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for Oracle TimesTen In-Memory Database User's Guide Release 12.1.0.3.0 E58955-01

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Oracle Enterprise Manager for Oracle TimesTen In-Memory Database User's Guide Release 12.1.0.3.0

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Contents

Pr	eface	ix
	Audience	ix
	Related documents	ix
	Conventions	ix
	Documentation Accessibility	x
W	hat's New	xi
	New features in release 12.1.0.3.0	xi
1	Installing the Enterprise Manager Plug-in for TimesTen	
	Installation prerequisites	1-1
	Additional requirements	1-2
	Installing the Enterprise Manager Plug-in for TimesTen	
	Download the plug-in	1-3
	Deploy the plug-in on Oracle Management Service	
	Deploy the plug-in on the Management Agent	
	Configure a TimesTen target	
	Initial automatic discovery configuration	
	Automatic discovery configuration for a TimesTen instance target	
	Automatic discovery configuration for a TimesTen database target	1-21
	Manual configuration for a TimesTen instance target	
	Manual configuration for a TimesTen database target	
	Verifying and validating the plug-in	
	Setting preferred credentials for a target	
	Changing the monitoring configuration of a TimesTen database target	
	Upgrading the Enterprise Manager Plug-in for TimesTen	
	Limited functionality when only upgrading Management Server	
	Uninstalling the Enterprise Manager Plug-in for TimesTen	
	Remove the TimesTen target	1-41
	Undeploy the plug-in from the Management Agent	
	Undeploy the plug-in from OMS	
	Delete the plug-in	1-52

2 Working with the TimesTen Target Page

Navigating to the TimesTen target page 2	2-1	
--	-----	--

Overview of the TimesTen instance target page	2-2
Overview of the TimesTen database target page	2-3
Setting the display time period and auto refresh rate of data on a target page	2-4
View data	2-5
Auto refresh	2-5
Viewing the log of control operations	2-5

3 Working with Access Control

Overview of access control	3-1
Creating a group	3-1
Defining roles	3-5
Creating users	3-16
Granting preferred credentials to users	3-20

4 Working with the TimesTen Instance Home Page

Viewing the TimesTen instance home page	4-1
Analyzing information on the TimesTen instance home page	4-1
Instance summary	4-2
Daemon status	4-2
Server status	4-3
Hosted databases	4-3

5 Working with the TimesTen Database Home Page

Viewing the TimesTen home page	5-1
Analyzing information on the TimesTen home page	5-1
Status and Summary	
Summary	5-2
Status	
Configuration	5-3
Performance Overview and Issues	5-3
Performance Overview	5-3
Database Usage (%)	5-4
Database Connections	5-4
	5-5
Issues	5-5
SQL Execution Time and Monitor	
SQL Monitor	5-6
SQL Execution Time Histogram	5-7

6 Working with the Performance Summary Page

Viewing the performance summary page	6-1
Analyzing information on the TimesTen performance summary page	6-1
Connections	6-2
Connects and disconnects	6-2
Statements	6-2
Write rates	6-3

Read rates	6-3
Ratio of prepares to executes	6-4
Break up of executed statement types	6-4
Summary	6-4
Detail	
Workload	6-5
Write workload	6-5
Read workload	6-6
Prepares and reprepares	6-7
Commits and rollbacks	6-7
Locks	6-7
Locks and deadlocks	6-8
Lock grants	6-8
Percentage of acquired locks without wait	6-9
Transaction Logs	6-9
Log holds	6-9
Log performance	6-10
Log reads and log flushes	6-10
Log buffer wait	6-10
Checkpoints	6-11

7 Working with the Transaction Monitor

Viewing the transaction monitor page	7-1
Analyzing information on the transaction monitor page	7-1
Outstanding locks	7-2
Transaction information	7-2
Lock detail for transaction	7-3
Awaiting locks	7-3

8 Working with the Client/Server Page

Viewing the client/server page	8-1
Analyzing information on the TimesTen client/server page	8-1
Server Workload	8-2
Write rates	8-2
Read rates	8-3
Commits and rollbacks	8-3
Statements	8-3
Write rates	8-4
Read rates	8-4
Network usage	8-4
Network round trips	
Bytes sent and received	8-5

9 Working with the Instance Control Menu

Viewing the instance control menu	9-1
Start/stop services	9-1

Service	9-2
Database	9-2
Create blackout	9-2
End blackout	9-2

10 Working with the Database Control Menu

Viewing the database control menu	10-1
Start/stop agents	10-1
Ram load/unload and policy settings	10-2
Load/unload RAM	10-2
RAM policy configuration	10-3
Current configuration	10-3
Change RAM policy	10-3
Create blackout	10-3
End blackout	10-3

11 Working with the Backup and Restore Page

Viewing the backup and restore page	11-1
Analyzing information on the TimesTen backup and restore page	11-1
Backup schedule	11-2
Create a backup schedule	11-2
Incremental	11-3
Full	11-5
Activate a backup schedule	11-6
Deactivate a backup schedule	11-7
Request an immediate backup	11-8
Delete a backup schedule	11-10
Backup history and restore database	11-11
Restore the TimesTen database with an available backup	11-11
Delete a TimesTen database backup file	11-12
Restore history	11-14
Review a restore history entry	11-14
Delete a restore history entry	11-14

12 Working with the Cache Synchronization Metrics Page

Viewing the cache synchronization metrics page	12-1
Analyzing the cache synchronization metrics page	12-1
Cache AWT	12-2
Cache AWT	12-2
AWT transactions propagated to the Oracle database	12-3
AWT transactions committed on Oracle database	12-3
AWT batch performance	12-4
AWT volume (MB/sec)	12-4
Cache parallel AWT	12-4
Performance	12-5
AWT lag	12-5

AWT bytes sent	12-6
AWT batch performance	12-6
AWT transactions	12-7
Tracks	12-7
Parallel AWT tracks	12-7
Transactions processed on Oracle database	12-8
Cache autorefresh	12-8
Cache autorefresh	12-8
Readonly cache	12-9
Updates pending refresh	12-9

13 Working with the Replication Monitor

Viewing the replication monitor	13-1
Analyzing information on the TimesTen replication monitor	13-1
Summary	13-2
Status	13-2
State	13-2
Replication peers	13-3
Replication log holds	13-3
Transmitter thread status	13-3
Replication transmitters	13-4
Transactions sent in the last hour	13-4
Receiver thread status	13-4
Replication receivers	13-5
Transactions received in the last hour	13-5
Tracks	13-6

14 Viewing Metrics

Navigating to the TimesTen database metrics page	14-1
Navigating to the TimesTen instance metrics page	14-2
Viewing TimesTen database metrics	14-2
Checkpoint history	14-3
Checkpoint and transaction log file system usage	14-4
Database information	14-5
Instance information	14-8
Parallel AWT Rates	14-9
Parallel AWT Tracks	14-9
Performance data	14-10
Performance rates	14-20
Readonly cache	14-23
Replication peers	14-24
Replication status	14-24
Replication subscribers	14-24
Replication tracks	14-25
Replication state	14-25
Response	14-26

SQL command cache	14-26
SQL execution time histogram	14-26
Transaction log holds	14-27
Viewing TimesTen instance metrics	
Hosted databases	14-27
Response	14-28
-	

15 Viewing Target Topology

Viewing the topology page	15-1
Changing the view of the topology page	15-1
Adding monitoring metrics	15-2

16 Viewing Reports

Viewing reports	16-1
Types of reports	16-1

Index

Preface

The Oracle Enterprise Manager System Monitoring Plug-in for Oracle TimesTen In-Memory Database extends Oracle Enterprise Manager Cloud Control to add support for monitoring TimesTen databases.

Audience

This document is intended for TimesTen system administrators and users of Enterprise Manager. System administrators can use the Enterprise Manager Plug-in for TimesTen to monitor and configure a TimesTen database.

Related documents

TimesTen documentation is available on the product distribution media and on the Oracle Technology Network (OTN):

http://www.oracle.com/technetwork/database/database-technologies/timesten/documentation/index.html

Oracle Enterprise Manager documentation is also available on the Oracle Technology network. This may be especially useful for Oracle Enterprise Manager features that TimesTen supports but does not attempt to fully document.

http://www.oracle.com/pls/em121/homepage

Conventions

TimesTen supports multiple platforms. The term Windows refers to all supported Windows platforms and the term UNIX applies to all supported UNIX platforms and also to Linux. Refer to the "Platforms" section in *Oracle TimesTen In-Memory Database Release Notes* for specific platform versions supported by TimesTen.

Note: In TimesTen documentation, the term "TimesTen plug-in" refers to the Oracle Enterprise Manager System Monitoring Plug-in for Oracle TimesTen In-Memory Database.

This document uses the following text conventions:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.

Convention	Meaning
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.
italic monospace	Italic monospace type indicates a variable in a code example that you must replace. For example:
	Driver= <i>install_dir</i> /lib/libtten.sl
	Replace <i>install_dir</i> with the path of your TimesTen installation directory.
[]	Square brackets indicate that an item in a command line is optional.
{}	Curly braces indicated that you must choose one of the items separated by a vertical bar () in a command line.
1	A vertical bar (or pipe) separates alternative arguments.
	An ellipsis () after an argument indicates that you may use more than one argument on a single command line.
%	The percent sign indicates the UNIX shell prompt.
#	The number (or pound) sign indicates the UNIX root prompt.

TimesTen documentation uses these variables to identify path, file and user names:

Convention	Meaning
install_dir	The path that represents the directory where the current release of TimesTen is installed.
TTinstance	The instance name for your specific installation of TimesTen. Each installation of TimesTen must be identified at install time with a unique alphanumeric instance name. This name appears in the install path.
bits or bb	Two digits, either 32 or 64, that represent either the 32-bit or 64-bit operating system.
DSN	The data source name.

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http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

What's New

This section summarizes the new features and functionality of the Enterprise Manager Plug-in for Oracle TimesTen In-Memory Database Release 12.1.0.3.0 that are documented in this guide, providing links into the guide for more information.

New features in release 12.1.0.3.0

New features in release 12.1.0.3.0

- You can monitor TimesTen instances. For more information, see "Working with the TimesTen Instance Home Page" on page 4-1.
- You can start and stop the TimesTen daemon and TimesTen server services of a TimesTen instance. For more information, see "Working with the Instance Control Menu" on page 9-1.
- You can start and stop the TimesTen replication and TimesTen cache agents. Also, you can load and unload the TimesTen database from memory and change the RAM policy of the TimesTen database. For more information, see "Working with the Database Control Menu" on page 10-1.
- You can backup and restore a TimesTen database. For more information, see "Working with the Backup and Restore Page" on page 11-1.
- You can view a visual layout of the relationships between Enterprise Manager targets and performance information about your targets. For more information, see "Viewing Target Topology" on page 15-1.
- You can create groups, roles, and users to manage access control to TimesTen targets that are monitored by Enterprise Manager. For more information, see "Working with Access Control" on page 3-1.
- Internationalization is now supported by translating text and UI elements into supported languages.
- Online help is now available for topics related to TimesTen targets. The online help is supported in English and Japanese. All other browser languages default to English.
- You can add targets by using the new automatic discovery feature. For more information, see "Configure a TimesTen target" on page 1-16.

1

Installing the Enterprise Manager Plug-in for TimesTen

The Enterprise Manager Plug-in for Oracle TimesTen In-Memory Database extends Oracle Enterprise Manager Cloud Control to add support for monitoring TimesTen databases.

This chapter focuses on the installation of the TimesTen plug-in.

Topics include:

- Installation prerequisites
- Installing the Enterprise Manager Plug-in for TimesTen
- Verifying and validating the plug-in
- Setting preferred credentials for a target
- Changing the monitoring configuration of a TimesTen database target
- Upgrading the Enterprise Manager Plug-in for TimesTen
- Uninstalling the Enterprise Manager Plug-in for TimesTen

Note: The instructions and screenshots of this user's guide are based on Oracle Enterprise Manager Cloud Control 12*c* Release 4.

Installation prerequisites

Before installing the Enterprise Manager Plug-in for TimesTen:

- Install Oracle Enterprise Manager Cloud Control 12c Release 4 (or higher) for OMS, Enterprise Manager Repository, and Agent. Ensure that the agent can successfully communicate with your Oracle Enterprise Manager Server and can upload data.
- Install Oracle TimesTen In-Memory Database Release 11.2.2.6.0 (or later).

Note: The Oracle Enterprise Manager Cloud Control Agent and the TimesTen database must reside on the same system.

When you configure your TimesTen instance target, you need to know:

The name of your TimesTen instance

When you configure your TimesTen database target, you need to know:

- The name of your TimesTen instance
- DSN

The DSN must be a system DSN that is described in either your sys.odbc.ini file or the ODBC Data Source Administrator on Microsoft Windows.

- The TimesTen database user name and password
 - The user name and password are required when you configure the TimesTen target.
 - The user you specify when you configure the TimesTen target must have ADMIN privileges. The user cannot be the instance administrator.
- If your TimesTen database uses TimesTen Cache features, you need to know the cache admin/cache manager user name, the Oracle database cache admin password, and the TimesTen database cache manager password.
 - The cache admin/cache manager user name needs to exist on the TimesTen database and the Oracle database.

Note: Be sure the TimesTen database specified by the instance and DSN is loaded into memory.

For information on your TimesTen instance, run the ttStatus or ttVersion utility. For more information, see "ttStatus" or "ttVersion" in the *Oracle TimesTen In-Memory Database Reference*.

Additional requirements

Additional requirements or considerations include:

- Use direct linked connections to define your target DSN. Client/Server connections are not supported for your target DSN.
- The Enterprise Manager Plug-in for TimesTen generates temporary files. Each temporary file could require between 10 KB to 30 KB of free space on the Oracle Enterprise Manager Agent file system. If the Oracle Enterprise Manager Agent file system is full, the Oracle Enterprise Manager Agent can no longer monitor the TimesTen database. For information about the system requirements for the Oracle Enterprise Manager Agent, see "CPU, RAM, and Hard Disk Space Requirements for Management Agent" in the Oracle Enterprise Manager Cloud Control Basic Installation Guide.
- The operating system user who installs the Oracle Enterprise Manager Agent must belong to the TimesTen users group of the installation being monitored. Also, ensure that the user has read access to /etc/TimesTen/instance_info. For more information about the TimesTen users group, see "Create the TimesTen users group" in the *Oracle TimesTen In-Memory Database Installation Guide*.
- For optimal performance, ensure that TimesTen is on a different system than the Oracle Management Service (OMS) and the Enterprise Manager Repository.
- Ensure that the My Oracle Support credentials are set up using the SYSMAN user. This is required to enable updates (plug-ins) to be downloaded from the My Oracle Support site. For more information, see "Saving Preferred Credentials to Access My Oracle Support" in the Oracle Enterprise Manager Cloud Control Security Guide.

