installing MQSeries on Windows NT” on page 63 for some additional information on installing MQSeries on Windows NT.

2.11 Installing and Configuring an MQSeries Application

This section contains screen captures on how to use Courier to install an MQI application. The MQI application in question is one written over a period of time in the ITSO in Raleigh. It consists of two separate programs. The client application sends messages to a pre-defined queue on either a local queue manager or a remote queue manager. The server application (which is triggered) then sends the messages back to the client application. We create an AIX filepack consisting of the two programs (called `wt6kping0` and `wt6kpong0`) and associated `mqsc` scripts. There is one script for each of the queue managers in the ITSO TMR. Another shell script (`distrib.sh`) then installs the programs and runs the relevant `mqsc` script on the default queue manager on the particular machine the file pack is distributed to.

The total list of files is as follows:

- Client application - `wt6kping0`
- Server application - `wt6kpong0`
- Installation shell script - `distrib.sh`
- MQSC scripts - `RS60001.mqsc`, `RS60002.mqsc`, `RS600010.mqsc`, `RS600013.mqsc` and `WTR05107.mqsc`

First we create the AIX file pack:

1. From the MQS_ITSO Policy Region panel select **MQS_ITSO File Packs**.

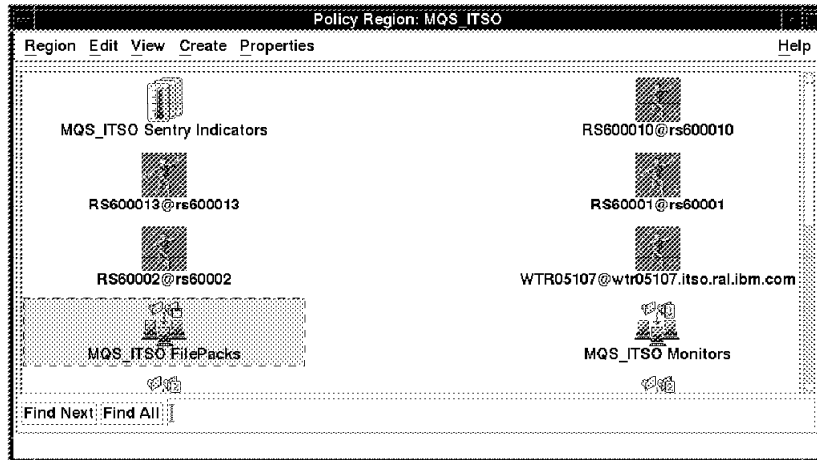


Figure 67. Select MQS_ITSO File Packs

2. We then need to create a profile. Select **Create->Profile**.

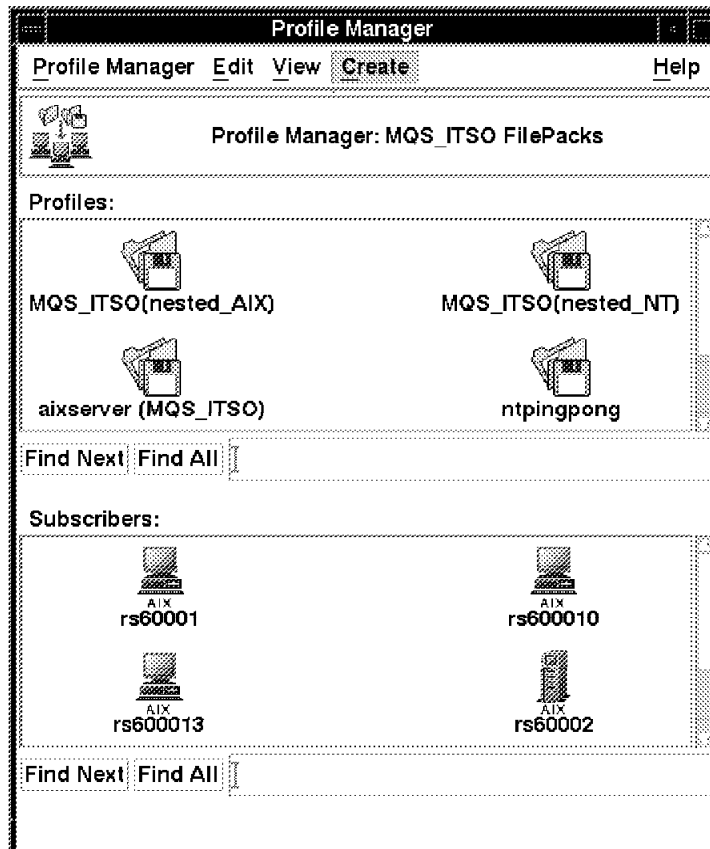


Figure 68. Select Create Profile

3. Enter the name of the profile, aixpingpong and select **FilePackage**.

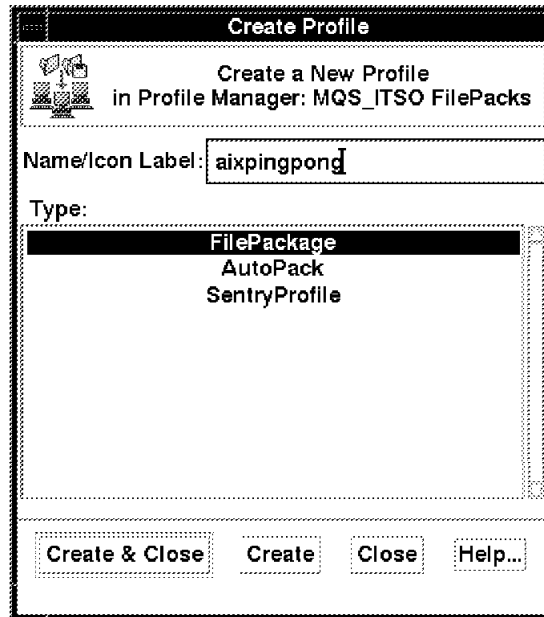


Figure 69. Create aixpingpong Profile

4. Click on **Create & Close**.
5. With the cursor over the new aixpingpong file pack icon, select **Properties**.
6. Enter the host where the files that make up the file pack are located and the locations and names of the files.
7. We write log information (on machine rs60002) in case the distribution fails for some reason, into a file called /tmp/aixpingpong.log.

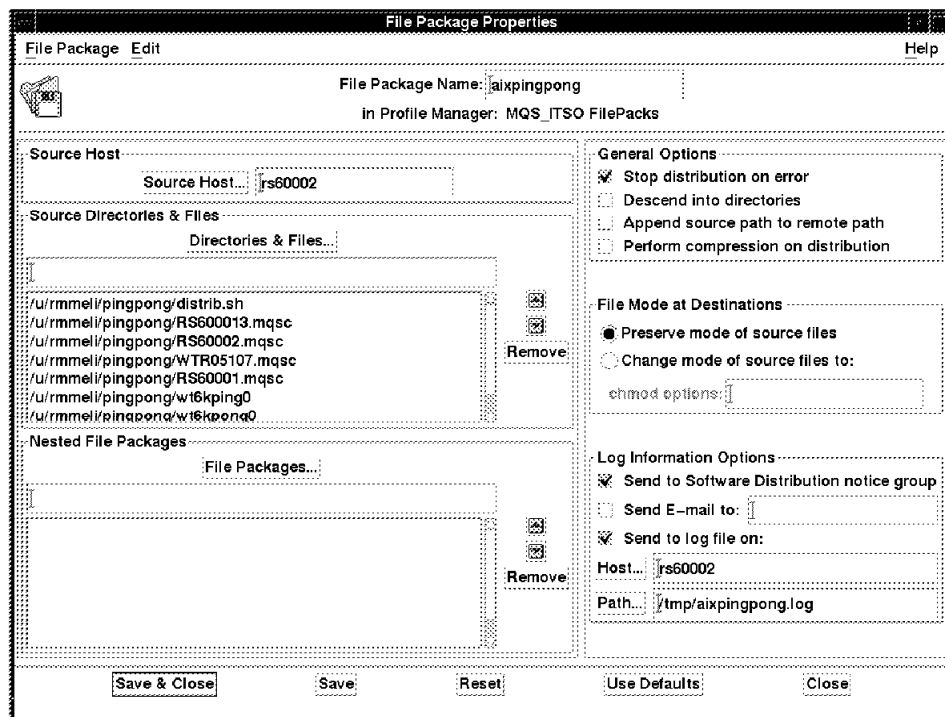


Figure 70. Enter Files for File Pack

8. Then, with this panel still visible, select **Edit->Platform-Specific Options->UNIX Options**. A new panel appears.
9. We enter the path that Tivoli Software Distribution will place the files, /tmp/pingpong.
10. We select **After Distribution**.
11. Enter /tmp/pingpong/distrib.sh in the Enter Program Name field. This will be executed after the distribution has taken place.