 Ensure that the Software Library (also known as the local store) is configured. Updates are downloaded to this local store before being deployed into Oracle Enterprise Manager Cloud Control. For more information, see "Configuring an OMS Shared Filesystem Location" in the Oracle Enterprise Manager Cloud Control Administrator's Guide.

Installing the Enterprise Manager Plug-in for TimesTen

To install the TimesTen plug-in for TimesTen, you must:

- Download the plug-in
- Deploy the plug-in on Oracle Management Service
- Deploy the plug-in on the Management Agent
- Configure a TimesTen target

Download the plug-in

To download the plug-in, ensure that you are on the Oracle Enterprise Manager Cloud Control home page and are logged in as user SYSMAN.

1. From the Setup menu, select Extensibility, then select Self Update.

Figure 1–1 Select Self Update



The Self Update page displays.

2. Click Check Updates.

Figure 1–2 Click Check Updates

Oracle periodi	cally provides	new functionality	and updates fo	or existing	features in Ente	erprise Ma
⊿ Status						
Most R		Mode Online Time 🖋 Jun 2	7, 2014 2:03:0	08 PM PDT		I
Actions 👻	🔁 Open	🐠 Check Updat	es 📐 🗟	🙆 Agent	Software	

The Confirmation dialog displays. You should see the informational message: "A job has been submitted successfully to check for new updates from Oracle".

3. Click OK.

Figure 1–3 Checking for updates

Confirmation	×
${} {\ensuremath{\mathscr{O}}}$ A job has been submitted successfully to check for new updates fr	om Oracle
Job Details	
OK	

The Self Update page displays with a Most Recent Refresh Time status indicating the status of the updates.

- If you see a green check mark next to the Most Recent Refresh Time status, then Enterprise Manager has finished checking for updates. Locate the Plug-in folder.
- If you see a status of Submitted or In Progress... for the Most Recent Refresh Time status, then Enterprise Manager is still checking for updates. Click the refresh button located in the top right of the Oracle Enterprise Manager Cloud Control page to refresh the status of the Most Recent Refresh Time. After you see a green check mark next to the Most Recent Refresh Time status, locate the Plug-in folder.
- 4. Click the name **Plug-in**.

Figure 1–4	Plug-in fe	older
------------	------------	-------

) Self Updat	e			
Oracle periodi	cally provides new functionality a	and updates	for existing	g features
⊿ Status				
Most Re	Connection Mode Online ecent Refresh Time 🖋 Jul 9,	2014 3:15:20	6 PM PDT	
Actions 👻	📄 Open 🛛 🙀 Check Update	s 🛃	🙆 Ager	nt Softwa
Туре		Available U	Jpdates	Down
🛅 Diagnost	ic Checks		0	
🛅 EM Deplo	yment Prerequisite Resources		0	
Enterpris	e Configuration Search		0	
🛅 Exadata	Configuration Template		0	
Extensibi	ility Development Kit		0	
Managen	nent Connector		19	
Metric Ex	tensions		0	
Middlewa	are Profiles and Gold Images		1	
Monitorin			0	
-	atabase Provisioning Profiles an		0	
Oracle Vi	rtual Product Mapping		0	
	rtual Templates and Oracle Virti		36	
Plug-ip			53	
Provision	ing Bundle		0	
🛄 Test Dat	a Management templates		7	

The Plug-in Updates page displays. In the Plug-in Name column, locate Oracle TimesTen In-Memory Database. Confirm the Status column is equal to Available.

5. In the Plug-in Name column, click **Oracle TimesTen In-Memory Database**.

Actions 👻	🖕 Download 🛛 👰 App	oly 🛛 Plug-in 🛛 😽 Search	Descrip	tion		+
Status Available	OS Platform Generic Platform	Plug-in Name Oracle Communications	Revisio	Version 12.1.0.1.0	Vendor ORACLE	
Available	Generic Platform	Oracle Axiom	0	12.1.0.1.0	ORACLE	
Available	Generic Platform	Oracle PeopleSoft	0	12.1.0.2.0	ORACLE	
Available	Generic Platform	Enterprise Manager for PeopleSoft	0	12.1.0.1.0	ORACLE	
🗭 Available	Generic Platform	Oracle Jdedwards EnterpriseOne	0	12.1.0.2.0	ORACLE	
🗭 Available	Generic Platform	Oracle Jdedwards EnterpriseOne	0	12.1.0.1.0	ORACLE	
🗭 Available	Generic Platform	Oracle E-Business Suite	0	12.1.0.3.0	ORACLE	
🗭 Available	Generic Platform	Oracle E-Business Suite	0	12.1.0.2.0	ORACLE	
🖗 Available	Generic Platform	Oracle E-Business Suite	0	12.1.0.1.0	ORACLE	
💐 Applied	Generic Platform	Oracle Beacon	0	12.1.0.4.0	ORACLE	
💐 Applied	Generic Platform	Oracle CSA	0	12.1.0.4.0	ORACLE	
💐 Applied	Generic Platform	Management Services and Repo	0	12.1.0.4.0	ORACLE	
💐 Applied	Generic Platform	Oracle Home	0	12.1.0.4.0	ORACLE	
🗭 Available	Generic Platform	Oracle TimesTen In-Memory	0	12.1.0.3.0	ORACLE	

Figure 1–5 Plug-in Updates

Locate the Download button located under Plug-in Updates at the top of the page.

6. Click Download.

Figure 1–6 Download plug-in

Actions 👻	🖕 Download 🖉 🙉 A	opply 🙆 Plug-in 🛛 🔯 Search	Desc	ription		→
Status	OS Platform	Plug-in Name		sio Version	Vendor	
🐙 Available	Generic Platform	Oracle Communications	0	12.1.0.1.0	ORACLE	
🔎 Available	Generic Platform	Oracle Axiom	0	12.1.0.1.0	ORACLE	
🗭 Available	Generic Platform	Oracle PeopleSoft	0	12.1.0.2.0	ORACLE	
🔎 Available	Generic Platform	Enterprise Manager for PeopleSoft	0	12.1.0.1.0	ORACLE	
🔎 Available	Generic Platform	Oracle Jdedwards EnterpriseOne	0	12.1.0.2.0	ORACLE	
🖗 Available	Generic Platform	Oracle Jdedwards EnterpriseOne	0	12.1.0.1.0	ORACLE	
🖗 Available	Generic Platform	Oracle E-Business Suite	0	12.1.0.3.0	ORACLE	
🔎 Available	Generic Platform	Oracle E-Business Suite	0	12.1.0.2.0	ORACLE	
🔎 Available	Generic Platform	Oracle E-Business Suite	0	12.1.0.1.0	ORACLE	
🕲 Applied	Generic Platform	Oracle Beacon	0	12.1.0.4.0	ORACLE	
🕲 Applied	Generic Platform	Oracle CSA	0	12.1.0.4.0	ORACLE	
🙉 Applied	Generic Platform	Management Services and Repo	0	12.1.0.4.0	ORACLE	
🙉 Applied	Generic Platform	Oracle Home	0	12.1.0.4.0	ORACLE	
🔎 Available	Generic Platform	Oracle TimesTen In-Memory Dat	0	12.1.0.3.0	ORACLE	

The Schedule Download dialog displays indicating that you can download the plug-in either immediately or later. When you choose **Select**, Enterprise Manager downloads the plug-in immediately.

7. Click Select.

Figure 1–7 Schedule Download dialog

i) Schedule Download	×
Start Immediately Later Start Notify Once downloaded	岱 (UTC-08:00) Los Angeles - Pacific Time (PT)
Select	

A confirmation dialog displays indicating that the update (plug-in) is downloading.

8. Click OK.

Figure 1–8 Click OK

Gamma Confirmation	×
${old V}$ A job has been submitted successfully to download the updat	e from Oracle
Job Details	
OK	

You have successfully downloaded the plug-in. You can verify the plug-in has been downloaded by reviewing the Plug-in Updates page. You should see the Oracle TimesTen In-Memory Database plug-in with a status of Downloaded.

You are now ready to deploy the plug-in on the Oracle Management Service.

Deploy the plug-in on Oracle Management Service

You must deploy the plug-in on both the Oracle Management Service (OMS) and one or more Management Agents. After you successfully deploy the plug-in, both OMS and the agent know the plug-in exists. You then configure your TimesTen database as one of the targets for the agent and the agent begins the process of monitoring your target.

You must deploy the plug-in on OMS before deploying the plug-in on one or more Management Agents.

Note: If there is a failure when deploying the plug-in, the Management Repository could be in an inconsistent state. It is recommended that you back up the Management Repository before deploying the plug-in.

To deploy the plug-in on OMS, ensure that you are on the Oracle Enterprise Manager Cloud Control home page and are logged in as user SYSMAN.

1. From the Setup menu, select Extensibility, then select Plug-ins.



Figure 1–9 Select Extensibility, then Plug-ins

The Plug-ins page displays and you see the plug-ins that have been downloaded and can be deployed. Locate the Databases folder in the Name column.

2. Expand the Databases folder in the Name column and click **Oracle TimesTen In-Memory Database**.

Actions 👻 View 👻 📴 Deploy On 👻	📴 Undeploy From 👻	🖉 Check Updates 🛛 🖺 🛛	Deployment Activities
		Version	
Name	Latest Available	Latest Downloaded	On Management Se
🖏 Oracle Utilities	12.1.0.3.0 (1)		
Cloud 1			
🔺 🚞 Databases 🕕			
🖏 IBM DB2 Database	12.1.0.3.0 🕕		
🖏 Microsoft SQLServer Database	12.1.0.5.0 🕕		
🖏 Oracle Database	12.1.0.6.0	12.1.0.6.0	12.1.0.6.0
🖏 Oracle TimesTen In-Memory D	12.1.0.3.0	12.1.0.3.0	12.1.0.3.0
🖏 Sybase ASE Database 😡	12.1.0.3.0 🕕		
Engineered Systems (1)			
👂 🚞 Middleware 🕕			
Servers. Storage and Network (1)			

Figure 1–10 Select TimesTen In-Memory Database plug-in

You are now ready to deploy the plug-in on OMS. Locate the Deploy On tab at the top of the page.

3. From the **Deploy On** menu, select **Management Servers...**.

Figure 1–11 Deploy on OMS

Dlug inc

Plug-ins			
This page lists the plug-in	s available, download	ded, and dep	ployed to th
Actions - View -	💁 Deploy On 👻	🐴 Undeplo	y From 👻
	Management Se	ervers	
Name	Management Ag	gent	able
Cloud (1)			
🔺 🚞 Databases 🚺			
🖏 IBM DB2 Da	atabase	12.1.0.2.0	i
🖏 Microsoft S	QLServer Database	12.1.0.4.0	i
🖏 Oracle Data	abase	12.1.0.6.0	
🖏 Oracle Time	esTen In-Memory Dat	12.1.0.3.0	
🖏 Sybase AS	E Database	12.1.0.2.0	i
. 🗪 🔹			

The Deploy Plug-in on Management Servers: Plug-ins page displays. The plug-in **Oracle TimesTen In-Memory Database** is displayed in the Name column and the Version is auto-filled. Locate the Next button in the top right of the page.

4. Click Next.

Figure 1–12 Click Next

lug-ins Prerequisite Checks Repo	sitory Review	Confirmatio	n		
Deploy Plug-ins on Manag	jement Serv	ers: Plug	-ins	Back	tep 1 of 5 Next Cance
🕂 Add 💥 Remove					13
		Versio	on		Use Last Successful
Name	Latest Available	Currently Deployed	To Deploy	Downtime Required	Prerequisite
🖏 Oracle TimesTen In-Memory Da	tab 12.1.0.3.0	None	12.1.0.3.0 ▼	×	

The Deploy Plug-ins on Management Servers: Prerequisite Checks page displays. The prerequisite checks can take several minutes. In the Prerequisite Status region, you should see a check to the left of the Prerequisite Checks text. To the right of this text, you should see the text "Successfully Completed". Ensure that there are green checks in the Status column of each row in the Deployment Steps: Oracle TimesTen In-Memory Database table. Locate the Next button in the top right of the page.

5. Click Next.

Figure 1–13 Click Continue

Prerequisite Statu	16						
Prerequisite Checks		ully Completed			Auto Refresh	5 Seconds	١
Name	Version	Status (%)	Start Time		End Time		
Oracle TimesTe	12.1.0.3.0		100 July 2, 2014 10:54	44 AM PDT	July 2, 2014 10:5	5:12 AM PDT	
Deployment Step	s: Oracle Tin	esTen In-Memory Database					•
	s: Oracle Tin	nesTen In-Memory Database	м	anagement Se		1	•
Prerequisite Name			м	anagement Se 1690_Manager & Log Fil	nent_Service		•
Prerequisite Name Submit job for running pr			м	690_Manager	nent_Service e		•
Prerequisite Name Submit job for running pr initialize			м	690_Manager	nent_Service e e		•
Prerequisite Name Submit job for running pr initialize install software			м	690_Manager	nent_Service e e		•
Prerequisite Name Submit job for running pr initialize install software /alidate plug-in home	erequisites ch		м	690_Manager ✓ Log Fil ✓ Log Fil ✓ Log Fil	nent_Service e e e		•
Prerequisite Name Submit job for running pr Initialize Install software Validate plug-in home Perform custom preconfij	erequisites che guration		м	690_Manager Cog Fil Cog Fil Cog Fil Cog Fil Cog Fil	nent_Service e e e e		•
Deployment Step Prerequisite Name Submit job for running pr Initialize Install software Validate plug-in home Perform custom preconfig Check mandatory patche Generate metadata SQL	erequisites che guration		м	690_Manager Cog Fil Cog Fil Cog Fil Cog Fil Cog Fil Cog Fil	nent_Service e e e e e e e e e e e e e e e e e e		•

The Deploy Plug-ins on Management Servers: Repository page displays. Consider making a backup of the OMS repository before deploying the plug-in. For more information on backing up the OMS repository, see "Backing Up the OMS" in the *Oracle Enterprise Manager Cloud Control Advanced Installation and Configuration Guide*. Locate the **Have you backed up the repository and configuration of first management server?** check box.

6. Select the Have you backed up the repository and configuration of first management server? check box.

Figure 1–14 Select repository backup confirmation



You are now ready to specify repository SYS credentials. Locate the circle to the left of the New credential type.

7. Click in the circle to the left of the text New.

Figure 1–15 Select the new credential type option

Plug-ins Prerequisite Checks Repository Review Confirmation	
Deploy Plug-ins on Management Servers: Repository	Back Step 3 of 5 Next Cancel
🛕 Warning	
Repository database is running in NOARCHIVELOG mode. It is strongly recommended that ARCH deployment. Refer to Orade Database documentation.	IVELOG mode be enabled before trying plug-in
Orade recommends that you take a backup of the repository, and export the first management serv exportconfig oms". Otherwise, ensure that appropriate recovery plan is in place prior to deploying th	
I have you backed up the repository and configuration of first management server?	
✓ SYS Credential	
Specify repository SYS credentials	
Credential Credential Named New There are no named credentials defined.	

The Deploy Plug-Ins on Management Servers: Repository page refreshes. You are now required to enter the repository SYS credentials for your Enterprise Manager repository. The first property is the Username.

- **8.** In the ***Username** text field, type the user who has access to the Enterprise Manager repository.
- **9.** In the ***Password** text field, type the password for the user who has access to the Enterprise Manager repository.
- 10. In the *Confirm Password text field, re-type the password.
- 11. From the Role drop-down list, select SYSDBA.
- **12.** Click in the check box to the left of the text **Save As**.
- **13.** In the **Save As** text field, type the name you want to use for the preferred credentials. The credentials are saved with this name.

Locate the Next button at the top right of the page.

14. Click Next.

Figure 1–16 Review of the deploy on OMS

Plug-ins Prerequisite Checks	Repository	Review Confirmation			
Deploy Plug-ins on M	anagement	Servers: Repository		Back Step 3 of 5	Next Cancel
🛕 Warning					18
Repository database is runni deployment. Refer to Oracle			commended that ARCHIVE	ELOG mode be enabled before t	trying plug-in
Oracle recommends that you take exportconfig oms". Otherwise, er					nd "emctl
 Have you backed up the r 	epository and co	nfiguration of first managem	ent server?		
SYS Credential					
Specify repository SYS credential	s				
Credential	🔵 Named 💿	New			
* Username	SYS				
* Password	•••••				
* Confirm Password	•••••				
Role	SYSDBA V				
	Save As	SYS_CREDENTIALS			

The Deploy Plug-ins on Management Servers: Review page displays. In the Management Servers table, verify that the name of the management server is correct. Verify the status is up. In the Plug-ins table, verify that the name of the plug-in is Oracle TimesTen In-Memory Database. Locate the Deploy button at the top right of the page.

15. Click **Deploy**.

Figure 1–17 Confirmation of the deployment to OMS

Deploy Plug-ins on Manage	ement Servers: R	eview	Back	Step 4 of 5 De	eploy Cance
Warning					2
any targets.					
Name testhost:4890_Management_Service					Statu:
Management Servers Name testhost:4890_Management_Service Plug-ins		Vertice			
Name testhost:4890_Management_Service	Latest Available	Version Currently Deployed	To Deploy	Downti	

Note: The Oracle Enterprise Manager Cloud Control server restarts during the deployment process.

The Deploy Plug-ins on Management Servers: Confirmation page displays with a message indicating the deployment of the plug-in is in progress. The deployment can take several minutes. You can monitor the deployment status by clicking Show Status or going to the Deployment Activities page.

16. Click Show Status.

Plug-ins Prerequisite Checks Repository Review Confirmation	
Deploy Plug-ins on Management Servers: Confirmation	Back Step 5 of 5 Next OK Show Status
Confirmation	Ч
The deployment of plug-ins is in progress.	
You can monitor the progress using the following command:	
emctl status oms -details	

Figure 1–18 Click show status

The Plug-ins Deployment Activities page displays showing the status of recent deployment activities and a detailed status of the TimesTen deployment steps in table format. The second table on this page, Deployment Steps: Oracle TimesTen In-Memory Database, shows the deployment steps for the TimesTen plug-in. The last step located in the last row of this table is named "Start management server". Once this step is completed, ensure that there are green checks in the Status column of each row in the Deployment Steps table. Such checks indicate all steps in the deployment process are completed and are successful. If auto refresh is set to off, you may want to set auto refresh to 15 seconds, so you can see the steps as they are completed. You may need to wait a few minutes before changing the auto refresh setting because the Oracle Enterprise Manager Cloud Control server restarts during this deployment.

Figure 1–19 Deployment to OMS successful

Name	Version	Status	Content Type	e Destination	n	
Oracle TimesTen In-Memory Database	12.1.0.3.0	\$	Plug-in	testhost:4	890_Managemer	nt_Service
4						+
Deployment Steps: Oracle	TimesTen In-	Memory [)atabase			
Step		Status	Start Time	End Time	Job Step Name	Log File
Submit job for deployment		\checkmark	July 2, 2014	July 2, 201	N/A	emoms.log
Initialize		a	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Install software		v	July 2, 2014	July 2, 201	DeployPlugin	install_2014-07
/alidate plug-in home		v	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Perform custom preconfiguration	1	a	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Check mandatory patches		V	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Generate metadata SQL		a	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Preconfigure Management Repo	sitory	v	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Stop management server		\checkmark	July 2, 2014	July 2, 201	DeployPlugin	emctl.log
Configure Management Reposito	ry	a	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Configure middle tier		\checkmark	July 2, 2014	July 2, 201	N/A	configplugin_all
OPSS jazn policy migration		\checkmark	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Register metadata		V	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Perform custom postconfiguratio	n	V	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Jpdate inventory		V	July 2, 2014	July 2, 201	DeployPlugin	configplugin_all
Start management server		1	July 2, 2014	July 2, 201	DeployPlugin	emctl.log

The plug-in is deployed on OMS.

You are now ready to deploy the plug-in on the Management Agent.

Deploy the plug-in on the Management Agent

You must deploy the plug-in on OMS before deploying the plug-in on one or more Management Agents.

Note: The TimesTen database, the plug-in, and the agent monitoring the database must be on the same system.

To deploy the plug-in on the Management Agent, ensure that you are on the Oracle Enterprise Manager Cloud Control home page.

1. From the Setup menu, select Extensibility, then select Plug-ins.

Figure 1–20 Select Extensibility, then Plug-ins

	Setup 👻 🔛 SYSMAN 🗸	0
Search Target Name	Add Target	++
Self Update	Extensibility	•
Plug-ins	Proxy Settings	•
Management Connectors	Security	•
Data Exchange	Incidents	•
Development Kit	Notifications	•
	Provisioning and Patching	•
Complete Cloud Lifecyc	My Oracle Support	•
Integrated Application	Middleware Management	•
Business-Driven Applic	Manage Cloud Control	•
Buoineoo Briven Applie	Command Line Interface	1
	Management Packs	•

The Plug-ins page displays and you see the plug-ins that have been downloaded and can be deployed. Locate the Databases folder in the Name column.

2. Expand the Databases folder in the Name column and click **Oracle TimesTen In-Memory Database**.

Figure 1–21 Select Oracle TimesTen In-Memory Database plug-in

-		

ctions 🔻 View 👻 📴 Deploy	On 👻 🛐 Undeploy From 🤻	🖌 🚱 Check Updates 🔤 🛙	Deployment Activities
Nama		Version	
Name	Latest Available	Latest Downloaded	On Management Se
🖏 Oracle Utilities	12.1.0.3.0 🕕		
Cloud (1)			
🔺 🚞 Databases 🕕			
🖏 IBM DB2 Database	12.1.0.3.0 🕕		
🖏 Microsoft SQLServer Dat	abase 12.1.0.5.0 🕕		
🖏 Oracle Database	12.1.0.6.0	12.1.0.6.0	12.1.0.6.0
🖏 Oracle TimesTen In-Men	nory D; 12.1.0.3.0	12.1.0.3.0	12.1.0.3.0
🍓 Sybase ASE Database	12.1.0.3.0 🕕		
Engineered Systems (1)			
🕨 🚞 Middleware 🕕			

You are now ready to deploy the plug-in on the Agent. Locate the Deploy On tab at the top of the page.

3. From the Deploy On menu, select Management Agent....

Actions - View -	🖌 🔤 Deploy On 👻	📴 Undeploy	/ From 👻 🙆	Check Updates	Deployment Activities
	Management S	ervers		Version	
Name	Management /	Agent 📐 la	able	Latest Download	led On Management Serve
🕨 🛄 Cloud 🕕		~			
🔺 🚞 Databases	a 🕕				
🖏 IBM DB	2 Database	12.1.0.2.0	i		
🖏 Microso	oft SQLServer Database	12.1.0.4.0	i		
🖏 Oracle	Database	12.1.0.6.0		12.1.0.6.0	12.1.0.6.0
🖏 Oracle	TimesTen In-Memory Da	12.1.0.3.0		12.1.0.3.0	12.1.0.3.0
🖏 Sybase	ASE Database	12.1.0.2.0	i		
Engineeree	d Systems 🕕				
Middleware	e 🛈				
	torage and Network (

Figure 1–22 Deploy on Management Agent

The Deploy Plug-in on Management Agent General page displays. The plug-in **Oracle TimesTen In-Memory Database** is displayed in the Name column and the Version is auto-filled. The supported target versions column indicates the minimum version of TimesTen that the agent supports. Locate the Continue button below the Target Types table.

4. Click Continue.

Figure 1–23 Click Continue

	Name (Oracle TimesTen In-M	emory Database		
	Version	12.1.0.3.0	•		
arget Types					
Name		Supported Target	Versions		
TimesTen Database		11.2.2.6.0			
TimesTen Instance		11.2.2.6.0			

You can now select the agent where you want to deploy the plug-in. The agent status must be up as indicated by the green up arrow in the Status column of the Management Agents table.

5. In the Management Agents table, locate the row that contains the correct agent as identified by management agent. Click **in this row** and then click **Continue**.

ct Management Agents				
Name Oracle TimesTen In-M	emory Database			
Version 12.1.0.3.0				
agement Agents				
Management Agent	Agent Version	Operating System	Deployed Version	Statu
testhost:3872	12.1.0.4.0	Linux x86-64	None	<u></u>
			Back Cont	tinue C
			Back Con	tinue

Figure 1–24 Select agent and click Continue

The Deploy Plug-in on Management Agent Prerequisite Checks page displays. In the Management Agent table, verify the Status column has a green check and the Error Message column contains the text "No Error."

6. Click Next.

Figure 1–25 Prerequisite checks

rerequisite Checks	de TimesTen In-Memory Dat	ahase		
Version 12.1		abase		
lanagement Agent	Operating System	Status	Error Message	
esthost:3872	Linux x86-64	~	No Error	
- Dependent Agents			Back	Next _N Cancel

The Deploy Plug-in on Management Agent Review page displays. In the name column, verify the plug-in name is **Oracle TimesTen In-Memory Database** and the version is correct. Ensure that you see the text "Management Agents that passed the prerequisite checks" and ensure that the Management Agent is correct.

You are ready to deploy the plug-in.

7. Click Deploy.

eploy Plug-in on Management /	Agent			
Review				
Name Oracl	e TimesTen In-Memory Database			
Version 12.1.	0.3.0			
Management Agents that pass	ed the prerequisite checks.			
Management Agent	Operating System	Deployed Plug-in Version	Status	Restart Required
testhost:3872	Linux x86-64	None		No

Figure 1–26 Click Deploy

The Deploy Plug-in on Management Agent Confirmation page displays with a message indicating the deployment of the plug-in has started on selected agents. The deployment can take several minutes. You may monitor the deployment status by clicking Show Status or going to the Deployment Activities page.

8. Click Show Status.

Figure 1–27 Confirmation dialog



The Plug-ins Deployment Activities page displays showing the status of recent deployment activities and a detailed status of the TimesTen deployment steps in table format. The second table on this page, Deployment Steps: Oracle TimesTen

In-Memory Database, shows the deployment steps for the TimesTen plug-in. The last step located in the last row of this table is named "Update inventory". Once this step is completed, ensure that there are green checks in the Status column of each row in the Deployment Steps table. Such checks indicate all steps in the deployment process are completed and are successful. If auto refresh is set to off, you may want to set auto refresh to 15 seconds, so you can see the steps as they are completed.

Figure 1–28 Deployment of agent successful

Name	Version	Sta	tus Content Ty	/pe Dest	stination		
Oracle TimesTen In-Memory Database	12.1.0.3.0	~	Discovery	test	nost:3872		
Oracle TimesTen In-Memory Database	12.1.0.3.0	~	Plug-in	test	nost:3872		
4						•	
Deployment Steps: Oracle T	imesTen Ir	-Memory	y Database				
Step		Status	Start Time	End Time	Job Step Name	Log File	
Submit job for deployment		\checkmark	July 2, 2014	July 2, 201	N/A		
Initialize		~	July 2, 2014	July 2, 201	fixAgent	emoms.log	
Validate Environment		\checkmark	July 2, 2014	July 2, 201	validateEnv	emoms.log	
Validate Environment Install software		4			validateEnv payloadTran		
Install software		•	July 2, 2014	July 2, 201		unzipplugin_ora	
		٠ ا	July 2, 2014 July 2, 2014	July 2, 201 July 2, 201	payloadTran		

The plug-in is deployed on the Management Agent and the automatic discovery scripts of the plug-in are deployed on the agent. You can now configure automatic discovery for the TimesTen plug-in, see "Initial automatic discovery configuration" on page 1-17. Repeat steps 1-8 to deploy the plug-in on additional Management Agents.

You are now ready to configure a TimesTen target.

Configure a TimesTen target

You must configure a TimesTen target that is monitored by Enterprise Manager Cloud Control. You can configure a TimesTen target for TimesTen instances and each unique TimesTen database with either automatic discovery or manual configuration. When you configure a TimesTen database target, use a Data Manager DSN. Client/server DSNs are not supported. Manual configuration is recommended for advanced users.

Note: You do not need to configure a TimesTen instance target to configure a TimesTen database target.

Note: Ensure that you are logged in as SYSMAN or a user that has add target privileges through an Enterprise Manager role. For more information, see "Defining roles" on page 3-5.

Follow these instructions before using automatic discovery:

Initial automatic discovery configuration

These are the configuration types:

Automatic discovery configuration for a TimesTen instance target

- Automatic discovery configuration for a TimesTen database target
- Manual configuration for a TimesTen instance target
- Manual configuration for a TimesTen database target

Initial automatic discovery configuration

You must configure each host for automatic discovery before adding a TimesTen instance target or database target through automatic discovery. You do not need to configure automatic discovery if you are adding targets with manual configuration.

For each host that you want to configure for automatic discovery:

1. From the Setup menu, select Add Target, then select Configure Auto Discovery.

Figure 1–29 Configure auto discovery



The Setup Discovery page displays. Locate the Target on Hosts tab in the Instruction region.

2. Click Target on Hosts.

Figure 1–30 Configure auto discovery on host

Insti	uction					
ost ar	d Oracle VM Manager 🛛 Ta	argets on Ho	Advance	d: Discovery i	Modules	
> Sea View		💥 Delete	Discover sof		ervices on hosts usin	g agent]
Nam	e	Owner	Discovered Targets	Scans	Scanning Agents	Start Time

The Setup Discovery page reloads. You can now select the host where the agent is located. The agent status must be up as indicated by the green up arrow in the Agent Host Name column of the Search table.