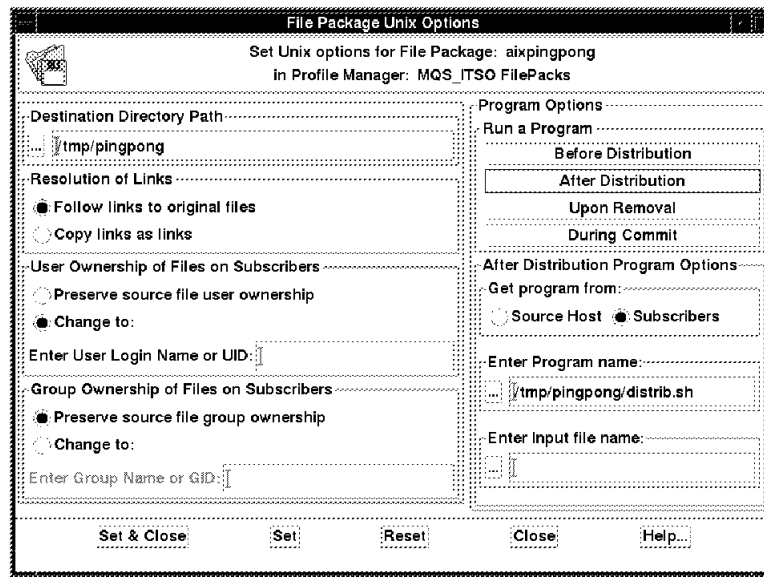


Figure 71. File Package UNIX Options

12. Select **Set & Close**.
 13. Select **Save & Close** on the File Package Properties panel.
 14. Drag the aixpingpong over the required AIX machine subscriber icon.
- Distribution and installation is complete.

2.12 Summary Comments

This initial offering of TME 10 Module for MQSeries shows much promise as a contributor to managing environments involving MQSeries. The module takes advantage of additional TME 10 core products such as TME 10 Distributed Monitoring and TME 10 Software Distribution while also providing adapters for interfacing with TME 10 Enterprise Console. This integration of MQSeries management with TME 10 allows for eventual exploitation of event correlation and other matters which will be demonstrated in upcoming ITSO projects.

Appendix A. TME 10 Module for MQSeries Directory Structure

This appendix gives pointers to the location of files installed by the TME 10 Module for MQSeries. The example shown here is specific to AIX but can be generalized for the other platforms by determining the Tivoli install directory and database directory from the TME 10 odadmin command. As an example, on the machine RS60002, this command produces the following output:

- Install directory = /usr/local/Tivoli/bin
- Database directory = /var/spool/Tivoli/rs60002.db

In /usr/local/Tivoli/bin/generic_unix/TME/MQS are the following subdirectories:

- baroc - Contains the event class definition files specific to the MQSeries events.
- doc - Contains the users guide and release notes in postscript format.
- dsl - Contains the dialog for the various MQSeries tasks.
- icons - Contains the icons used by the TME 10 Module for MQSeries.
- rls - Contains the TEC Adapter rules
- samp - Contains the MQSeries default MQSC script.
- sh - Contains all the TME Module shell scripts.
- tll - Contains all the TEC MQSeries task shell scripts.

In /var/spool/Tivoli/rs60002.db various objects are added that will be used by the TME 10 Module for MQSeries.

In /usr/local/Tivoli/bin/aix4-r1/TME/Mqs are the following directories:

- MqsServer - Contains files for defining object classes used by the TME 10 Module for MQSeries.
- bin - Contains platform-specific executables.
- sh - Contains shell scripts for callback methods used for some of the task dialogs.

A shared library is installed in /usr/local/Tivoli/lib/aix4-r1.

\$INSTALL_DIR/aix4-r1/TME/TEC/adapters/bin contains the files for the MQSeries TEC adapter. For example, the .cgf file in this directory is a configuration file for a queue manager.

Appendix B. Shell Script to Remove TME 10 Module for MQSeries

```
#!/bin/sh
#
# shell script to clean up and deinstall the MQS module
#
#
#
echo "Deleting files and de-installing MQS module"

OSERV=objcall 0.0.0 get_oserv

INTERP=objcall $OSERV query interp

INST_DIR=objcall $OSERV query install_dir
DB_DIR=objcall $OSERV query db_dir
export INST_DIR

BINDIR=$INST_DIR/$INTERP
MQSDIR="$INST_DIR/generic_unix/TME/MQS"
MNOID=objcall 0.0.0 get_host_location
MNNAME=idlatrr -t -g $MNOID label string || diagmsg
MNNAME=eval echo $MNNAME

TMETOP=echo $INST_DIR | awk -Fbin '{print $1}'

set -x
rm "$TMETOP"lib/$INTERP/.installed/MQS_LIB
rm $INST_DIR/$INTERP/.installed/MQS_BIN
rm $INST_DIR/$INTERP/.installed/MQSeries_Adapter_BIN
rm $INST_DIR/generic_unix/.installed/MQS_GBIN
rm $INST_DIR/generic_unix/.installed/MQSeries_Adapter_GBIN
rm "$DB_DIR"/.installed/MQS*
rm "$TMETOP"msg_cat/.installed/MQS_CAT

rm -rf $INST_DIR/generic_unix/TME/MQS
rm -rf $BINDIR/TME/Mqs
cd $BINDIR/TME/TEC/adapters/bin
rm tecad_mqseries
rm tecad_mqseries.cfg
rm tecad_mqseries.mqsc
rm tecad_mqseries*

if "$INTERP" = "w32-ix86" ; then
    rm mqsaterm
    rm mqsaisup
fi

echo "de-install completed..."
```

Figure 72. Example Shell Used to Remove TME 10 Module for MQSeries

Appendix C. Additional Information on Installing MQSeries on Windows NT

This section addresses problems that occur with the user IDs that TME 10 uses on Windows NT machines. One restriction that MQSeries has on user IDs is that they cannot be longer than 12 characters. By default, TME 10 uses the root userid on UNIX systems and this gets mapped to Administrator on Windows NT. The Administrator ID is acceptable for installing MQSeries or MQSeries csd(s) but is not a valid name for creating queue managers or, for example, defining/changing MQSeries objects. To be able to create a queue manager as part of the TME 10 Software Distribution process, we need to change the default behavior of Tivoli on Windows NT.

To do this we need to modify the user login mapping using the TME 10 widmap command. A login map in TME 10 enables TME 10 to associate a single user login name to the correct user account on a specified operating system. We want to change the behavior for Windows NT or the w32-ix86 TME 10 description for it.

The list of operations to change it are as follows:

1. First find the current login mapping for root_user by issuing:

```
widmap list_entries root_user
```

The answer should look something like:

```
default root
w32-ix86 Administrator
```

2. Then issue the following command to change the Administrator userid to tmemqs

```
widmap add_entry root_user w32-ix86 tmemqs
```

The default login mapping will have been changed for Windows NT.

3. Next, create a user on the relevant Windows NT machine called tmemqs and make it a member of the Administrators group and a member of the mqm group.

With this complete, we can successfully distribute the MQSeries File Packs which will create and configure a queue manager.

Appendix D. TME 10 MQSeries Module - Oriented Labs

These labs are used in ITSO MQSeries and TME 10 workshops.

Some of this material is repeated in the body of this document.

The following lab exercise is intended to give you some exposure to installing and using the TME 10 MQSeries Module.

D.1 Installing and Basic Use of the TME 10 MQSeries Module

The lab configuration is:

1. Managed node: rs600014
Has MQSeries installed on it.
2. TMR server and TEC server: rs600012

We install the TME 10 MQSeries module on rs600012 because it is the TMR server and the TEC Adapter for MQSeries on rs600014 because it has MQSeries installed and configured with a queue manager named RS600014.

We start with the installation of the TME 10 Module for MQSeries module:

1. Ensure you are logged on as root.
2. The product is located in /home/workshop/mqams on the machine: rs600011.
3. From the Tivoli desktop select **Install->Install Product**.
4. In the install product dialog box select the **Select Media** button and type the directory path where the product to be installed is and save your changes.
5. Select the product to install. In our case, it is TME 10 Module for MQSeries Version 1.0.
6. Select the client to install on; in our case the machine is rs600012.
7. Click on the **Install & Close** button to start the installation.
8. Click on the **Continue Install** button of the dialog box that shows the actions that will be taken.
9. Look at the messages displayed during the installation to see if any error occurs; you can also refer to the log file in /tmp called mqs_server_init.log.

After these steps we have an icon for the Module for MQS on the TME desktop.

Use the same steps to install the TEC Adapter for MQSeries on rs600014. The only difference is when you select the product to install (in this case it is TME 10 TEC Adapter for MQSeries Version 1.0) and the client to install on (rs600014).

Next, we create a management domain that will contain all the MQSeries resources in the TMR:

1. Double-click on the **Module for MQSeries** icon on the Tivoli desktop.
2. Double-click on the **MQS Utility Tasks** icon that you find into it.
3. Double-click on the **MQS Create Management Domain** icon.

4. In the dialog box, type in the name for the management domain; in our case: ITS0_MQ_Series. The module will prepend **MQS_** to that name.
5. At the end of this task a new icon appears in the Policy Region-Module for MQS panel.
6. The output of the task should be like this:

```
#####
Task Name: MQS Create Management Domain
Task Endpoint: rs600012 (ManagedNode)
Return Code: 0
-----Standard Output-----
Log file is (/tmp/MQS_ITS0_MQ_Series_mqs_create_domain.log).
Starting at... Fri Aug 1 15:04:53 EDT 1997
Management domain (MQS_ITS0_MQ_Series) already exists.
Notification group MQS_ITS0_MQ_Series created
Creating tec adapter tasks/jobs.
Creating queue manager tasks/jobs.
Creating queue tasks/jobs.
Creating cmd server tasks/jobs.
Creating channel tasks/jobs.
Creating control tasks/jobs.
Creating process tasks/jobs.
Creating installation tasks/jobs.
Creating sentry resources.
Sentry has not been installed. No profile manager for monitor
is created.
MQS management domain (MQS_ITS0_MQ_Series) is now available.

New MQS_ITS0_MQ_Series_admin and MQS_ITS0_MQ_Series_super roles have
been created for this domain.

These roles must be assigned to the administrators who are responsible
for managing resources and executing tasks in this
(MQS_ITS0_MQ_Series) domain.
Ending at... Fri Aug 1 15:09:29 EDT 1997
-----Standard Error Output-----
#####
```

7. As you can see, the task also creates two new TME roles called MQS_ITS0_MQ_Series_super and MQS_ITS0_MQ_Series_admin that you must assign to the administrators of that domain. Use the following steps:
 - a. Select **Administrator** from the TME desktop.
 - b. Click on the **Root_rs600012-region** icon and select **Set TMR Roles**.
 - c. Select the **MQS_ITS0_MQ_Series_super** and the **MQS_ITS0_MQ_Series_admin** roles and move them from the right-hand window to the left hand one.
 - d. Select **Change and Close**.
 - e. Close the TME desktop and restart it for the roles to be properly assigned.