3. In the Search table, locate the row that contains the correct agent host. Click **in this row** and then click **Discovery Modules**.

Figure 1–31 Add host

etup Diso	covery								▶ F	Page Refreshed J
Instru	ction									
Host and Or	racle VM Manager	Targets o	n Hosts	Advanced: D	iscovery Module	es				
Searcl View ▼	h 🖄 Collection Sche	edule 🔻	👔 Diagr	nostic Details	Discover	r Now	& Discovery	Module	Detach	1
Agent H	ost Name		Collectio	n Schedule		Discov	vered Targets	Managed Targ	ets E	nabled Discovery Module
👔 👚 test	host		Every	/ 1 Day			4		23	

The Discovery Modules page for your host displays. You can now enable the Oracle TimesTen discovery module.

4. In the Discovery Modules table, locate the row that contains the Oracle TimesTen Discovery module. Click **in the check box of the Enable column of this row** and then click **OK**.

Figure 1–32 Select discovery module

configure d	iscovery modules and par	rameters o	n this host	t.	
View 👻	/ Edit Parameters				OK
Discove	ry Module		Enabled	Target Types	Discovery Parameters
Oracle O	Cluster and High Availabili	ty Service		Cluster, Oracle High Availability Service	
Oracle [Database, Listener and Au	itomatic		Database Instance, Listener, Pluggable Database	
Oracle F	Fusion Middleware		1	Oracle WebLogic Domain	Enter value of Middleware Home(s)=
Oracle H	Home Discovery			Oracle Home	
Oracle S	Secure Backup Domain			Oracle Secure Backup Domain	
Oracle T	TimesTen Discovery			TimesTen Instance, TimesTen Database	

The Setup Discovery page displays. Repeat steps 1-4 to configure additional hosts for automatic discovery.

You are now ready to discover TimesTen targets on your configured hosts.

5. In the Search table, locate the row that contains the correct agent host. Click **in this row** and then click **Discover Now**.

Figure 1–33 Discover now

etup Discovery					P	age Re	freshed Ju l	3, 2014 :	L:59:44 PM PDT 💍
> Instruction									
Host and Oracle VM Manager	Targets o	n Hosts	Advanced: Dis	covery Modules	5				
> Search									
View 👻 🔯 Collection S	chedule 🔻	🚺 Diag	nostic Details	Discover	Now 炎 Dis	covery	Modules	🛃 Det	ach
Agent Host Name		Collectio	on Schedule		Discovered Ta	argets	Managed	Targets	Enabled Discovery Modules
adc6180302.us.orad	e.com	Ever	v 1 Dav			4		23	6

The Discover Now dialog displays. Locate the Yes button.

6. Click Yes.

Figure 1–34 Run Discovery Now

Discover Now	×
Are you sure you want to run the target discovery on: testhost?	
Yes	No

The Run Discovery Now - Confirmation dialog displays. The discovery can take several minutes. You should see the informational message: "Discover Now - Completed Successfully". Locate the Close button.

7. Click Close.

Figure 1–35 Close Confirmation

Confirmation	n		 	
Discover Now -	Completed Suc	cessfully		
Hide				
				1,
				Close

The Setup Discovery page displays. Enterprise Manager has discovered all the targets on your host. Repeat steps 5-7 to discover targets on additional hosts.

You are now ready to configure TimesTen targets with automatic discovery.

Automatic discovery configuration for a TimesTen instance target

Ensure that you have followed the steps described in "Initial automatic discovery configuration" on page 1-17 before you configure a TimesTen instance target with automatic discovery. For each TimesTen instance target you want to configure with automatic discovery:

1. From the Setup menu, select Add Target, then select Auto Discovery Results.

Figure 1–36 Auto Discovery Results

	Setup 👻 🕺 SYSMAN 🗸	0
Configure Auto Discovery	Add Target	++
Auto Discovery Results	Extensibility	•
Add Targets Manually	Proxy Settings	+
Group	Security	•
Dynamic Group	Incidents	•
Administration Groups	Notifications	•
Generic System	Provisioning and Patching	•
Redundancy System	My Oracle Support	•
Generic Service	Middleware Management	•
Business-Driven Applic	Manage Cloud Control	•
Dusiness Driven Applic	Command Line Interface	
and the second	Management Packs	•

The Auto Discovery Results page displays. Locate the Target on Hosts tab in the Instruction region.

2. Click Target on Hosts.

Figure 1–37 Click target on hosts

uto Discovery Results			(Page Refreshed J	Jul 3, 2014 3:22:49 PM PDT 🕻
> Instruction					
Host and Oracle VM Manager (0) Targets on Hosts	(R) Ignored Targe	ts (0)		
> Search	```				
View 🔻 📑 Promote 🥒 Ren	name 🕺 Delete	😤 Ignore 🛛 🛃 🛙	Detach		
Target Name	Туре	IP Address	Operating System	Discovered On	Open Ports
No data to display.					

The Auto Discovery Results page reloads. In the Target Type column, locate TimesTen Instance.

3. In the Targets table, locate the row that contains the correct TimesTen instance as identified by the Target Name and Target Type column. Click **in this row** and then click **Promote**.

Note: To change the name of a target, select your TimesTen Instance target and click the **Rename** button. Once you promote a target you cannot change the target name.

Figure 1–38 Promote target

uto Discovery Results					lacksquare
Instruction					
Host and Oracle VM Manager (0) Targets of	on Hosts (9) Ignored Targ	gets (0)			
Search					
View 👻 🔗 Promot 🖉 🖉 Rename	🗙 Delete R Ignore	🚮 Detach			
Target Name	Target Type		Discovered On	Host	
testhost/tt1122/	TimesTen Instance		Jul 3, 2014	testhost	
testhost/tt1122/cachedb1_1122	TimesTen Database		Jul 3, 2014	testhost	
testhost/tt1122/repdb1_1122	TimesTen Database		Jul 3, 2014	testhost	
testhost/tt1122/repdb2 1122	TimesTen Database		Jul 3, 2014	testhost	

The Promote Discovered Target page displays. Notice the Target Name, Target Type, and Agent text fields, located below the page title, are auto-filled and cannot be edited. The TimesTen instance name field, located in the Properties region, is auto-filled and is editable.

4. Ensure that the TimesTen instance name is correct and click Promote.

	argets to be managed by Enterprise Manager. All required properties must have values in order to promote target rties and promote the targets. 'Configure Only' will save configured properties without promoting the targets.
	Promote Configure Only Cancel
Target	
Target Name	testhost/tt1122
	TimesTen Instance https://testhost:3872/emd/main/
Properties	
* TimesTen instance name	tt1122
Global Properties	

Figure 1–39 Promote discovered target

The Confirmation dialog displays. The target promotion can take several minutes. You should see the informational message: "Promote target - Completed Successfully". Locate the Close button.

5. Click Close.

Figure 1–40 Promote target completed successfully

Confirmation	
Promote Target - Completed Successfully	
Hide	
	Close

Your TimesTen instance target has been successfully added.

You can now verify and view information about your new target. For more information, see "Verifying and validating the plug-in" on page 1-32.

Automatic discovery configuration for a TimesTen database target

Ensure that you have followed the steps described in "Initial automatic discovery configuration" on page 1-17 before you configure a TimesTen database target with automatic discovery. For each TimesTen database target you want to configure with automatic discovery:

1. From the Setup menu, select Add Target, then select Auto Discovery Results.

Figure 1–41 Auto Discovery Results

	Setup 👻 🔛 SYSMAN 🗸	0
Configure Auto Discovery	Add Target	+
Auto Discovery Results	Extensibility	+
Add Targets Manually	Proxy Settings	+
Group	Security	+
Dynamic Group	Incidents	•
Administration Groups	Notifications	•
Generic System	Provisioning and Patching	•
Redundancy System	My Oracle Support	•
Generic Service	Middleware Management	•
isiness-Driven Applic	Manage Cloud Control	•
Isiness Driven Applic	Command Line Interface	
	Management Packs	•

The Auto Discovery Results page displays. Locate the Target on Hosts tab in the Instruction region.

2. Click Target on Hosts.

Figure 1–42 Click target on hosts

Auto Discovery Results			(🕑 🛛 Page Refreshed Jul 3, 2014 3:22:49 PM PDT 🖒		
> Instruction						
Host and Oracle VM Manager	(0) Targets on Hosts	(R) Ignored Targe	ets (0)			
▷ Search View ▼ Promote	ename 🛛 💥 Delete	G	Detach			
Target Name	Туре	IP Address	Operating System	Discovered On	Open Ports	
No data to display.						

The Auto Discovery Results page reloads. In the Target Type column, locate TimesTen Database.

3. In the Targets table, locate the row that contains the correct TimesTen database as identified by the Target Name and Target Type column. Click **in this row** and then click **Promote**.

Note: To change the name of a target, select your TimesTen Database target and click the **Rename** button. Once you promote a target you cannot change the target name.

Figure 1–43 Promote target

Auto Discovery Results				۲
> Instruction				
Host and Oracle VM Manager (0) Targets on	Hosts (9) Ignored Targe	ts (0)		
> Search				
View 👻 🥜 Promot 🖉 🖉 Rename 🔰	🕻 Delete 🤌 Ignore 🚽	Detach		
Target Name	Target Type		Discovered On	Host
testhost/tt1122/sampledb_1122	TimesTen Database		Jul 3, 2014	testhost
testhost/tt1122/repdb2_1122	TimesTen Database		Jul 3, 2014	testhost
testhost/tt1122/repdb1 1122	TimesTen Database		Jul 3, 2014	testhost
testhost/tt1122/cachedb1_1122	TimesTen Database		Jul 3, 2014	testhost
testhost/tt1122/	TimesTen Instance		Jul 3, 2014	testhost

The Promote Discovered Target page displays. Notice the Target Name, Target Type, Agent text, and Credential Type fields, located below the page title, are auto-filled and cannot be edited. You are now ready to enter the TimesTen monitoring credentials properties.

- **4.** In the ***TimesTen database user name** text field, type the TimesTen database user who has ADMIN privileges. Note: This user cannot be the TimesTen instance administrator.
- **5.** In the ***TimesTen password** text field, type the password for the TimesTen database user.
- 6. In the ***Confirm TimesTen password** text field, re-type the password.

Note: Steps 7-11 are only required if your database uses TimesTen cache features that you want to monitor. If you do not want to monitor TimesTen cache features, skip to step 12. For more information on TimesTen cache, see *Oracle TimesTen Application-Tier Database Cache User's Guide*.

- 7. Type the TimesTen cache manager user in the **Cache administration/cache manager user name** text field. Note: This user must exist on the TimesTen database and the Oracle database.
- **8.** Type the Oracle database cache manager user password in the **Oracle database** cache administration password text field.
- **9.** In the **Confirm Oracle database cache administration password** text field, re-type the password.
- **10.** Type the TimesTen cache manager password in the **TimesTen database cache manager password** text field.
- **11.** In the **Confirm TimesTen database cache manager password** text field, re-type the password.
- **12.** The ***Data Source Name** text field is auto-filled. Ensure that the data source name is correct.
- **13.** The ***TimesTen instance name** text field is auto-filled. Ensure that the TimesTen instance name is correct.
- 14. Click Promote.

Figure 1–44 Promote discovered target

Promote Discovered Targ	jet	
	argets to be managed by Enterprise Manager. All required properties must have values in order to promote tar erties and promote the targets. 'Configure Only' will save configured properties without promoting the targets.	gets.
	Promote Configure Only Can	cel
Taxaat	45	
Target		
Target Name		
	TimesTen Database	
Agent	https://testhost:3872/emd/main/	
TimesTen monitoring cred	ential	
Credential type	TimesTen database credential	
* TimesTen database user	appuser	
name	abbase.	
* TimesTen password	•••••	
* Confirm TimesTen password		
Cache administration/cache manager user name	cacheadmin	
Oracle database cache administration password		
Confirm Oracle database		
cache administration password		
TimesTen database cache manager password		
Confirm TimesTen database cache manager password		
Properties		
* Data Source Name	sampledb_1122	
* TimesTen instance name	tt1122	
Global Properties		

The Confirmation dialog displays. The target promotion can take several minutes. You should see the informational message: "Promote target - Completed Successfully". Locate the Close button.

15. Click Close.

Figure 1–45 Promote target completed successfully

Confirmation	
Promote Target - Completed Successfully	
Hide	
	Close

Your TimesTen database target has been successfully added.

You can now verify and view information about your new target. For more information, see "Verifying and validating the plug-in" on page 1-32.

Manual configuration for a TimesTen instance target

For each TimesTen instance target you want to configure manually:

1. From the Setup menu, select Add Target, then select Add Targets Manually.
| | Setup 👻 👥 SYSMAN 🗸 | \subset |
|--------------------------|---------------------------|-----------|
| Configure Auto Discovery | Add Target | × |
| Auto Discovery Results | Extensibility | • |
| Add Targets Manually | Proxy Settings | |
| Group | Security | • |
| Dynamic Group | Incidents | • |
| Administration Groups | Notifications | × |
| Generic System | Provisioning and Patching | × |
| Redundancy System | My Oracle Support | • |
| Generic Service | Middleware Management | × |
| | Manage Cloud Control | × |
| | Command Line Interface | |
| | Management Packs | |

Figure 1–46 Add targets manually

The Add Targets Manually page displays. Locate the Add Targets Declaratively by Specifying Target Monitoring Properties option in the middle left section of the page.

2. Click in the circle to the left of the text Add Targets Declaratively by Specifying Target Monitoring Properties.

Figure 1–47 Add target manually

Add Targets Manually			$igodoldsymbol{eby}igodoldsymbol{igodoldy igodoldsymbol{igodoldsymbol{igodoldsymbol{igodoldsymbol{igodoldsymbol{igodolby}igodolby}igodoldy igo$	Page Re
Instruction Add Host Targets Add Targets Using Guided Process Add Targets Dedaratively by Speci	fying Ta	arget Monitoring Properties		
Targe	t Type	ADF Business Components for Java		•

The Target Type select list displays. You are now ready to select TimesTen Instance.

3. Expand the drop-down list labeled Target Type and select TimesTen Instance.



Add Targets Manually		Page Refresl
Instruction Add Host Targets		
Add Host Targets		
Add Targets Declaratively by Specifying Table	arget Monitoring Properties	
Target Type	TimesTen Instance	•
Monitoring Agent		Յիս
	Add Manually	\Box

You are now ready to search for the Monitoring Agent. Locate the Monitoring Agent search box below the Target Type select list.

4. Click the Search icon located to the right of Monitoring Agent.

The Select Targets dialog displays. You are now ready to select the monitoring agent for your TimesTen instance target. Locate the Targets table with columns Target Name, Target Type, On Host, and Status. Identify the Target Name of your agent. Ensure that the Target Type is Agent and double check the On Host column to ensure that the host name is correct.

5. Click in the row that identifies the Target Name of your agent and click Select.

Search				
-	A			
Target Type Target Name	Agent			
On Host				
Configuration Search		uration search cel	acted > 0	
Configuration Search	<no coming<="" th=""><th>juration search sea</th><th></th><th>Search</th></no>	juration search sea		Search
				Search
Target Name		Target Type	On Host	Status
testhost:3872		Agent	testhost	^
				Mode Single Sel

Figure 1–49 Select Management Agent

The Select Targets dialog closes and you are returned back to the Add Targets Manually page. Notice the agent you selected is auto-filled in the Monitoring Agent text field. Double check the Target Type is **TimesTen Instance** and the agent is correct.

You are now ready to add the target.

6. Click Add Manually...

Figure 1–50 Click add manually

Add Targets Manually		🕑 🛛 Page Refr
Instruction Add Host Targets Add Targets Using Guided Process Add Targets Declaratively by Specifying Ta	arget Monitoring Properties	
Target Type	TimesTen Instance	T
Monitoring Agent	testhost:3872	9
	Add Manually .	

The Add: TimesTen Instance page displays. Prepare to enter the target properties for your instance target. The first property is the target name.

In the Target Name text field, you define the TimesTen instance target name. Select a name that is a meaningful identifier. (For example, *hostname.instance*.)

7. In the ***Target Name** text field, type the TimesTen target name.

Notice the Target Type and Agent text fields, located below the Target Name text field, are auto-filled. You are now ready to enter the TimesTen instance name.

8. In the ***TimesTen instance name** text field, type the name of your TimesTen instance. (Use the ttStatus utility if you cannot recall the instance name. For more information, see "ttStatus" in the *Oracle TimesTen In-Memory Database Reference*.)

You are now ready to test your connection to ensure that your target is deployed successfully and configured properly.

9. Click Test Connection.

Figure 1–51 Test connection

Add: TimesTen Instanc	e
Add a target to be monitored by E	Enterprise Manager by specifying target monitoring properties. Test Connection Cancel Cancel
Target	
* Target Name	testhost.tt1122
	TimesTen Instance 11g https://testhost.orade.com:3872/emd/main
Properties	
* TimesTen instance name	tt1122
> Global Properties	

The Confirmation dialog displays. You should see the informational message: "Test Connection succeeded." If you do not see the "Test Connection succeeded" message, ensure that your instance name is correct.

10. In the Test Connection dialog, click **Close**.

Figure 1–52 Test Connection successful

🛃 (Confirmation	
Tes	Test Connection - Completed Successfully	
	Hide	
	Test Connection succeeded	
	<i>li</i>	

The Confirmation dialog closes. Locate the OK button at the top right of the page.

11. Click OK.

A second Confirmation dialog displays. You should see the informational message "Add Target - Completed Successfully." The target type (TimesTen Instance), Target name, and Agent are also displayed.

12. Click Close.

Figure 1–53 Target added successfully

🛃 C	Confirmation	
Add	Target - Completed Successfully	
	Hide	
	Added TimesTen Instance testhost.tt1122 on https://testhost.oracle.com:3872/emd/main	
		1.
		Classe
		Close

Your TimesTen instance target has been successfully added.

You can now verify and view information about your new target. For more information, see "Verifying and validating the plug-in" on page 1-32.

Manual configuration for a TimesTen database target

For each TimesTen database target you want to configure manually:

1. From the Setup menu, select Add Target, then select Add Targets Manually.

Figure 1–54 Add targets manually

	Setup 🗸 🕺 SYSMAN 🗸	0
Configure Auto Discovery	Add Target	+
Auto Discovery Results	Extensibility	•
Add Targets Manually	Proxy Settings	׳
Group	Security	F
Dynamic Group	Incidents	+
Administration Groups	Notifications	٠h
Generic System	Provisioning and Patching	•
Redundancy System	My Oracle Support	•
Generic Service	Middleware Management	\mathbf{F}
	Manage Cloud Control	×
	Command Line Interface	
	Management Packs	+

The Add Targets Manually page displays. Locate the Add Targets Declaratively by Specifying Target Monitoring Properties option in the middle left section of the page.

2. Click in the circle to the left of the text Add Targets Declaratively by Specifying Target Monitoring Properties.

Figure 1–55 Add Non-Host Targets

Add Targets Manually		🕑 🛛 Page Re
Instruction Add Host Targets Add Targets Using Guided Process Add Targets Declaratively by Specifyin	g Target Monitoring Properties	
Target Ty	pe ADF Business Components for Java	T

The Target Type select list displays. You are now ready to select TimesTen Database.

3. Expand the drop-down list labeled Target Type and select TimesTen Database.

You are now ready to search for the Monitoring Agent. Locate the Monitoring Agent search box below the Target Type select list.

4. Click the Search icon located to the right of Monitoring Agent.

Figure 1–56 Select target type

Add Targets Manually		Page Refres
Instruction Add Host Targets Add Targets Using Guided Process Add Targets Declaratively by Specifying Ta	arget Monitoring Properties	
Target Type	TimesTen Database	•
Monitoring Agent		
	Add Manually	T

The Select Targets dialog displays. You are now ready to select the monitoring agent for your TimesTen target. Locate the Targets table with columns Target Name, Target Type, On Host, and Status. Identify the Target Name of your agent. Ensure that the Target Type is Agent and double check the On Host column to ensure that the host name is correct.

5. Click in the row that identifies the Target Name of your agent and click Select.

Agent		
-		
«No configuration coards col	artada 🙆 🧷	
Cho configuration search sea		Search
Target Type	On Host	Status
Agent	testhost	^
		_
	Target Type	2 //

Figure 1–57 Select Management Agent

The Select Targets dialog closes and you are returned back to the Add Targets Manually page. Notice the agent you selected is auto-filled in the Monitoring Agent text field. Double check the Target Type is **TimesTen Database** and the agent is correct.

You are now ready to add the target.

6. Click Add Manually...

Figure 1–58 Click Add Manually

Add Targets Manually		🕑 🛛 Page Refre
Instruction Add Host Targets Add Targets Using Guided Process		
 Add Targets Osing Guided Process Add Targets Declaratively by Specifying Ta 	arget Monitoring Properties	
Target Type	TimesTen Database	•
Monitoring Agent	testhost: 3872	9
	Add Manually .	

The Add: TimesTen Database page displays. Prepare to enter the target properties for your target. The first property is the target name.

In the Target Name text field, you define the TimesTen target name. Select a name that is a meaningful identifier. (For example, *hostname.instance.DSN*.)

7. In the ***Target Name** text field, type the TimesTen target name.

Notice the Target Type, Agent, and Credential Type text fields, located below the Target Name text field, are auto-filled. You are now ready to enter the TimesTen monitoring credentials properties.

- **8.** In the ***TimesTen database user name** text field, type the TimesTen database user who has ADMIN privileges. Note: This user cannot be the TimesTen instance administrator.
- **9.** In the ***TimesTen password** text field, type the password for the TimesTen database user.
- **10.** In the ***Confirm TimesTen password** text field, re-type the password. You are now ready to enter the TimesTen properties.

Note: Steps 11-15 are only required if your database uses TimesTen cache features that you want to monitor. If you do not want to monitor TimesTen cache features, skip to step 16. For more information on TimesTen cache, see *Oracle TimesTen Application-Tier Database Cache User's Guide*.

- **11.** Type the TimesTen cache manager user in the **Cache administration/cache manager user name** text field. Note: This user must exist on the TimesTen database and the Oracle database.
- **12.** Type the Oracle database cache manager user password in the **Oracle database** cache administration password text field.
- **13.** In the **Confirm Oracle database cache administration password** text field, re-type the password.
- **14.** Type the TimesTen cache manager password in the **TimesTen database cache manager password** text field.

- **15.** In the **Confirm TimesTen database cache manager password** text field, re-type the password.
- **16.** In the ***Data Source Name** text field, type the DSN. The DSN must be a system DSN that is described in either your sys.odbc.ini file or the ODBC Data Source Administrator on MS Windows.
- **17.** In the ***TimesTen instance name** text field, type the name of your TimesTen instance. (Use the ttStatus utility if you cannot recall the instance name. For more information, see "ttStatus" in the *Oracle TimesTen In-Memory Database Reference*.)

You are now ready to test your connection to ensure that your target is deployed successfully and configured properly.

18. Click Test Connection.

Figure 1–59 Add TimesTen specific information

Add: TimesTen Database Add a target to be monitored by Enterprise Manager by specifying target monitoring properties. Test Connection OK Cancel Target * Target Name testhost.tt1122.sampledb_1122 Target Type TimesTen Database Agent https://testhost.oracle.com:3872/emd/main TimesTen monitoring credential Credential type TimesTen database credential TimesTen appuser database user name * TimesTen password * Confirm TimesTen ****** password Cache cacheadmin administration/cache manager user name Oracle database cache administration password Confirm Oracle ••••• database cache administration password TimesTen database cache manager password Confirm TimesTen database cache manager password Properties * Data Source Name sampledb_1122 * TimesTen instance tt1122 name Global Properties

The Confirmation dialog displays. You should see the informational message: "Test Connection succeeded." If you do not see the "Test Connection succeeded" message, ensure that your instance name and DSN are correct and the TimesTen database for the DSN is loaded into memory.

19. In the Test Connection dialog, click **Close**.

Figure 1–60 Test Connection successful

🗟 c	ionfirmation
Tes	t Connection - Completed Successfully
	Hide
	Test Connection succeeded
	Close

The Confirmation dialog closes. Locate the OK tab at the top right of the page.

20. Click OK.

A second Confirmation dialog displays. You should see the informational message "Add Target - Completed Successfully." The target type (TimesTen Database), Target name, and Agent are also displayed.

21. Click Close.

Figure 1–61 Target added successfully

Generation Add Target - Completed Successfully Hide	
Added TimesTen Database testhost.tt1122.sampledb_1122 on https://testhost.oracle.com:3872/emd/main	
	CloseN

Your TimesTen database target has been successfully added.

You can now verify and view information about your new target. For more information, see "Verifying and validating the plug-in" on page 1-32.

Verifying and validating the plug-in

After waiting a few minutes for the plug-in to start collecting data:

1. From the **Targets** menu, select **All Targets** on the Enterprise Manager Cloud Control 12*c* home page.

The All Targets page displays. Locate the Refine Search panel under All Targets.

2. Expand **Target Type**, then **Databases** and click **TimesTen Instance** or **TimesTen Database**.

Figure 1–62 Select your TimesTen target

All Targets

Refine Search

Target Type

Target Type

Databases
Database Instance (1)

TimesTen Database (2)
TimesTen Instance
D2)

The target table displays. For each row in the table, confirm the column Target Type contains **TimesTen Instance** or **TimesTen Database** and each row of the table contains the name of the target you previously configured. For more information on configuring a TimesTen target, see "Configure a TimesTen target" on page 1-16.

For each target type row, locate the column Target Status. Verify there is a green up arrow indicating the status is Up.

Figure 1–63 Verify the TimesTen target is Up.

Target Name	Target Type	Target Status	Pending Activation	${\bigtriangleup} \pmb{\nabla}$
testhost.tt1122.sampledb_1122	TimesTen Database			
		5		

You are now ready to verify there are no metric errors.

3. In the target table, locate the row that contains your TimesTen target. In the column Target Name, click the **Target Name**. (The target name is the name of the TimesTen target you configured).

Figure 1–64 Click the target name



The TimesTen target page displays.

4. From the **TimesTen Database Home** menu, select **Monitoring**, then select **Metric Collection Errors**.

Figure 1–65 Select Metric Collection Errors

TimesTen Database Home 🔻		
Home		
Monitoring	•	Performance Summary
Control	•	Transaction Monitor
Job Activity		Client/Server Summary
Information Publisher Reports		Cache Synchronization Metrics
Availability	•	Replication Monitor
Configuration	•	All Metrics
Compliance	•	Metric and Collection Settings
Target Setup	,	Metric Collection Errors
Target Sitemap		Status History
Target Information		Incident Manager
		Alert History
Database Usage		Blackouts

The Metric Collection Errors page displays a table with metric collection error information. Verify the first column named Metrics contains the text "There are no errors!".

Figure 1–66 No errors

testhost.tt1122.sampledb_1122 (3) (a) TimesTen IMDB Home •					
Metric Collection Erro	untered metric evaluation errors. These errors are	ollection Errors Page Refrest			
Metric	Error Triggered	Error Type			
There are no errors!					

You are now ready to set preferred credentials for your target.

Setting preferred credentials for a target

Set preferred credentials for a TimesTen target to:

- Start and stop the TimesTen daemon of a TimesTen instance.
- Use the transaction monitor of a TimesTen database.
- Create backups of a TimesTen database.
- Start and stop the TimesTen cache agent of a TimesTen database.
- Start and Stop the TimesTen replication agent of a TimesTen database.
- Load and unload a TimesTen database from memory.

For more information on the transaction monitor, see "Working with the Transaction Monitor" on page 7-1.

To set the preferred credentials for a target:

1. Ensure that you are on the Enterprise Manager Cloud Control home page. From the **Setup** menu, select **Security**, then select **Preferred Credentials**.

The Security Preferred Credentials page displays. Locate TimesTen Instance or TimesTen Database in the Target Type column.

2. Click TimesTen Instance or TimesTen Database.

Figure 1–67 Preferred Credentials Page

Security

Page Refreshed Sep 16, 2014 11:15:52 AM PDT 🖒

Preferred Credentials

You can use preferred credentials to simplify access to targets that you manage. If a target has preferred credentials set, applications that log in to that target will automatically use the preferred credentials. You can set default credentials for each target type. Default credentials are used for any targets that do not have preferred credentials explicitly set.

🥖 Manage Preferred Credentials				
Target Type	Total Targets	Targets with Credentials Set	Default Credentials Set	
Management Servers	1	0	No	
Metadata Repository	2	2 0	No	
OMS Console	1	0	No	
OMS Platform	1	0	No	
OMS and Repository	1	L 0	No	
Oracle Fusion Middleware Farm	1	0	No	
Oracle HTTP Server	1	0	No	
Oracle Home	4	+ O	No	
Oracle Management Service	1	0	No	
Oracle WebLogic Domain	1	L 0	No	
Oracle WebLogic Server	2	2 0	No	
TimesTen Database	1	L 0	No	
TimesTen Instance	1	L 0	No	

My Oracle Support Preferred Credentials

This is required to connect to My Oracle Support to search knowledge, file service requests and work with patches and updates.
Set MOS Credentials

You are now ready to set the preferred credentials for your TimesTen target. Locate the Manage Preferred Credentials button.