If you double-click on the **MQS_ITS0_MQ_Series** icon you will see that your domain is empty of MQSeries resources and the action to populate the management domain is performed by the discover queue manager task. Use the following steps:

1. Double-click on the **MQS_ITS0_MQ_Series** icon.

2. Select the **MQS_ITSO_MQ_Series Queue Manager Tasks** icon.
3. Select **MQS_ITSO_MQ_Series Discover Queue Mgr Tasks**.
4. In the dialog box select the output destination (Display on Desktop), the endpoint for the task (add rs600014 because MQSeries is installed on it), and the **Execute & Dismiss** button.
5. The output of the task is displayed in the Discover Queue Managers Output panel should look as the following:

```
#####
Task Name: MQS_ITSO_MQ_Series Discover Queue Managers
Task Endpoint: rs600012 (ManagedNode)
-----Standard Output-----
The MQS subdirectory (/var/mqm) doesn't exist.
-----Standard Error Output-----
#####
Task Name: MQS_ITSO_MQ_Series Discover Queue Managers
Task Endpoint: rs600014 (ManagedNode)
-----Standard Output-----
Sentry has not been Installed. No Sentry monitor created.
Queue manager (RS600014) set to running state.
Task completed on host (rs600014)
-----Standard Error Output-----
#####
```

In our lab, MQSeries is installed only on the rs600014 machine so when the discovery task searches for the mq.ini file on rs600012 it cannot find the /var/mqm directory.

D.1.1 Configuring TEC for the TME 10 MQSeries Module

To configure the TEC in order to collect and display the events generated by queue managers we have to:

1. Configure the TEC Adapter we installed on rs600014.
2. Configure the event server with the set of rules regarding MQSeries events.
3. Assign the MQSeries event group to a TEC console.

These are the steps to configure the TEC adapter:

- a. Double-click on the **Module for MQS** policy region.
- b. Double-click on the **MQS_ITSO_MQ_Series** icon.
- c. Double-click on the **MQS_ITSO_MQ_Series Adapter Tasks** icon.
- d. Double-click on the **MQS_ITSO_MQ_Series Configure TEC Adapter** task.
- e. Select the output destination (in our case Display on Desktop), the endpoint (in our case rs600014), and click on the **Execute and Dismiss** button.
- f. In the next dialog box type the queue manager name (in our case RS600014) and click the **Set and Execute** button.

The output of this task should look as the following:

```
#####
Task Name: MQS_ITSO_MQ_Series Configure TEC Adapter
Task Endpoint: rs600014 (ManagedNode)
Return Code: 0
-----Standard Output-----
Creating adapter configuration file for Queue Manager: RS600014
Adapter configuration file successfully created

Creating MQSC Setup file for Queue Manager: RS600014
MQSC setup file successfully created

Configuring queue manager RS600014 for TME events
Total commands:8 Syntax errors:0 Unprocessed commands:0
TEC Adapter configuration successful
-----Standard Error Output-----
#####
```

These are the steps to configure the event server:

- a. Check that the event server is active. If it is stopped, check that it is configured and startable. It is active if the Desktop icon has a red arrow on it. To start or stop it you have to select the icon and select **Start-up** or **Shut Down**.
- b. Double-click on the **Module for MQS** icon.
- c. Double-click on the **MQS Utility Tasks** icon.
- d. The TEC is installed on a machine that does not have MQSeries installed so we have to change the group name in the execution privileges of the task:
 - Click **MQS Configure Event Server** with the right mouse button.
 - Select **Edit Task** from the menu.
 - Change the Group Name in the Execution Privileges to sys.
 - Click on the **Change and Close** button.
- e. Double-click on the **MQS Configure Event Server** task icon.
- f. Type as New Rule Base Name the MQS rule name and click **Set and Execute**.

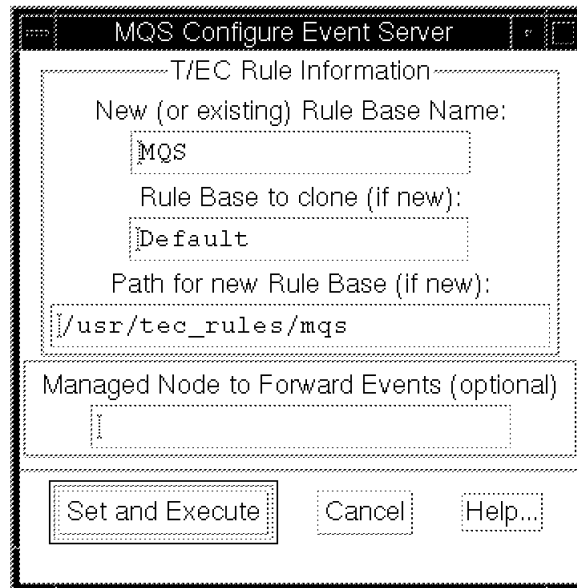


Figure 73. MQS Configure Event Server Panel

When the command ends successfully you can see a new icon for the rule bases clicking with the right mouse button on the **Event Server** icon and selecting **Rules Basis....** The new icon is called MQS.

Then, we need to assign the MQSeries Event Group to a TEC Console as follows:

- a. Select the TEC Console icon on the desktop (in our case Root_rs600012-region).
- b. Click on **Assign Events Groups**.
- c. Select the **MQSeries Event Group** and move it into the Assigned Event Groups window.
- d. Select the **Admin Role** as admin and click the **Set & Close** button.

Now, starting the TEC console from the Tivoli Desktop you can see the MQSeries Event Group. If you click on this icon you can see the console for the MQSeries events.

D.1.2 Generating an MQSeries Performance Event and a TEC Example

We can do a small exercise to generate a performance event and get it displayed on the TEC console.

1. Define a local queue on the RS600014 queue manager enabling the Queue Depth High event. The Queue Depth Low event will be automatically enabled by a Queue Depth High event. You can define the queue using the TME MQSeries module GUI:
 - Double-click on the **Module for MQS->MQS_ITSO_MQ_Series** icon.
 - Double-click on the **MQS_ITSO_MQ_Series Queue Tasks** icon.
 - Double-click on the **MQS_ITSO_MQ_Series Create Local Queue** task.
 - Select the Output Destination (in our case Display on Desktop), the endpoint (in our case rs600014), and click on the **Execute and Dismiss** button.

- Type in the parameters to create a local queue with the Generate Depth High event enabled and the Maximum Number of messages set to twenty to make the test easier as in Figure 74 on page 70 and click on the **Set and Execute** button.

Figure 74. Create Local Queue Panel

2. Open the TEC console and the MQSeries event group to see when the performance event is displayed.
3. Put some messages on the queue using the MQSeries sample program with the command `/usr/lpp/mqm/samp/bin/amqsput TEST.DEPL0W`, write some messages followed by pressing the Enter key, and then press Enter one time more to exit the program. This command has to be executed on the rs600014 machine because it is an MQSeries sample program.

When you pass the high threshold, an event is processed on TEC with status=OPEN.

4. Get all the messages from the queue using the command `/usr/lpp/mqm/samp/bin/amqsget TEST.DEPL0W` and you should see that another event is generated, and it is correlated with the first; the status changes to ACK and the previous event is deleted.

The MQS_Q_DEPTH_LOW/HIGH events are correlated by an MQS rule. In the MQS base rules some other events are correlated, for example the MQ_Q_MGR_ACTIVE/QUIESCING events. You may modify these rules, and also, write rules tailored for your installation using the TME 10 Enterprise Console Rule Builder.

D.1.3 Building and Using File Packs

We may use TME 10 MQSeries module to create a file pack to install MQSeries on a machine. The machine on which we want to install the MQSeries product is rs600012 and these are the steps to create the file pack:

1. Double-click on the **Module for MQS->MQS_ITSO_MQ_Series** icon.
2. Double-click on **MQS_ITSO_MQ_Series Install Tasks**.
3. Double-click on **MQS_ITSO_MQ_Series Create AIX File Pack**.
4. Modify the panel as shown in Figure 75 on page 71.

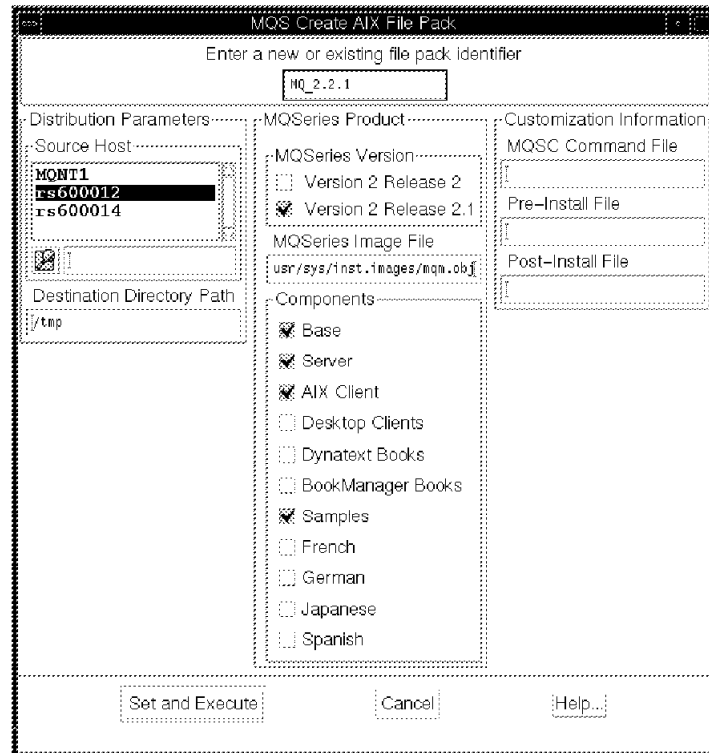


Figure 75. MQS Create AIX File Pack

5. Click on the **Set and Execute** button.

The icon corresponding to your file pack is in the file pack's profile manager. To see and use this file pack:

1. Double-click on the **Module for MQS->MQS_ITSO_MQ_Series** icon.
2. Double-click on **MQS_ITSO_MQ_Series FilePacks**.
3. In the Profiles section of the panel you can see an icon representing your file pack and in the Subscribers section of the panel there are icons of all the machines that could be targets of the software distribution.
4. If you double-click on the icon of the file pack (in our case MQ_221), you can see and modify the distribution and installation options for your package.
5. The distribution is performed when you drag and drop the file pack icon on the subscriber (or subscriber's) icon.

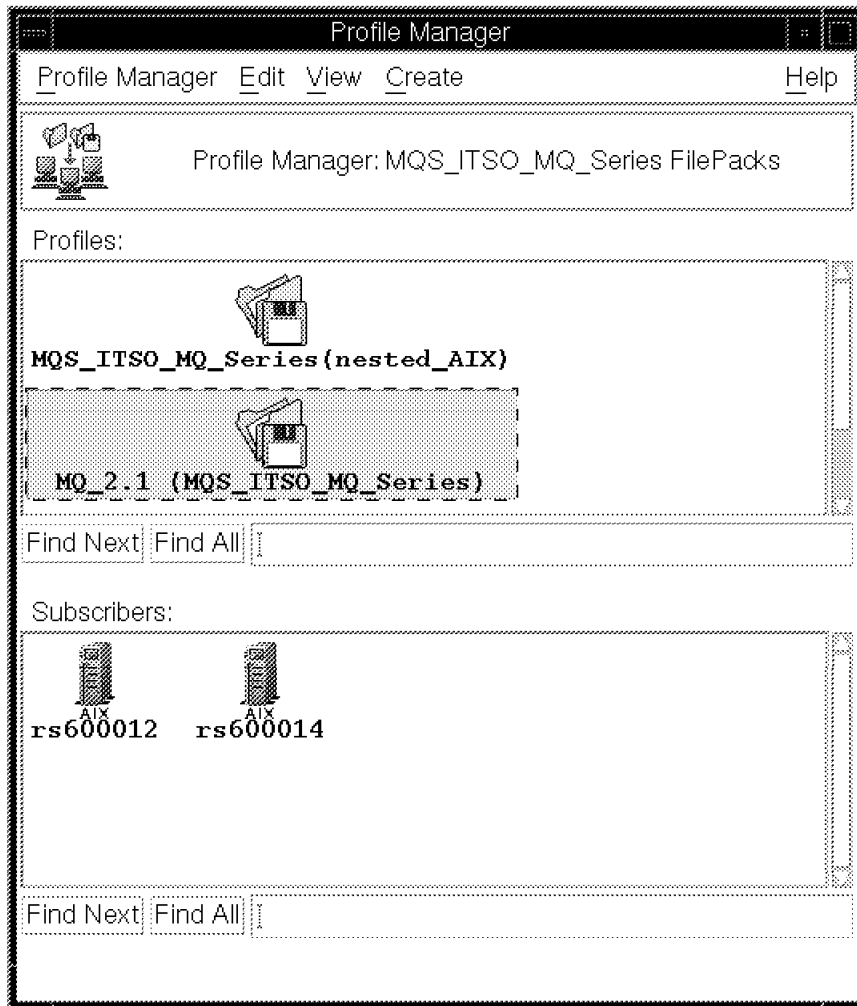


Figure 76. Start Distribution for the Selected Install MQSeries FilePack

We may also use Courier and the TME 10 Module for MQSeries to distribute an MQSeries application and all the MQSeries configurations that the queue manager needs to make this application operational.

1. Double-click on the **Module for MQS->MQS_ITSO_MQ_Series** icon.
2. Double-click on **MQS_ITSO_MQ_Series FilePacks**.
3. Select **Create->Profile**.
4. Enter the profile name (in our case aixpingpong) and select **FilePackage**.
5. Click on the **Create & Close** button.
6. Select the new File Pack icon, click with the right mouse button and select **Properties**
7. Fill in the dialog panel with the files you want to distribute and some more options as is shown in Figure 77 on page 73. We are going to distribute two executable files that are the MQ application, a shell script file (distrib.sh) to execute the configuration of the queue manager to use this application, and a file that contains the queue manager definitions (RS600014.mqsc).

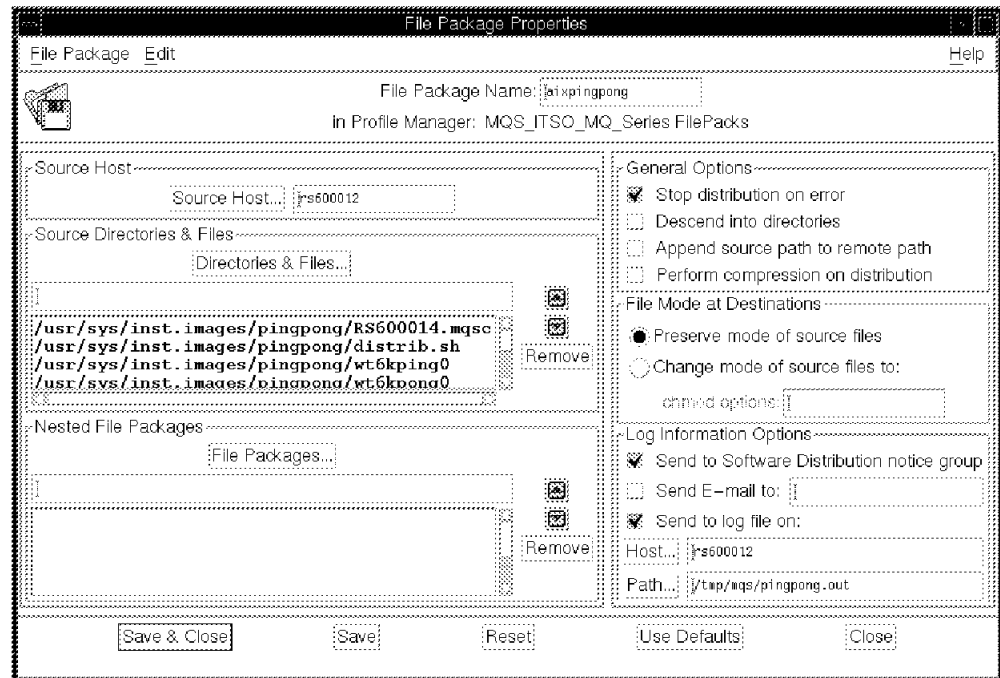


Figure 77. Start Distribution for the Selected MQSeries Application FilePack

8. Then, with this panel still visible, select **Edit->Platform-Specific->Unix Options** and enter in the new panel the path where Tivoli Software Distribution will place the files (in our case /tmp/pingpong).
9. Select **After Distribution** and enter /tmp/pingpong/distrib.sh in the Enter Program Name field.
10. Select **Set & Close**.
11. Select **Save & Close**.
12. Drag the aixpingpong package onto the rs600014 subscriber to start the distribution.

D.1.4 An Additional File Distribution Lab

The lab environment is:

- TMR server : rs60002
- TEC server : rs600013
- Managed nodes: rs60001, rs600010
- All machines have MQSeries for AIX 221 installed and configured.

In this exercise we want to distribute and install a Fix Pack for MQSeries using Courier. The Fix Pack can be downloaded from the internet going to the URL www.hursley.ibm.com/mqseries. In this site select the **support** section and then the **MQSeries Fixes FTP Site** item. In the aix221 directory you can find the fixes for MQSeries for AIX and you can download them by clicking on the file name.

We choose the U447350.tar.Z Fix Pack and we put it in the /usr/mqm directory on rs60002.