3. Click Manage Preferred Credentials.

Figure 1–68 Click Manage Preferred Credentials

Security

Page Refreshed Sep 16, 2014 11:24:11 AM PDT 🆒

Preferred Credentials

You can use preferred credentials to simplify access to targets that you manage. If a target has preferred credentials set, applications that log in to that target will automatically use the preferred credentials. You can set default credentials for each target type. Default credentials are used for any targets that do not have preferred credentials explicitly set.

Manage Preferred Credentials				
Target Type	Total Targets	Targets with Credentials Set	Default Credentials Set	
Management Servers	1	0	No	
Metadata Repository	2	0	No	
OMS Console	1	0	No	
OMS Platform	1	0	No	
OMS and Repository	1	0	No	
Oracle Fusion Middleware Farm	1	0	No	
Oracle HTTP Server	1	0	No	
Oracle Home	4	0	No	
Oracle Management Service	1	0	No	
Oracle WebLogic Domain	1	0	No	
Oracle WebLogic Server	2	0	No	
TimesTen Database	1	. 0	No	
TimesTen Instance	1	0	No	

My Oracle Support Preferred Credentials

This is required to connect to My Oracle Support to search knowledge, file service requests and work with patches and updates.
Set MOS Credentials

Depending on your selection, the TimesTen Instance Preferred Credentials or TimesTen Database Preferred Credentials page displays. Figure 1–69 Click the target name

4. In the Target Preferred Credentials table, locate the row that contains your TimesTen target. In the column Target Name, click the **Target Name**. (The target name is the name of the TimesTen target you configured.)

			rage keffeshe	ed Sep 16, 2014 11:27:00 AM
eferred Credentials > TimesTen D	atabase			
imesTen Database Pref	erred Creden	tials		
Preferences" tab, one can set its "Global Preferences" tab to view/ "Global Preferences" tab for those credentials are resolved in a spec	own preferences fo set Global preferen e privilege details. T ific order. User scop	r each target instance ces. To get/set "Globa To set "User Preferenc ped preferences will a	. One can also set us I Preferences" user n es" user does not req ways take precedenc	ices and Global Preferences. Under preferences at default level. Cli eeds certain minimum privilege. Ce uire any additional privilege. Pref- e. First we search at target level, the same lookup in Global preference
My Preferences Global Prefer	rences			
	-			
Target Preferred Credenti				
Target credentials can be specific Target Name	ed for each target. I	If set, target credentia Credential Set		t credentials for that target. arch
	🦾 Test 😤 V			arch
	Contest 00 v	lew References		Canfan
Target Name	Status	Credential Set	Target Username	Configur Credential Name
			rangee opermanie	
 testhost.tt1122.sampledb 		Host Credentials		
Click Set. gure 1–70 Click se		Host Credentials		
Click Set.		Host Credentials	Page Refreshe	d Sep 16, 2014 11:27:00 AM
Click Set. gure 1–70 Click se	et	Host Credentials	Page Refreshe	d Sep 16, 2014 11:27:00 AM
Click Set. gure 1–70 Click se ecurity	əf atabase		Page Refreshe	d Sep 16, 2014 11:27:00 AM
Click Set. gure 1–70 Click set ecurity ferred Credentials > TimesTen Database Pref TimesTen Database Pref This page lists preferred credenti Preferences" tab, one can set its "Global Preferences" tab to view/ "Global Preferences" tab to view/	et atabase ferred Credeni al preferences fo set Global preference e privilege details. T ific order. User scop	tials re are 2 kinds of prefe reach target instance reach oget/set "Globa io set "User Preferences will al	rences, User Preferen . One can also set use l Preferences" user ne es" user does not req ways take precedenci	er preferences at default level. Cli eeds certain minimum privilege. C uire any additional privilege. Pref e. First we search at target level,
Click Set. gure 1–70 Click set ecurity eferred Credentials > TimesTen Di TimesTen Database Pref This page lists preferred credentii Preferences" tab, one can set its "Global Preferences" tab to view/ "Global Preferences" tab for thoss redentials are resolved in a spece	et atabase erred Credenti al preferences The own preferences for set Global preference privilege details. T ific order. User scop upe (default) prefer	tials re are 2 kinds of prefe reach target instance reach oget/set "Globa io set "User Preferences will al	rences, User Preferen . One can also set use l Preferences" user ne es" user does not req ways take precedenci	ces and Global Preferences. Und er preferences at default level. Cl zeds certain minimum privilege. U uire any additional privilege. Pref . First we search at target level,

 ✓ Target Preferred Credentials

 Target credentials can be specified for each target. If set, target credentials override the default credentials for that target.

 Target Name
 Credential Set

 View ▼
 ✓ Set

 X
 Clear

 Yetw
 ✓ Set

 Target Name
 Status

 Credential Set
 Configured

 Target Name
 Status

 © testhost.tt1122.sampledb_1122
 Host Credentials

The Select Named Credentials dialog displays.

6. Click in the circle to the left of the text New.

Note: If you already have a named credential, select it and skip to step 12.

Figure 1–71 Select Named Credential page

🥒 Select Named Credential		×
Credential	Named New There are no runned credentials defined.	
Test and Save Save	Cancel	ļļ,

The Select Named credential dialog refreshes. You are now required to enter the preferred credentials for your TimesTen target. The first property is the UserName.

- In the *UserName text field, type the user who has access to the target host. The username must be the operating system username of the TimesTen instance administrator.
- **8.** In the ***Password** text field, type the password for the user who has access to the target host. The password must be the operating system password of the TimesTen instance administrator.
- 9. In the ***Confirm password** text field, re-type the password.
- **10.** Click in the check box to the left of the text **Save As**.
- **11.** In the **Save As** text field, type the name you want to use for the preferred credentials. The credentials are saved with this name.
- **12.** Click **Test and Save**.

Figure 1–72 Click Test and Save

🥒 Select Named Credential		×
Credential * UserName	Named New Instadmin	
* Password	••••••	
* Confirm Password		
	✓ Save As TT1122_SAMPLEDB_1122_CREDENTIALS	
Test and Save	Cancel	,di

The information dialog displays with the text "Named credential association completed successfully".

Figure 1–73 Successful named credential association

(i) Information	×
Named credential association completed successfully.	

You have successfully associated the credential with your TimesTen target.

Changing the monitoring configuration of a TimesTen database target

When you configure your TimesTen database target, you specify the TimesTen username and password. If you change the password for this TimesTen user in the TimesTen database, you must update the password in the Enterprise Manager Cloud Control monitoring configuration. For more information on configuring your TimesTen target, see "Configure a TimesTen target" on page 1-16.

To change the monitoring configuration of your TimesTen database target:

1. Ensure that you are on the Enterprise Manager Cloud Control home page. From the **Targets** menu, select **All Targets** on the Enterprise Manager Cloud Control 12*c* home page.

The All Targets page displays. Locate the Refine Search panel under All Targets.

2. Expand Target Type, then Databases and click TimesTen Instance or TimesTen Database.

Figure 1–74 Select database target type

All Targets

Refine Search
Target Type
Databases
Database Instance (1)
TimesTen Database (2)
TimesTen Instanc

Locate the row that contains the target name.

Figure 1–75 Locate the TimesTen target

Target Name	Target Type	Target Status	Pending Activation	
testhost.tt1122.sampledb_1122	TimesTen Database	1		
A2				

You are now ready to update the password.

3. Right-click the **Target Name** located in the Target Name column of the row containing the TimesTen target and select **Target Setup**, then **Monitoring Configuration**.

Figure 1–76 Change the monitoring configuration

Target Name			Target Type	Target Status	Pending Activation $ riangle abla abla$
testhost.tt1*7	Home Monitoring Control	•	TimesTen Database	1	
	Job Activity Information Publisher Reports Availability	•			
	Configuration Compliance	• •			
	Target Setup Target Sitemap Target Information	Re	onitoring Configuration Iministrator Access	5	
		-	ld to Group operties	-	

The target monitoring configuration page displays. The Data Source Name, the TimesTen instance name, and the TimesTen username are auto-filled. If you have the TimesTen cache feature configured, the Cache admin password and the Cache admin user name text fields are auto-filled.

- **4.** In the **TimesTen password** text field, type the new password. This password must be the same password that exists in the TimesTen database for your TimesTen user. For example, if the TimesTen user name is *appuser*, and in the TimesTen database, you modified the TimesTen password for *appuser* to be *newpassword*, then in the TimesTen password field, type *newpassword*. For more information on changing a password in the TimesTen database, see "ALTER USER" in the *Oracle TimesTen In-Memory Database SQL Reference*.
- 5. Click OK.

Figure 1–77 Click OK

Monitoring Configuration		0	Cancel	Test Connection
* Data Source Name	sampledb_1122		13	
Cache administration/cache manager user name	cacheadmin			
* TimesTen instance name	tt1122			
TimesTen database cache manager password	******			
Oracle database Cache administration password	*****			
* TimesTen password	•••••			
* TimesTen user name	appuser			
Monitoring				

Oracle has automatically enabled monitoring for this target's availability and performance, so no further monitoring configuration is necessary. You can edit the metric thresholds from the target's homepage.

The Saved Successfully dialog displays indicating the settings are saved correctly in the repository.

6. In the Saved Successfully dialog, click OK.



Saved Successfully	×
Settings saved successfully in repository.Pushing them to agent will take sort time.	ne
	ж

The Saved Successfully dialog closes.

You can verify the new monitoring configuration of your target. For more information on verifying a TimesTen target, see "Verifying and validating the plug-in" on page 1-32.

Upgrading the Enterprise Manager Plug-in for TimesTen

You can upgrade the plug-in from version 12.1.0.2.0 to version 12.1.0.3.0. Upgrading the plug-in enables you to use the new features of the new plug-in while still keeping all of the metrics that the previous plug-in has collected.

Before upgrading, ensure that you have Oracle Enterprise Manager Cloud Control 12*c* Release 4 (or higher).

Note: If you perform these operations while performing an upgrade, your Management Agent automatically upgrades to version 12.1.0.3.0:

- Adding new TimesTen targets to Management Agents with the 12.1.0.2.0 plug-in version.
- Testing connection when modifying the monitoring configuration of an existing 12.1.0.2.0 TimesTen target. For more information, see "Changing the monitoring configuration of a TimesTen database target" on page 1-37.

To upgrade the plug-in from version 12.1.0.2.0 to version 12.1.0.3.0:

- 1. Download the 12.1.0.3.0 plug-in. For more information, see "Download the plug-in" on page 1-3.
- **2.** Deploy the 12.1.0.3.0 plug-in on the Management Server. For more information, see "Deploy the plug-in on Oracle Management Service" on page 1-6.
- **3.** Deploy the 12.1.0.3.0 plug-in on the Management Agent. For more information, see "Deploy the plug-in on the Management Agent" on page 1-11. It is recommended to complete this step after with step 2. However, if you only upgrade the Management Server while testing the new plug-in some features will not work. For more information, see "Limited functionality when only upgrading Management Server" on page 1-40.

You have successfully upgraded the TimesTen plug-in from version 12.1.0.2.0 to version 12.1.0.3.0. You do not need to modify any of your TimesTen target settings.

Limited functionality when only upgrading Management Server

While testing the new plug-in, you may decide to only upgrade the 12.1.0.3.0 plug-in on the Management Server. In this case, your Management Server is version 12.1.0.3.0 while your Management Agent is version 12.1.0.2.0 and certain features will not work. The following features will not work:

- On the database Home page, the SQL Monitor is unavailable.
- On the database Performance page, checkpoint history is unavailable.
- On the database Replication Monitor page, transmitter and receiver thread status is unavailable.
- The database Transaction Monitor is unavailable.

Uninstalling the Enterprise Manager Plug-in for TimesTen

You must remove all TimesTen targets before you can undeploy the plug-in. For example, if you have three TimesTen targets and two targets are deployed to one agent and the third target is deployed to a second agent, you must:

- Remove target 1 on agent 1.
- Remove target 2 on agent 1.
- Remove target 3 on agent 2.

You then undeploy and delete the plug-in from the Oracle Enterprise Manager Cloud Control.

To uninstall the Enterprise Manager Plug-in for TimesTen:

- Remove the TimesTen target
- Undeploy the plug-in from the Management Agent
- Undeploy the plug-in from OMS
- Delete the plug-in

Remove the TimesTen target

For each TimesTen target you want to remove:

1. From the **Targets** menu, select **All Targets** on the Enterprise Manager Cloud Control home page.



Figure 1–79 Select All Targets

The All Targets page displays. Locate the Refine Search panel under the text "All Targets."

2. Expand Target Type, then Databases and click TimesTen Instance or TimesTen Database.

Figure 1–80 Select TimesTen In Memory Database

All Targets

Refine Search	
Target Type	
Databases	
Database Instance (1)	
TimesTen Database (2)	
TimesTen Instanc	

The target table displays. For each row in the table, confirm the column Target Type is **TimesTen Instance** or **TimesTen Database**. Also, confirm each row of the table contains the name of the target you previously configured.

Locate the row that contains the target name you want to remove.

3. Right-click the **Target Name** located in the Target Name column of the row containing the TimesTen target and select **Target Setup**, then **Remove Target...**

Target Name		Target Type	Targ Stati		Pending Activation
testhost.tt1122.sampledb_1122		TimerTen Datahare	- 4		
	Hon	1e			
	Mon	itoring	•		
	Control		- F		
	Job	Activity			
	Info	rmation Publisher Repor	ts		
	Availability		+		
	Con	figuration	•		
	Com	pliance	- +		
	Targ	get Setup	•	ŀ	Monitoring Configuration
	Targ	get Sitemap		4	Administrator Access
	Targ	get Information		F	Remove Target
				A	Add to Group
				F	Properties

Figure 1–81 Remove target

The Confirmation dialog displays the text "You have chosen to remove *TimesTen_target_name* (TimesTen Instance). Do you want to proceed?" or "You have chosen to remove *TimesTen_target_name* (TimesTen Database). Do you want to proceed?"

The *TimesTen_target_name* is the name of your TimesTen target. For example, testhost.tt1122.sampledb_1122.

4. Click Yes.

Figure 1–82 Remove target confirmation dialog

Confirmation
You have chosen to remove testhost.tt1122.sampledb_1122 (TimesTen Database). Do you want to proceed?
Yes

The Information dialog displays the text "Target TimesTen_target_name (TimesTen Instance) has been deleted" or "Target TimesTen_target_name (TimesTen Database) has been deleted" where TimesTen_target_name is the name of your TimesTen target.

5. Click OK.

Figure 1–83 Target removed

i) Information	×
Target testhost.tt1122.sampledb_1122 (TimesTen Database) has bee	n deleted.
	OK

Verify the row that contained the TimesTen target has been removed from the target table.

Your TimesTen target is removed. Repeat Steps 1-5 to remove additional targets. If all targets are removed, you can undeploy and then delete the plug-in from the Oracle Enterprise Manager Cloud Control.