To uncompress and extract the files we use the following commands:

- uncompress U447350.tar.Z
- tar -xvf U447350.tar

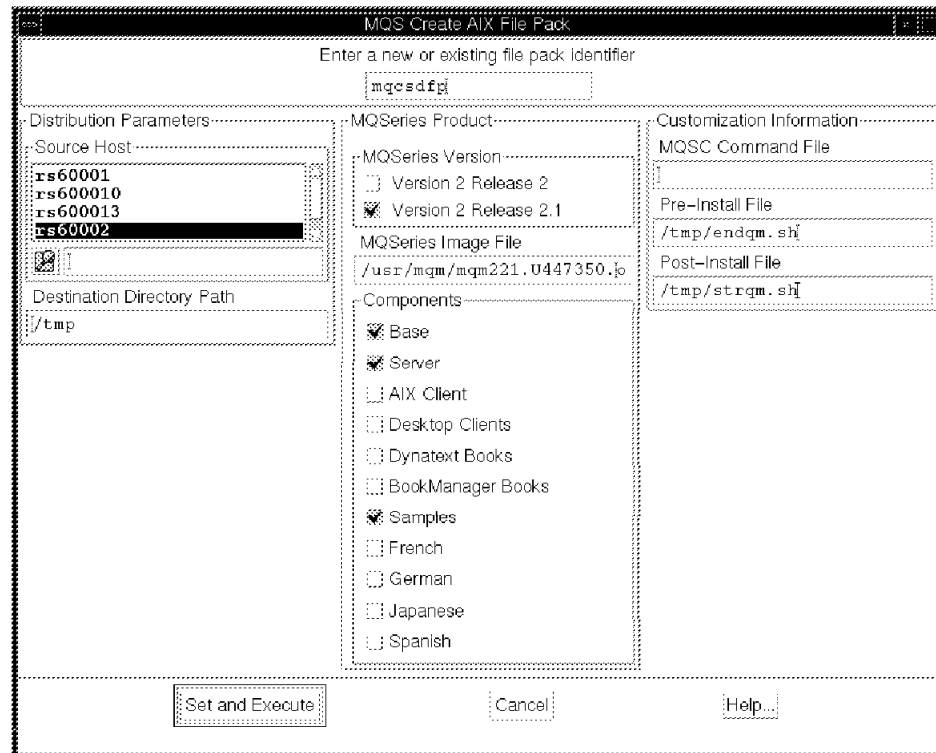
Now we have a file called mqm221.U447350.obj and this is the Fix Pack we need.

To distribute this file and have it installed on a managed node we have to create a file pack and these are the steps:

1. Double-click on the **Module for MQS->MQS_ITSO** icon.
2. Double-click on **MQS_ITSO Install Tasks**
3. Double-click on **MQS_ITSO Create AIX File Pack**.
4. Fill in the panel with the Source Host (in our case rs60002), the path of the image file (in our case /usr/mqm/mqm221.U447350.obj), and the components to install (in our case: Base, Server, Samples) as is shown in Figure 78 on page 75.

Notice that we also add a pre-install file that is a shell script to stop the queue manager before the installation of the Fix Pack and a post-install File that is a shell script to restart the queue manager after the installation.

The two script files are called endqm.sh and strqm.sh. They are in the /tmp directory on rs60002.



The image shows a dialog box titled "MQS Create AIX File Pack". It has a title bar with standard window controls. The main area is divided into three sections: "Distribution Parameters", "MQSeries Product", and "Customization Information".

Distribution Parameters:

- Enter a new or existing file pack identifier:
- Source Host: A list box containing "rs60001", "rs600010", "rs600013", and "rs60002". The "rs60002" entry is highlighted.
- Destination Directory Path:

MQSeries Product:

- MQSeries Version:
 - ☐ Version 2 Release 2
 - ☒ Version 2 Release 2.1
- MQSeries Image File:
- Components:
 - ☒ Base
 - ☒ Server
 - ☐ AIX Client
 - ☐ Desktop Clients
 - ☐ Dynatext Books
 - ☐ BookManager Books
 - ☒ Samples
 - ☐ French
 - ☐ German
 - ☐ Japanese
 - ☐ Spanish

Customization Information:

- MQSC Command File:
- Pre-Install File:
- Post-Install File:

At the bottom, there are three buttons: "Set and Execute", "Cancel", and "Help...".

Figure 78. MQS Create AIX File Pack

5. Click on the **Set and Execute** button.
6. If the creation is successful, the output of the command should be as in Figure 79 on page 76.

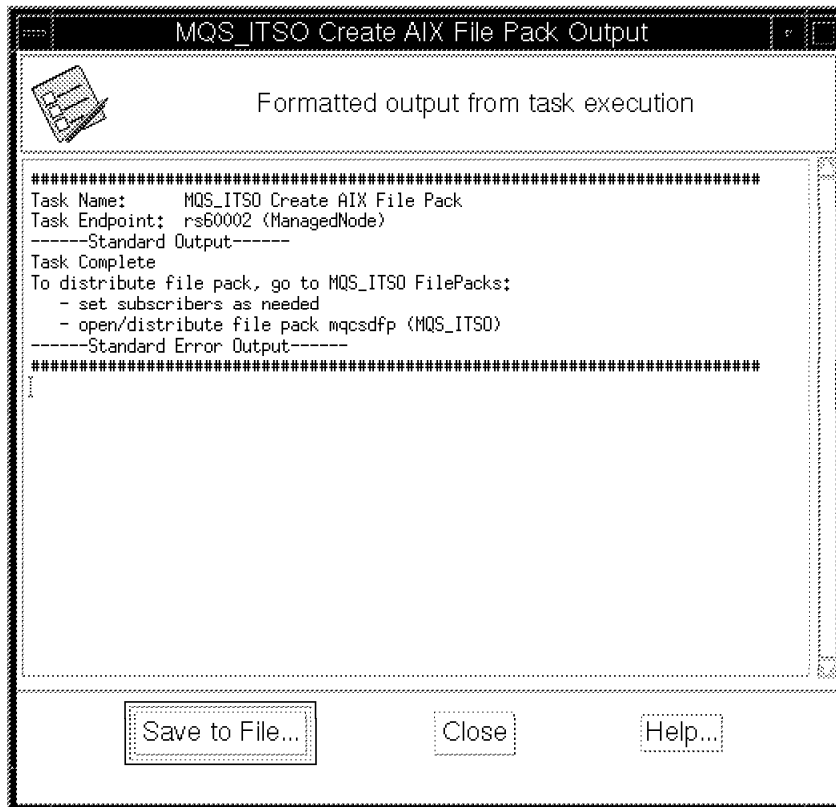


Figure 79. MQS Create AIX File Pack Output

To distribute the file pack we have to go in the profile manager for software distribution. Do this as follows:

- Double-click on the **Module for MQS->MQS_ITSO** icon.
- Double-click on **MQS_ITSO FilePacks**.

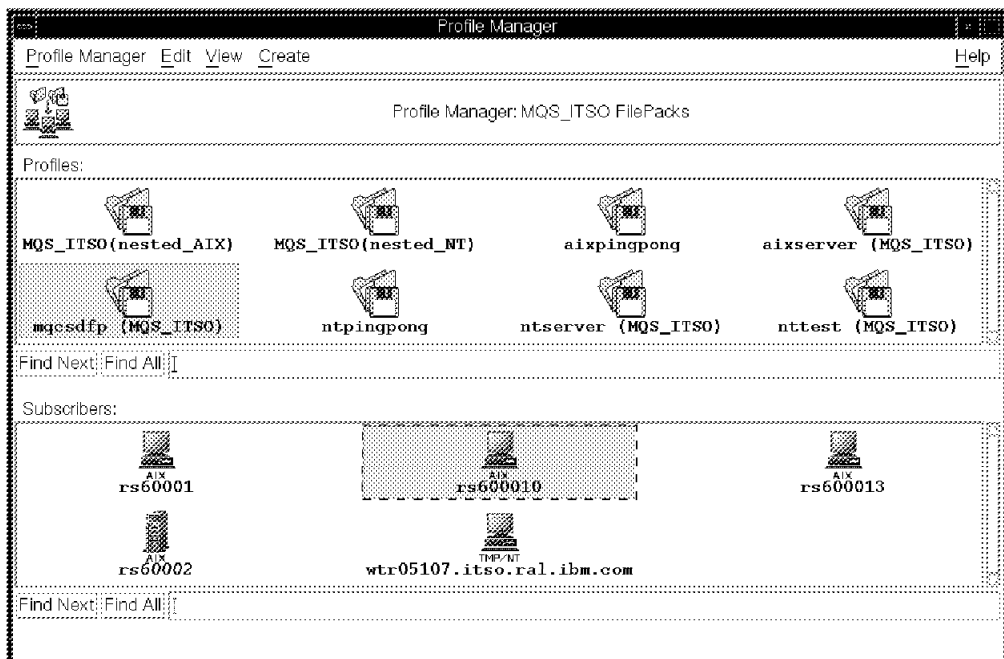


Figure 80. MQS_ITSO FilePacks Profile Manager

- In the Profiles section of the Profile Manager panel you can see the mqcsdftp (MQS_ITSO) icon that represents the FilePack. If you double-click on that icon you can see what the file pack contains and you can also change some installation option according to the target installation platform.

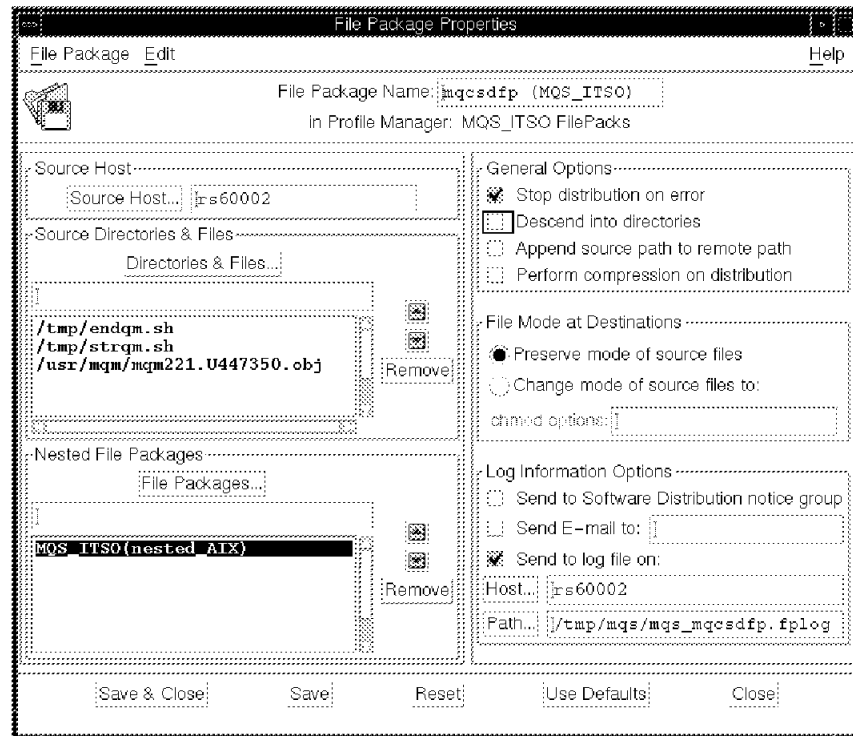


Figure 81. File Package Properties

Note: Click on the **Edit** drop-down menu to see the Platform Specific Options. In our case, select **Unix Options**. Notice that the Destination Directory Path is set as /tmp, that means that the file pack will be temporarily saved in this directory during the installation procedure. We had problems with software distribution on a managed node because the tmp file system was too small and the software distribution task stopped with an error completely misleading: An internal error occurred:IPC shutdown. In this case we enlarged the file system. However, we could have changed the Destination Directory Path with a different and larger file system.

- To distribute it on the rs600010 managed node just drag and drop the file pack icon onto the rs600010 icon.

There are some log files that can show information about the success or failure of the distribution and installation. One of these files is on the source machine, rs60002 (file name: /tmp/mqs/mqs_mqcsdftp.fplog). Another one is on the target machine, rs600010 (file name: /tmp/mqs_mqcsdftp.installout).

This is the listing of the FilePack distribution log file /tmp/mqs_mqcsdftp.fplog.

```

File Package: "mqcsdfp (MQS_ITS0)"
Operation:    install (m=5)
Finished:     Wed Aug 6 14:44:07 1997
-----
Source messages:
<none>
-----
rs60002:SUCCESS
starting script: /tmp/mqs/mqs_create_fp_post.sh
script stderr:  ·Group "mqm" exists.
User "mqm" exists.
Request to quiesce the queue manager accepted. The queue manager
will stop when there is no further work for it to perform. MQSeries
product installed successfully Refer to file
/tmp//mqs_mqcsdfp.installout on rs60002 for details MQSeries queue
manager started. Installation completed. Additional kernel
configuration may be needed to increase user processes. Refer to
MQSeries System Management Guide for details. " script complete:
status=0 =====

```

D.1.5 Command Access to MQSeries MQM MVS/ESA Using TME 10 Module for MQSeries

We have connectivity to an MVS MQSeries server. Let's see what kind of management we can do using the TME 10 Module for MQSeries even though MVS is not a Tivoli managed node during this exercise. Since we will not be using the Tivoli framework, we will communicate via MQSeries. The MQSeries channels have to be defined between MVS and a managed node of the TMR which contains the TME 10 Module for MQSeries. The channels must be default channels, which means that the transmission queue must have the same name of the remote queue manager.

In our case there are two pairs (MQSeries sending/receiving) of channels between MVS (SA18) and rs60001:

- An SNA pair of channels called rs60001.to.racsq2m1 and racsq2m1.to.rs60001.
- A TCP/IP pair of channels called rs60001.2.racsq2m1.t and racsq2m1.2.rs60001.t.

We use the SNA channel as the Tivoli service channel and the other one to generate channel events in our lab.

The first test we do is to execute an MQSC command on the MVS queue manager (the queue manager is called CSQ2). To do this we have to add a definition in the AIX queue manager because the SNA channel did not use a default transmission queue; we have to define a queue manager alias. We would not need to define this queue if the transmission queue had been called CSQ2:

```

DEFINE QREMOTE (CSQ2) RQMNAME(CSQ2) XMITQ(RACSQ2M1) +
SCOPE(QMGR)

```

Now we can execute a display channel status command (for example) on the MVS machine using the TME 10 MQSeries Module tasks:

1. Double-click on the **Module for MQS->MQS_ITS0** icon
2. Double-click on **MQS_ITS0 Channel Tasks**.

3. Double-click on **MQS_ITSO Display Channel Status**.
4. Fill in the panel with the Output Destination (in our case Display on Desktop), the Task Endpoint (in our case rs60001), and click on the **Execute and Dismiss** button.
5. Fill the MQS Display Channel Status panel with the Channel Name (in our case RACSQ2M1.TO.RS60001), the queue manager name (in our case CSQ2), select ALL for the attributes you want to see. Then, select **Remote-MVS** from the drop down menu and click on the **Set and Execute** button.

Figure 82. MQS Display Channel Status

The output of the command is shown in Figure 83 on page 80.

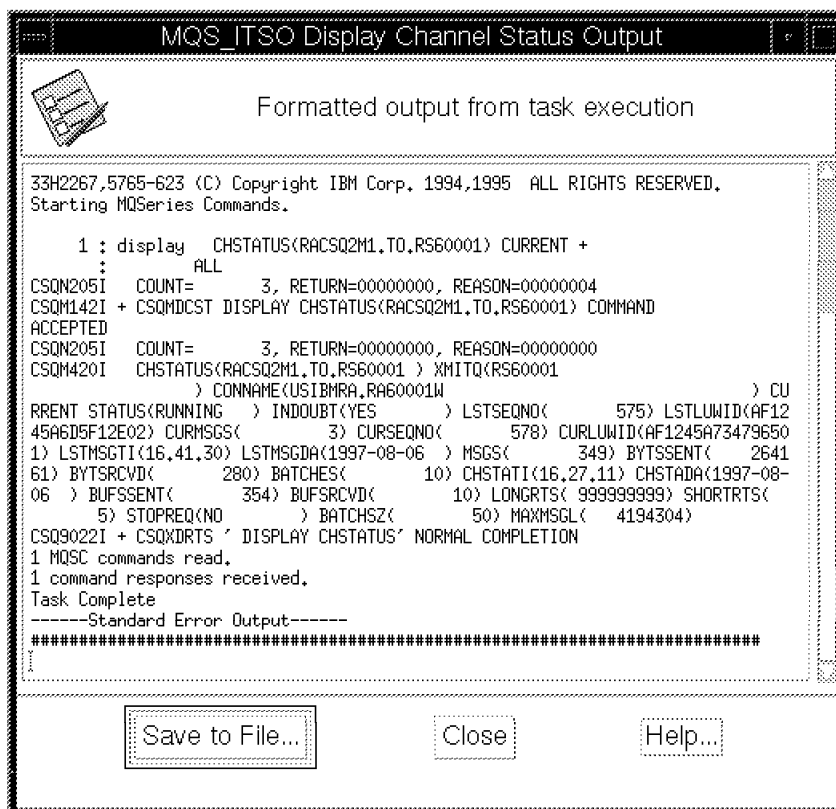


Figure 83. MQS Display Channel Status Output

The same result could have been obtained by using the MQSeries-provided runmqsc command on rs60001 as shown in Figure 84 on page 80.

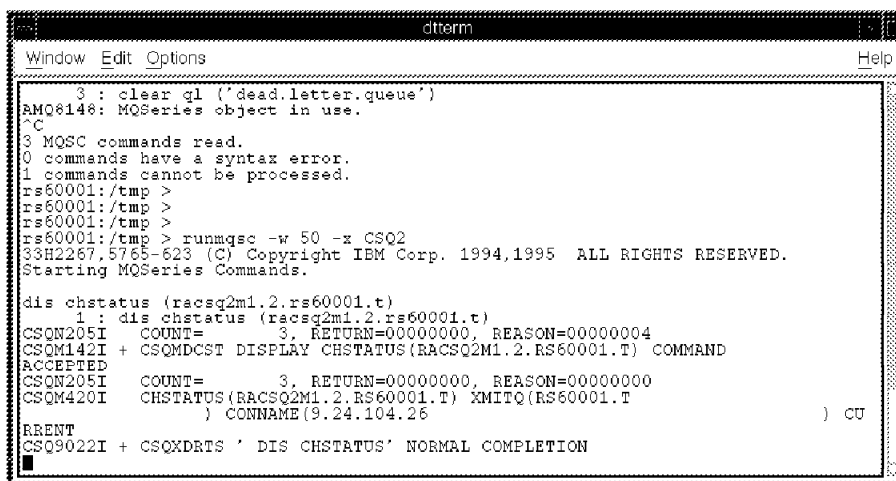


Figure 84. runmqsc Command Remote to MVS

D.1.6 TEC and MQSeries MQM MVS/ESA Using TME 10 Module for MQSeries

The second test is about TEC and how the events generated by the MVS queue manager can be routed to the TEC console.