Undeploy the plug-in from the Management Agent

You must undeploy the plug-in from all the Management Agents that are monitoring TimesTen targets.

Note: Undeploy the plug-in from the Management Agents before you undeploy the plug-in from the Oracle Management Service (OMS).

Ensure that you have removed all TimesTen targets. For more information on the steps to remove a TimesTen target, see "Remove the TimesTen target" on page 1-41.

To undeploy the plug-in from the Management Agent, ensure that you are on the Oracle Enterprise Manager Cloud Control home page.

1. From the Setup menu, select Extensibility, then select Plug-ins.

Setup 🗸 🕺 SYSMAN 🗸 0 Add Target Search Target Name Ð Extensibility Self Update Proxy Settings • Plug-ins 1 Management Connectors Security Þ Data Exchange Incidents ₽ Development Kit Notifications Þ Provisioning and Patching Complete Cloud Lifecyc My Oracle Support • Integrated Application-Middleware Management ۲ Manage Cloud Control • Business-Driven Applic Command Line Interface Management Packs

Figure 1–84 Select Extensibility, then Plug-ins

The Plug-ins page displays and shows the Plug-ins table. Locate the Databases folder in the **Name** column.

2. Expand the Databases folder in the Name column and click **Oracle TimesTen In-Memory Database**.

Figure 1–85 Select Oracle TimesTen In-Memory Database plug-in

Plug-ins

ctions 🔻 View 👻	🛐 Deploy On 👻	🛐 Undeploy From 👻 [🚱 Check Updates 🛛 🚞 D	eployment Activities		
Name		Version				
Name		Latest Available	Latest Downloaded	On Management Se		
🖏 Oracle Utiliti	es	12.1.0.3.0 🕕				
Cloud (1)						
🔺 🚞 Databases 🕕						
🖏 IBM DB2 Dat	tabase	12.1.0.3.0 🕕				
🖏 Microsoft SQ	LServer Database	12.1.0.5.0 🕕				
🖏 Oracle Datab	ase	12.1.0.6.0	12.1.0.6.0	12.1.0.6.0		
🖏 Oracle Times	Ten In-Memory Di	12.1.0.3.0	12.1.0.3.0	12.1.0.3.0		
🖏 Sybase ASE	Database 😡	12.1.0.3.0 🕕				
Engineered Syst	tems 🕕					
👂 🚞 Middleware 🕕						
Servers, Storade	e and Network 🕕					

You are now ready to undeploy the plug-in from the agent. Locate the Undeploy From tab at the top of the page.

3. From the Undeploy From menu, select Management Agent....

Figure 1–86 Undeploy from Management Agent

Plug-ins

Actions 🔻 View 👻 📴 Deploy On 👻	🛐 Undeploy From 👻 💈	Check Updates 🛛 📋 Depl	oyment Activities
	Management Servers	Version	
Name	Management Agent	test Downloaded	On Management Serv
🖏 Oracle Utilities	12.1.0.3.0 🕕	N.	
Cloud 1			
🔺 🚞 Databases 🕕			
🖏 IBM DB2 Database	12.1.0.3.0 🕕		
🖏 Microsoft SQLServer Database	12.1.0.5.0 🕕		
🖏 Oracle Database	12.1.0.6.0	12.1.0.6.0	12.1.0.6.0
🖏 Oracle TimesTen In-Memory Di	12.1.0.3.0	12.1.0.3.0	12.1.0.3.0
🖏 Sybase ASE Database	12.1.0.3.0 🕕		
Engineered Systems (1)			
🕨 🚞 Middleware 🕕			
Servers, Storage and Network 1			

The Undeploy Plug-in from Management Agent General dialog displays. The plug-in Oracle TimesTen In-Memory Database is displayed in the Name column. Locate the Add... button below the Management Agent with this plug-in title.

4. Click Add...

Figure 1–87 Click Add

Undeploy Plug-in from Management Agent General			×
Name Oracle TimesTen In-Memor	y Database		
Management Agent with this plug-in			
Add X Remove			
Management Agent	Operating System	Deployed Version	Status
Add a Management Agent for plug-in undeploymen	t		

The Select Targets dialog displays. You are now ready to select the agent to undeploy. Below the text "Select Status Up Agents where TimesTen In-Memory Database is deployed," ensure that the Target Type column equals **Agent**.

5. In the Target table, locate the row that contains the correct agent as identified by target name and host. Click **in this row** and then click **Select**.

lect Targets				_
Select Status Up	Agents wh	ere Oracle TimesTen	In-Memory Data	base is deployed
Target Type Target Name On Host				
		uration search selected	>0,0	Search
Target Name		Target Type	On Host	Status
testhost:3872		Agent	testhost	1
Rows Selected 1				Mode Multi-Selec
				Select Cance

Figure 1–88 Select agent to undeploy

The Management Agent table is updated with the name of the Management Agent you selected.

6. Click Continue.

Figure 1–89 Click Continue

General Name Oracle TimesTen In-Memory	y Database		
lanagement Agent with this plug-in			
🕂 Add 💥 Remove			
lanagement Agent	Operating System	Deployed Version	Statu
esthost:3872	Linux x86-64	12.1.0.3.0	<u></u>

The Undeploy Plug-in from Management Prerequisite Checks dialog displays. Ensure that there is a green check mark in the Status column of the Management Agent table.

7. Click Next.

Figure 1–90 Click Next

Name Or	acle TimesTen In-Memory Dat	abase	
anagement Agent	Operating System	Status	Error Message
esthost:3872	Linux x86-64	\checkmark	No Error

The Undeploy Plug-in From Management Agent Review dialog displays and shows the informational message, "Undeployment of plug-ins from the Management Agent deletes the targets monitored by the plug-in, and also restarts the Management Agent. During downtime, the Management Agent will not be able to monitor any targets."

In the Management Agent with this plug-in table, verify the name in the Management Agent column is correct.

8. Click Undeploy.

Figure 1–91 Click Undeploy

Name Oracle TimesTen Ianagement Agent with this plug-in	In-Memory Database		
lanagement Agent	Operating System	Deployed Plug-in Version	Status
esthost:3872	Linux x86-64	12.1.0.3.0	1

The Undeploy Plug-in from Management Agent Confirmation dialog displays with a message indicating the undeployment of the plug-in has started on selected agents. The undeployment time varies. You may monitor the undeployment status by clicking Show Status or going to the Recent Deployment Activities page.

9. Click **Show Status**.

Figure 1–92 Undeploy agent confirmation



The Plug-ins Deployment Activities page displays showing the status of the undeployment steps in table format. Verify the first step located in the first row of the table contains the text, "Initialize" and verify the last step located in the last row of the table contains the text, "Update inventory." This is the last step in the undeployment process. Ensure that there are green checks in the Status column of each row in the Deployment Steps table. Such checks indicate all steps in the undeployment process are completed and are successful. Also, ensure that there is a green check in the Status column in the undeployment table located at the top of the page. If auto refresh is set to off, you may want to set auto refresh to 15 seconds, so you can see the steps as they are completed.

Figure 1–93 Undeployment successful

Name	Version	Status	s Content Type	e Destination	n	
Oracle TimesTen In-Memory Database	12.1.0.3.0	v	Discovery	adc618030	02.us.oracle.com	1838
Oracle TimesTen In-Memory Database	12.1.0.3.0	v	Plug-in	adc618030	02.us.oracle.com	1838
A Deployment Steps: Oracle	TimesTen In-	Memory	Database			
Deployment Steps: Oracle				End Time	Joh Stop Name	Les File
		Status	Start Time	End Time July 9, 201	Job Step Name	
Deployment Steps: Oracle			Start Time July 9, 2014	July 9, 201	Job Step Name invokeDecon invokeDecon	emoms.log
Deployment Steps: Oracle tep nitialize		Status V	Start Time July 9, 2014 July 9, 2014	July 9, 201 July 9, 201	invokeDecon invokeDecon	emoms.log

The plug-in is undeployed from the Management Agent and the automatic discovery scripts of the plug-in are removed from the Management Agent. Repeat Steps 1-8 to undeploy each management agent that is monitoring the plug-in.

You are now ready to undeploy the plug-in from the Oracle Management Service (OMS).

Undeploy the plug-in from OMS

Before you undeploy the plug-in from OMS, ensure that you have undeployed the plug-in from all the Management Agents that are monitoring the plug-in.

To undeploy the plug-in from OMS, ensure that you are on the Oracle Enterprise Manager Cloud Control home page.

1. From the Setup menu, select Extensibility, then select Plug-ins.

Figure 1–94 Select Extensibility, then Plug-ins



The Plug-ins page displays and shows the Plug-ins table. Locate the Databases folder in the Name column.

2. Expand the Databases folder in the Name column and select **Oracle TimesTen In-Memory Database**.

Figure 1–95 Select TimesTen In-Memory Database plug-in

This page lists the plug	-ins available, downlo	aded, and deployed to t	he Enterprise Manager syste	m. Use this page to dep		
Actions - View -	🛐 Deploy On 👻	🛐 Undeploy From 👻	🙆 Check Updates 🛛 🖺	Deployment Activities		
Name		Version				
		Latest Available	Latest Downloaded	On Management Se		
G Oracle Uti	lities	12.1.0.3.0 (1)				
Cloud (1)						
🔺 🚞 Databases 🫈						
🖏 IBM DB2	Database	12.1.0.3.0 🕕				
🖏 Microsoft	SQLServer Database	12.1.0.5.0 🕕				
🖏 Oracle Da	tabase	12.1.0.6.0	12.1.0.6.0	12.1.0.6.0		
🚳 Oracle Tir	nesTen In-Memory Di	12.1.0.3.0	12.1.0.3.0	12.1.0.3.0		
🖏 Sybase As	5E Database 😡	12.1.0.3.0 🕕				
Engineered S	ystems 🕕					
👂 🚞 Middleware 🤇	D					
Servers, Stor	age and Network 🕕					

You are now ready to undeploy the plug-in from OMS. Locate the Undeploy From tab at the top of the page.

3. From the Undeploy From menu, select Management Servers....

Plug-ins						
This page lists the plug-	ins available, download	ded, and deployed to th	e Enterp	rise Manage	r system	. Use this page to deploy
Actions - View -	📴 Deploy On 👻	💁 Undeploy From 👻		ck Updates	🛅 Dej	ployment Activities
		Management Server	s	Version		
Name		Management Agent.	¹⁶ ite	est Downloa	ded	On Management Server
Cloud (1)		Ŭ				
🔺 🚞 Databases 🤇	D					
🖏 IBM DB2 (Database	12.1.0.2.0 🕕				
🖏 Microsoft	SQLServer Database	12.1.0.4.0 🕕				
🍇 Oracle Da	tabase	12.1.0.6.0	12.	1.0.6.0		12.1.0.6.0
🖏 Oracle Tin	nesTen In-Memory Da	12.1.0.3.0	12.	1.0.3.0		12.1.0.3.0
🖏 Sybase A	SE Database	12.1.0.2.0 🕕				
Engineered S	ystems 🕕					
👂 🚞 Middleware 🤇	D					
N 🗁 carrier carr	d Nille					

Figure 1–96 Undeploy from OMS

The Undeploy Plug-in from Management Server General page displays. The plug-in Oracle TimesTen In-Memory Database is displayed in the Name column and the Version is auto-filled. You must enter the Repository SYS user password.

4. In the *Repository SYS Password column, type the Repository SYS user password.

Figure 1–97 Repository SYS Password

Indeploy Plug-in From I	Manageme	nt Server	×
General	-		
	Name	Oracle TimesTen In-Memory Database	
	Version	12.1.0.3.0	
* Repository SYS	Password	******	
Target Types			
Name	Suppo	orted Target Versions	
TimesTen Database	11.2.2	2.6.0	
TimesTen Instance	11.2.2	2.6.0	

Locate the Continue button in the bottom right of the dialog.

5. Click Continue.

Figure 1–98 Click Continue

Undeploy Plug-in From Manage	ment Server	×
General		
Nam	e Oracle TimesTen In-Memory Database	
Versio	n 12.1.0.3.0	
* Repository SYS Passwor	d ••••••	
Target Types		
Name Su	pported Target Versions	
TimesTen Database 11	.2.2.6.0	
TimesTen Instance 11	.2.2.6.0	
		Continue

The Undeploy Plug-in From Management Server Review page displays. In the Management Servers table, verify the Management Server name is correct. Verify the version is correct. Also, consider making a backup of the OMS repository before deploying the plug-in. For more information on backing up the OMS repository, see "Backing Up the OMS" in the *Oracle Enterprise Manager Cloud Control Advanced Installation and Configuration Guide*.

6. Select the Have you backed up the repository and configuration of first management server? check box.

Figure 1–99 Select repository backup confirmation

Undeploy Plug-in From Management Server		×
Review		
Undeployment of plug-in from the Management Server re automatically disconnected from the Enterprise Manager. Manager, and Enterprise Manager will not be able to mon	During downtime, users will not be able to connect to	
Oracle recommends that you take a backup of the repository, and exp exportconfig oms". Otherwise, ensure that a recovery plan is in place * Have you backed up the repository and configuration of first n	prior to undeploying the plug-in.	mand "emctl
Name Oracle TimesTen In-Memory Database		
Version 12.1.0.3.0		
Management Servers		
Name	Currently Deployed Plug-in Version	Status
testhost:4890_Management_Service	12.1.0.3.0	
	Pack Hadavia	Canad
	Back Undeploy	Cancel

7. Click Undeploy.

Review Undeployment of plug-in from the Management Server requires downtime. All currently connect automatically disconnected from the Enterprise Manager. During downtime, users will not be abl Enterprise Manager, and Enterprise Manager will not be able to monitor any targets. Oracle recommends that you take a backup of the repository, and export the first Management Server configuration of exportconfig oms [*] . Otherwise, ensure that a recovery plan is in place prior to undeploying the plug-in.	
I Have you backed up the repository and configuration of first management server?	using the command "emct
Name Oracle TimesTen In-Memory Database	
Version 12.1.0.3.0	
Management Servers	
Name Currently Deployed Plug-in	version Status
testhost:4890_Management_Service 12.1.0.3.0	^

Figure 1–100 Review Undeploy from OMS

Note: The Oracle Enterprise Manager Cloud Control server restarts during the undeployment process.

The Undeploy Plug-in From Management Server Confirmation page displays with a message indicating the undeployment of the plug-in is in progress. The undeployment time varies. You may monitor the undeployment status by clicking Show Status or going to the Recent Deployment Activities page.