We know that when the TEC adapter is installed on a managed node, it creates a queue called EVENTQ and routes the three default event queues to this new queue. For MVS we have to do the same thing, with the difference being that the EVENTQ for MVS has to be an MQSeries remote queue from the MQSeries on the managed node.

Make some definitions on the MVS queue manager as follows:

1. Delete the three event queues:

```
DELETE QL (SYSTEM.ADMIN.QMGR.EVENT)
DELETE QL (SYSTEM.ADMIN.CHANNEL.EVENT)
DELETE QL (SYSTEM.ADMIN.PERFM.EVENT)
```

2. Define three alias queues to point to the EVENTQ.REMOTE:

```
DEFINE QALIAS(SYSTEM.ADMIN.QMGR.EVENT) REPLACE DEFPSIST(NO) +
DEFPRTY(0) PUT(ENABLED) GET(ENABLED) TARGQ(EVENTQ.REMOTE)

DEFINE QALIAS(SYSTEM.ADMIN.CHANNEL.EVENT) REPLACE DEFPSIST(NO) +
DEFPRTY(0) PUT(ENABLED) GET(ENABLED) TARGQ(EVENTQ.REMOTE)

DEFINE QALIAS(SYSTEM.ADMIN.PERFM.EVENT) REPLACE DEFPSIST(NO) +
DEFPRTY(0) PUT(ENABLED) GET(ENABLED) TARGQ(EVENTQ.REMOTE)
```

3. Define a remote queue to point to the EVENTQ on rs60001:

```
DEFINE QREMOTE(EVENTQ.REMOTE) RNAME(EVENTQ) RQMNAME(RS60001) +
XMITQ(RS60001) REPLACE
```

4. Alter the queue manager to enable events generation:

```
ALTER QMGR AUTHOREV(ENABLED) INHIBTEV(ENABLED) LOCALEV(ENABLED) +
PERFMEV(ENABLED) REMOTEEV(ENABLED) STRSTPEV(ENABLED)
```

After those definitions, if the SNA channel is active between rs60001 and MVS, you can see the MVS events shown in the TEC console. To see this, do the following:

1. Double-click on the **Root_Ih97.rs60002_Region** icon.
2. Click on the **MQSeries Event Group** icon to see the console for MQSeries events.
3. To create an event, you can (for example) stop the TCP/IP channel rs60001.2.racsq2m1.t and see what happens at the TEC console as shown in Figure 85 on page 82.



Figure 85. TEC Console Showing Channel Stopped

- Then you can restart the channel and see what changes in the TEC console as shown in Figure 86 on page 82.

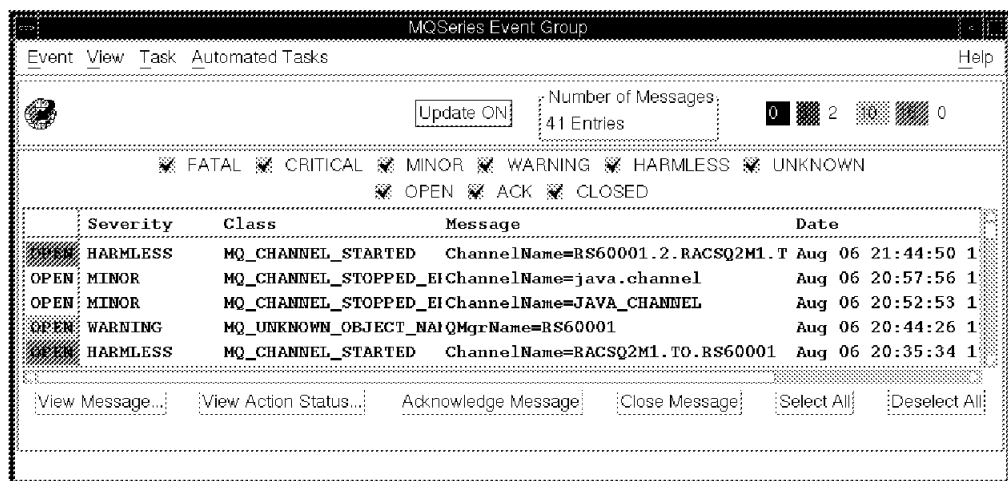


Figure 86. TEC Console Showing Channel Started

You should see that the MQ_CHANNEL_STOPPED event is closed when the channel starts again. This is because there is a TEC rule that correlates the two events in that way. You can also see that the action to stop or start the channel produces two MQ_CHANNEL_STOPPED or MQ_CHANNEL_STARTED events because one of them is generated by the MVS queue manager and the other by the queue manager on rs60001.

Appendix E. Changes in the TME 10 Module for MQSeries V1.0 Revision B

Revision B was not used during the project which developed this redbook. The information in this appendix is provided as a convenience to the reader of this document and the reader should refer to the product release notes for the latest information.

Changes in the TME 10 Module for MQSeries Module V1.0 Revision B are:

- All Tasks will run under the virtual ID (\$tmemqs_user). The default mappings of the \$tmemqs_user will be "root" for the Unix systems, and "tmemqs" for the NT systems.

The mappings of the \$tmemqs_user can be changed using the widmap command. Refer to the TME 10 Framework Reference manual for more details.

- A problem has been fixed to allow the installation of the MQSeries TEC adapter on an NT managed node when the TMR server is running on a Unix platform.
- A problem has been fixed to create the "MQS run command" task when the module is installed on any platform. This task is required for some of the other tasks to work properly on the NT systems.
- A new parameter (-h hostname) has been added on the invocation of the MQSeries TEC adapter. This parameter is used to pass the managed node name to the TEC adapter to be used in the TEC events.
- A fix has been added to enforce the authorization check on the command execution from the context menu of a queue manager icon. To execute a command from the context menu of a queue manager icon, an administrator must have either <MQS_domainname>_super or <MQS_domainname>_admin role.
- A problem has been fixed to create the "MQS Display Queue Messages" task correctly for each of the supported platforms.
- The BaseQName attribute has been added to the MQSeries performance event class.

Notes on installation of this Revision B are:

- If you already have the Revision A installed on your system, you will need to take the following actions before installing the Revision B:
 1. Stop all MQSeries TEC adapters. You can stop a TEC adapter from the queue manager icon or by using the "Stop TEC adapter" task.
 2. Delete all the queue manager icons from each of the management domains that you have created. The queue manager icons can be re-created using the "MQS Discover Queue Managers" task after Revision B is installed.
- After installing the Revision B, you will need to take the following actions if you have previously used the module:

1. Execute the "MQS Create Management Domain" task to re-create the management domains that you have previously created. This is required in order for the tasks in the management domain to be updated.
2. Execute the "MQS Discover Queue Managers" task to re-discover and re-create the queue manager icons for each of the management domains.
3. Execute the "MQS Configure Event Server" task to load or reload the MQSeries event classes.

Appendix F. Special Notices

This publication is intended to help system administrators involved with MQSeries to begin use of the TME 10 Module for MQSeries and its integration into a management solution involving TME 10 products when MQSeries is used within an enterprise. The information in this publication is not intended as the specification of any programming interfaces that are provided by TME 10 Module for MQSeries. See the PUBLICATIONS section of the IBM Programming Announcement for TME 10 Module for MQSeries for more information about what publications are considered to be product documentation.

References in this publication to IBM products, programs or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent program that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program or service.

Information in this book was developed in conjunction with use of the equipment specified, and is limited in application to those specific hardware and software products and levels.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Licensing, IBM Corporation, 500 Columbus Avenue, Thornwood, NY 10594 USA.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact IBM Corporation, Dept. 600A, Mail Drop 1329, Somers, NY 10589 USA.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The information contained in this document has not been submitted to any formal IBM test and is distributed AS IS. The information about non-IBM ("vendor") products in this manual has been supplied by the vendor and IBM assumes no responsibility for its accuracy or completeness. The use of this information or the implementation of any of these techniques is a customer responsibility and depends on the customer's ability to evaluate and integrate them into the customer's operational environment. While each item may have been reviewed by IBM for accuracy in a specific situation, there is no guarantee that the same or similar results will be obtained elsewhere. Customers attempting to adapt these techniques to their own environments do so at their own risk.

Any performance data contained in this document was determined in a controlled environment, and therefore, the results that may be obtained in other operating environments may vary significantly. Users of this document should verify the applicable data for their specific environment.

Reference to PTF numbers that have not been released through the normal distribution process does not imply general availability. The purpose of including these reference numbers is to alert IBM customers to specific information relative to the implementation of the PTF when it becomes available to each customer according to the normal IBM PTF distribution process.

The following terms are trademarks of the International Business Machines Corporation in the United States and/or other countries:

AIX	IBM
IMS	MQ
MQSeries	

The following terms are trademarks of other companies:

C-bus is a trademark of Corollary, Inc.

Java and HotJava are trademarks of Sun Microsystems, Incorporated.

Microsoft, Windows, Windows NT, and the Windows 95 logo are trademarks or registered trademarks of Microsoft Corporation.

PC Direct is a trademark of Ziff Communications Company and is used by IBM Corporation under license.

Pentium, MMX, ProShare, LANDesk, and ActionMedia are trademarks or registered trademarks of Intel Corporation in the U.S. and other countries.

UNIX is a registered trademark in the United States and other countries licensed exclusively through X/Open Company Limited.

Other company, product, and service names may be trademarks or service marks of others.

Appendix G. Related Publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redbook.

G.1 International Technical Support Organization Publications

For information on ordering these ITSO publications see "How to Get ITSO Redbooks" on page 89.

- *TME 10 Cookbook for AIX Systems Management and Networking Applications*, SG24-4867
- *Examples of Using TME 10 NetView for AIX V5 and TME 10 NetView for Windows NT*, SG24-4898-01

G.2 Redbooks on CD-ROMs

Redbooks are also available on CD-ROMs. **Order a subscription** and receive updates 2-4 times a year at significant savings.

CD-ROM Title	Subscription Number	Collection Kit Number
System/390 Redbooks Collection	SBOF-7201	SK2T-2177
Networking and Systems Management Redbooks Collection	SBOF-7370	SK2T-6022
Transaction Processing and Data Management Redbook	SBOF-7240	SK2T-8038
AS/400 Redbooks Collection	SBOF-7270	SK2T-2849
RS/6000 Redbooks Collection (HTML, BkMgr)	SBOF-7230	SK2T-8040
RS/6000 Redbooks Collection (PostScript)	SBOF-7205	SK2T-8041
Application Development Redbooks Collection	SBOF-7290	SK2T-8037
Personal Systems Redbooks Collection	SBOF-7250	SK2T-8042

G.3 Other Publications

These publications are also relevant as further information sources:

- *Tivoli TME 10 Module for MQSeries User's Guide*, GC31-8116

How to Get ITSO Redbooks

This section explains how both customers and IBM employees can find out about ITSO redbooks, CD-ROMs, workshops, and residencies. A form for ordering books and CD-ROMs is also provided.

This information was current at the time of publication, but is continually subject to change. The latest information may be found at <http://www.redbooks.ibm.com>.

How IBM Employees Can Get ITSO Redbooks

Employees may request ITSO deliverables (redbooks, BookManager BOOKs, and CD-ROMs) and information about redbooks, workshops, and residencies in the following ways:

- **PUBORDER** — to order hardcopies in United States
- **GOPHER link to the Internet** - type GOPHER.WTSCPOK.ITSO.IBM.COM
- **Tools disks**

To get LIST3820s of redbooks, type one of the following commands:

```
TOOLS SENDTO EHONE4 TOOLS2 REDPRINT GET SG24xxxx PACKAGE
TOOLS SENDTO CANVM2 TOOLS REDPRINT GET SG24xxxx PACKAGE (Canadian users only)
```

To get BookManager BOOKs of redbooks, type the following command:

```
TOOLCAT REDBOOKS
```

To get lists of redbooks, type one of the following commands:

```
TOOLS SENDTO USDIST MKTTOOLS MKTTOOLS GET ITSOCAT TXT
TOOLS SENDTO USDIST MKTTOOLS MKTTOOLS GET LISTSERV PACKAGE
```

To register for information on workshops, residencies, and redbooks, type the following command:

```
TOOLS SENDTO WTSCPOK TOOLS ZDISK GET ITSOREGI 1996
```

For a list of product area specialists in the ITSO: type the following command:

```
TOOLS SENDTO WTSCPOK TOOLS ZDISK GET ORGCARD PACKAGE
```

- **Redbooks Web Site on the World Wide Web**
<http://w3.itso.ibm.com/redbooks>
- **IBM Direct Publications Catalog on the World Wide Web**
<http://www.elink.ibm.link.ibm.com/pbl/pbl>

IBM employees may obtain LIST3820s of redbooks from this page.

- **REDBOOKS category on INEWS**
- **Online** — send orders to: USIB6FPL at IBMMAIL or DKIBMBSH at IBMMAIL
- **Internet Listserver**

With an Internet e-mail address, anyone can subscribe to an IBM Announcement Listserver. To initiate the service, send an e-mail note to announce@webster.ibm.link.ibm.com with the keyword subscribe in the body of the note (leave the subject line blank). A category form and detailed instructions will be sent to you.

Redpieces

For information so current it is still in the process of being written, look at "Redpieces" on the Redbooks Web Site (<http://www.redbooks.ibm.com/redpieces.htm>). Redpieces are redbooks in progress; not all redbooks become redpieces, and sometimes just a few chapters will be published this way. The intent is to get the information out much quicker than the formal publishing process allows.

How Customers Can Get ITSO Redbooks

Customers may request ITSO deliverables (redbooks, BookManager BOOKs, and CD-ROMs) and information about redbooks, workshops, and residencies in the following ways:

- **Online Orders** — send orders to:

	IBMMAIL	Internet
In United States:	usib6fpl at ibmmail	usib6fpl@ibmmail.com
In Canada:	caibmbkz at ibmmail	lmannix@vnet.ibm.com
Outside North America:	dkibmbsh at ibmmail	bookshop@dk.ibm.com

- **Telephone orders**

United States (toll free)	1-800-879-2755
Canada (toll free)	1-800-IBM-4YOU
Outside North America	(long distance charges apply)
(+45) 4810-1320 - Danish	(+45) 4810-1020 - German
(+45) 4810-1420 - Dutch	(+45) 4810-1620 - Italian
(+45) 4810-1540 - English	(+45) 4810-1270 - Norwegian
(+45) 4810-1670 - Finnish	(+45) 4810-1120 - Spanish
(+45) 4810-1220 - French	(+45) 4810-1170 - Swedish

- **Mail Orders** — send orders to:

IBM Publications Publications Customer Support P.O. Box 29570 Raleigh, NC 27626-0570 USA	IBM Publications 144-4th Avenue, S.W. Calgary, Alberta T2P 3N5 Canada	IBM Direct Services Sortemosevej 21 DK-3450 Allerød Denmark
--	--	--

- **Fax** — send orders to:

United States (toll free)	1-800-445-9269
Canada	1-403-267-4455
Outside North America	(+45) 48 14 2207 (long distance charge)

- **1-800-IBM-4FAX (United States) or (+1)001-408-256-5422 (Outside USA)** — ask for:

Index # 4421 Abstracts of new redbooks
Index # 4422 IBM redbooks
Index # 4420 Redbooks for last six months

- **Direct Services** - send note to softwareshop@vnet.ibm.com

- **On the World Wide Web**

Redbooks Web Site	http://www.redbooks.ibm.com
IBM Direct Publications Catalog	http://www.elink.ibm.link.ibm.com/pbl/pbl

- **Internet Listserver**

With an Internet e-mail address, anyone can subscribe to an IBM Announcement Listserver. To initiate the service, send an e-mail note to announce@webster.ibm.link.ibm.com with the keyword subscribe in the body of the note (leave the subject line blank).

Redpieces

For information so current it is still in the process of being written, look at "Redpieces" on the Redbooks Web Site (<http://www.redbooks.ibm.com/redpieces.htm>). Redpieces are redbooks in progress; not all redbooks become redpieces, and sometimes just a few chapters will be published this way. The intent is to get the information out much quicker than the formal publishing process allows.

IBM Redbook Order Form

Please send me the following:

Title	Order Number	Quantity

First name	Last name
------------	-----------

Company

Address

City	Postal code	Country
------	-------------	---------

Telephone number	Telefax number	VAT number
------------------	----------------	------------

• Invoice to customer number _____

• Credit card number _____

Credit card expiration date	Card issued to	Signature
-----------------------------	----------------	-----------

We accept American Express, Diners, Eurocard, Master Card, and Visa. Payment by credit card not available in all countries. Signature mandatory for credit card payment.

Index

A

administrators 10
AMS 1
Applications Management Specification (AMS) 1
automated operations 4

B

bibliography 87

C

command server 28

D

discovery 3, 12

E

errors: MQS_ITSO_mqs_create_domain.log 10
errors: MQS_ITSO_mqs_discover_qmgr.log 13
errors: mqs_server_init.log 8
event correlation 3, 23
event details 33
event filtering 44
event forwarding 44

I

in-band monitoring 3

L

log: mqs_config_evtsvr.log 22

M

managed node 2
management domain 8
management policies 4
mqs_create_domain.sh ITSO 12
mqs_enabtrg.sh 42
mqstec.tll 39
MVS 31

O

out-of-band monitoring 3

P

policy region 7, 9

S

scheduler 15
Sentry 2
Sentry monitors 25
shell script 12

T

TEC 31, 37
TEC Adapter 17
Tivoli database 36
TME 10 Distributed Monitoring 2
TME 10 Software Distribution 2
TMR 8
TMR Server 2

W

Windows NT 48
wrunui.exe 55

ITSO Redbook Evaluation

Examples of Using the TME 10 Module for MQSeries
SG24-2134-00

Your feedback is very important to help us maintain the quality of ITSO redbooks. **Please complete this questionnaire and return it using one of the following methods:**

- Use the online evaluation form found at <http://www.redbooks.com>
- Fax this form to: USA International Access Code + 1 914 432 8264
- Send your comments in an Internet note to redbook@vnet.ibm.com

Please rate your overall satisfaction with this book using the scale:
(1 = very good, 2 = good, 3 = average, 4 = poor, 5 = very poor)

Overall Satisfaction _____

Please answer the following questions:

Was this redbook published in time for your needs? Yes____ No____

If no, please explain:

What other redbooks would you like to see published?

Comments/Suggestions: **(THANK YOU FOR YOUR FEEDBACK!)**



Printed in U.S.A.

S624-2134-00