8. Click Show Status.

Figure 1–101 Undeploy from OMS confirmation



The Plug-ins Deployment Activities page displays showing the status of the undeployment steps in table format. Verify the last step located in the last row of the table contains the text, "Remove plugin's oracle home." This is the last step in the undeployment process. Ensure that there are green checks in the Status column of each row in the Deployment Steps table. Such checks indicate all steps in the undeployment process are completed and are successful. Also, ensure that there is a green check in the Status column in the undeployment table located at the top of the page. If auto refresh is set to off, you may want to set auto refresh to 15 seconds, so you can see the steps as they are completed.

Figure 1–102 Undeployment of OMS successful

View 👻							
Name	Version	Status	Content Typ	e Destination	n		
Oracle TimesTen In-Memory Database	12.1.0.3.0	\$	Plug-in	testhost:4	890_Managemer	nt_Service	÷
						۱.	
Deployment Steps: Oracle	TimesTen In-M	lemory D	atabase				
Step	St	atus	Start Time	End Time	Job Step Name	Log File	
Submit job for undeployment		v	July 9, 2014	July 9, 201	N/A	emoms.log	
Initialize		v	July 9, 2014	July 9, 201	UndeployPlu	configplugin_deconfig_2014-07	7-09
Validate plug-in home		v	July 9, 2014	July 9, 201	UndeployPlu	configplugin_deconfig_2014-07	7-09
Delete plug-in's metadata		v	July 9, 2014	July 9, 201	UndeployPlu	configplugin_deconfig_2014-07	7-09
Stop management server		v	July 9, 2014	July 9, 201	UndeployPlu	emctl.log	
Deconfigure plug-in from middle 1	tier	1	July 9, 2014	July 9, 201	UndeployPlu	configplugin_deconfig_2014-07	-09
Deconfigure plug-in from Manage	ement	1	July 9, 2014	July 9, 201	UndeployPlu	schemadrop_2014-07-09_16-1	2-29
Update inventory		1	July 9, 2014	July 9, 201	UndeployPlu	configplugin_deconfig_2014-07	7-09
Start management server		1	July 9, 2014	July 9, 201	UndeployPlu	emctl.log	
Remove plug-in's Oracle home			July 9, 2014	July 9, 201	UndeployPlu	deinstall 2014-07-09 16-12-29	ə.loc

The plug-in is undeployed from OMS.

You are now ready to delete the plug-in from OMS and the Management Agent.

Delete the plug-in

When you delete the plug-in, you remove the plug-in from the Oracle Enterprise Manager Cloud Control. To delete the plug-in, ensure that you are on the Oracle Enterprise Manager Cloud Control home page.

1. From the Setup menu, select Extensibility, then select Self Update.

	Setup 👻 🕺 SYSMAN 🗸	0
Search Target Name	Add Target	•
Self Update	Extensibility	
Plug-ins	Proxy Settings	+_
Management Connectors	Security	•
Data Exchange	Incidents	
Development Kit	Notifications	•
	Provisioning and Patching	•
Complete Cloud Lifecy	My Oracle Support	
integrated Application	Middleware Management	
Business-Driven Applic	Manage Cloud Control	•
	Command Line Interface	
	Management Packs	•

Figure 1–103 Select Extensibility, then Self Update

The Self Update page displays. Locate the Plug-in folder.

2. Click the name Plug-in.

Figure 1–104 Plug-in folder

	ally provides new functionality	anu upuates	TOI EXISTIN	reature
Status				
Most Re	Connection Mode Online cent Refresh Time 🖋 Jul 9,	2014 3:15:2	6 PM PDT	
Actions 👻	🔁 Open 🛛 🐠 Check Update	es 😽	🙆 Agen	it Softwa
Гуре		Available (Jpdates	Dowr
칠 Diagnosti	c Checks		0	
EM Deplo	yment Prerequisite Resources		0	
Enterprise	e Configuration Search	0		
칠 Exadata (Configuration Template	0		
Extensibil	ity Development Kit	0		
Management Connector			19	
Metric Extensions			0	
Middlewa	re Profiles and Gold Images		1	
Monitorin			0	
~	tabase Provisioning Profiles an		0	
Oracle Vir	tual Product Mapping		0	
	tual Templates and Oracle Virti		36	
Plug-ip			53	
📃 Provisioni	-		0	
	Management templates		7	

The Plug-in Updates page displays. In the Plug-in Name column, locate Oracle TimesTen In-Memory Database. Confirm the Status column is equal to Downloaded.

3. In the Plug-in Name column, click Oracle TimesTen In-Memory Database.

Figure 1–105 Plug-in updates

Actions 👻 🚽	'j Download 🛛 🔞 A	pply 🙆 Plug-in 🛛 🔛 S	earch Description			+
Status	OS Platform	Plug-in Name		Revision	Version	Vendor
🖏 Applied	Generic Platform	Oracle Fusion Middleware		0	12.1.0.6.0	ORACLE
💐 Applied	Generic Platform	Oracle Database		0	12.1.0.6.0	ORACLE
💐 Applied	Generic Platform	Oracle Exadata		0	12.1.0.6.0	ORACLE
🔎 Available	Generic Platform	Apache Tomcat		0	12.1.0.3.0	ORACLE
🔎 Available	Generic Platform	Oracle Communications		0	12.1.0.1.0	ORACLE
🔎 Available	Generic Platform	Oracle Axiom		0	12.1.0.1.0	ORACLE
🔎 Available	Generic Platform	Enterprise Manager for Peop	eSoft	0	12.1.0.1.0	ORACLE
🗭 Available	Generic Platform	Oracle Jdedwards Enterprise	One	0	12.1.0.2.0	ORACLE
🗭 Available	Generic Platform	Oracle Jdedwards Enterprise	One	0	12.1.0.1.0	ORACLE
🗭 Available	Generic Platform	Oracle E-Business Suite		0	12.1.0.2.0	ORACLE
🔎 Available	Generic Platform	Oracle E-Business Suite		0	12.1.0.1.0	ORACLE
🛃 Downloaded	Generic Platform	Oracle TimesTen In-Memory I	Database	0	12.1.0.3.0	ORACLE
🕫 Available	Generic Platform	Oracle Tuxedo	45	0	12.1.0.3.0	ORACLE
🖉 Available	Generic Platform	Oracle TimesTen In-Memory I	Database	0	12.1.0.2.0	ORACLE

Prepare to expand the Actions tab located under Plug-in Updates at the top of the page.

4. Expand Actions and select Delete.

Figure 1–106 Delete plug-in

ctions 👻 🚽	g Download 🛛 🔞 A	pply 🛿 Plug-in 🛛 🔤	Search Description			→
Download	OS Platform	Plug-in Name		Revis	io Version	Vendor
Apply	Generic Platform	Oracle Fusion Middleware		0	12.1.0.6.0	ORACLE
	Generic Platform	Oracle Database		0	12.1.0.6.0	ORACLE
Remove	Generic Platform	Oracle Exadata		0	12.1.0.6.0	ORACLE
Readme	Generic Platform	Apache Tomcat		0	12.1.0.3.0	ORACLE
Export	Generic Platform	Oracle Communications		0	12.1.0.1.0	ORACLE
Delete N	Generic Platform	Oracle Axiom		0	12.1.0.1.0	ORACLE
Available 😽	Generic Platform	Enterprise Manager for Peo	pleSoft	0	12.1.0.1.0	ORACLE
Available	Generic Platform	Oracle Jdedwards Enterpris	eOne	0	12.1.0.2.0	ORACLE
Available	Generic Platform	Oracle Jdedwards Enterpris	eOne	0	12.1.0.1.0	ORACLE
Available	Generic Platform	Oracle E-Business Suite		0	12.1.0.2.0	ORACLE
Available	Generic Platform	Oracle E-Business Suite		0	12.1.0.1.0	ORACLE
Downloaded	Generic Platform	Oracle TimesTen In-Memory	Database	0	12.1.0.3.0	ORACLE
Available	Generic Platform	Oracle Tuxedo		0	12.1.0.3.0	ORACLE
Available	Generic Platform	Oracle TimesTen In-Memory	Database	0	12.1.0.2.0	ORACLE

The Delete Update dialog displays indicating the delete will remove the update (plug-in) permanently. Prepare to confirm the delete by clicking Delete.

5. Click Delete.

Figure 1–107 Delete Update confirmation

```
    Delete Update ×

Delete will remove the update permanently
Do you want to delete?

Delete Cancel
```

A confirmation dialog displays indicating that the update (plug-in) has been deleted permanently.

6. Click OK.

Figure 1–108 Plug-in deleted



You have successfully deleted the plug-in. You can verify the plug-in has been deleted by reviewing the Plug-in Updates page. You should no longer see the TimesTen plug-in.

Working with the TimesTen Target Page

The TimesTen plug-in collects many metrics that are useful in troubleshooting performance issues. The TimesTen target page displays a collective view of your database or instance, the performance of your database, and control operations for your instance.

This chapter details the procedure for navigating to the TimesTen target page and provides an overview of the TimesTen target page.

Topics include:

- Navigating to the TimesTen target page
- Overview of the TimesTen instance target page
- Overview of the TimesTen database target page
- Setting the display time period and auto refresh rate of data on a target page
- Viewing the log of control operations

Navigating to the TimesTen target page

To navigate to the TimesTen target page:

1. From the **Targets** menu, select **All Targets** on the Enterprise Manager Cloud Control 12c home page.

The All Targets page displays. Locate the Refine Search panel under All Targets.

2. Expand Target Type, then Databases and click TimesTen Instance or TimesTen Database.

Figure 2–1 Choose TimesTen Database

All Targets

Refine Search
Target Type
Databases
Database Instance (1)
TimesTen Database (2)
TimesTen Instanc

The target table displays. For each row in the table, confirm the column Target Type contains **TimesTen Instance** or **TimesTen Database**. The number of rows depends on the number of TimesTen targets you have configured. For example, if you configured two TimesTen targets, then you should see two rows in the table.

3. In the column Target Name, identify the TimesTen target you want to review, and click the **Target Name**. The target name is the name of the TimesTen target you configured.

Figure 2–2 Click the target name



The TimesTen target page displays. For more information on the TimesTen instance target page, see "Overview of the TimesTen instance target page" on page 2-2. For more information on the TimesTen database target page, see "Overview of the TimesTen database target page" on page 2-3.

Overview of the TimesTen instance target page

The TimesTen instance target page enables you to gather monitoring and metrics information specific to TimesTen instances and control the TimesTen daemon and server. Figure 2–3, "TimesTen instance target page" shows Enterprise Manager Cloud Control menu choices and menu choices that have been customized for TimesTen instance targets.

ORACLE [®] Enterprise	e Manager Cloud Control 12c
🔹 Enterprise 🔻 🧿 <u>T</u> argets 👻	🐈 Eavorites 🔻 🞯 History 👻
testhost.tt1122 ③	
Home	
Monitoring	•
Control	 Start/Stop Services
Job Activity	Create Blackout
Information Publisher Reports	End Blackout
Configuration	tle.com
Compliance	•
Target Setup	•
Target Sitemap	
Target Information	

Figure 2–3 TimesTen instance target page

A description of the menu choices that have been customized for TimesTen instance targets follows:

Home

Displays high level information about the TimesTen instance. For more information, see Chapter 4, "Working with the TimesTen Instance Home Page".

Monitoring - All Metrics

Displays TimesTen instance metric information in table format. For more information, see "Viewing TimesTen instance metrics" on page 14-27.

Control - Start/Stop Services

Displays controls to start and stop the TimesTen daemon and server. For more information, see "Start/stop services" on page 9-1.

Control - Create Blackout

Displays controls to create a blackout to suspend all data collection activity on a target that is monitored by Enterprise Manager. For more information, see "Create blackout" on page 9-2.

Control - End Blackout

Displays controls to end a blackout and resume all data collection activities on a target that is monitored by Enterprise Manager. For more information, see "End blackout" on page 9-2.

Overview of the TimesTen database target page

The TimesTen database target page enables you to gather monitoring and metrics information specific to TimesTen database targets and control various functions of the TimesTen database. Figure 2–4, "TimesTen target page" shows Enterprise Manager Cloud Control menu choices and menu choices that have been customized for TimesTen database targets.

Figure 2–4 TimesTen target page

🔗 RACLE' Enterprise Mai	-				
<pre> testhost.tt1122.sampledb_1122 ③ TimesTen Database Home Home </pre>					
Monitoring Image: Control Control Image: Control Job Activity Information Publisher Reports Availability Image: Configuration Configuration Image: Compliance	Performance Summary Transaction Monitor Client/Server Summary Cache Synchronization Metrics Replication Monitor All Metrics Metric and Collection Settings Metric Collection Errors				
Target Setup Target Sitemap Target Information	Status History Incident Manager Alert History Blackouts				

A description of the menu choices that have been customized for TimesTen targets follows:

Home

Displays high level performance metrics and configuration data. For more information, see Chapter 5, "Working with the TimesTen Database Home Page."

Monitoring - Performance Summary

Displays performance metrics in graphical format. For more information, see Chapter 6, "Working with the Performance Summary Page."

Monitoring - Transaction Monitor

Displays a snapshot of the current transactions in your TimesTen database and describes details about your transactions. For more information, see Chapter 7, "Working with the Transaction Monitor".

Monitoring - Client/Server Summary

Displays client/server information about your database. For more information, see Chapter 8, "Working with the Client/Server Page".

Monitoring - Cache Synchronization Metrics

Displays cache synchronization metrics. For more information, see Chapter 12, "Working with the Cache Synchronization Metrics Page."

Monitoring - Replication Monitor

Displays information for monitoring replication. For more information, see Chapter 13, "Working with the Replication Monitor."

Monitoring - All Metrics

Displays metric information about your TimesTen database target in table format. For more information, see "Viewing TimesTen database metrics" on page 14-2.

Control - Start/Stop Agents

Displays controls to start and stop the cache and replication agents. For more information, see "Start/stop agents" on page 10-1.

Control - Ram Load/Unload and Policy Settings

Displays controls to control and configure the RAM policy of the TimesTen database. For more information, see "Ram load/unload and policy settings" on page 10-2.

Control - Create Blackout

Displays controls to create a blackout to suspend all data collection activity on a target that is monitored by Enterprise Manager. For more information, see "Create blackout" on page 9-2.

Control - End Blackout

Displays controls to end a blackout and resume all data collection activities on a target that is monitored by Enterprise Manager. For more information, see "End blackout" on page 9-2.

Information Publisher Reports

Displays reports about your TimesTen database. For more information, see Chapter 16, "Viewing Reports."

Availability - Backup & Restore

Displays controls to backup and restore the TimesTen database. For more information, see Chapter 11, "Working with the Backup and Restore Page".

Setting the display time period and auto refresh rate of data on a target page

Enterprise Manager enables you to set the display frequency and auto refresh rate of data on a target page.

Figure 2–5 View Data and Auto Refresh region

Page Refreshed Dec 8, 2014 1:27:08 PM PST 🖒 View Data Real Time 🔹 Auto Refresh 1 minute 🔹

You can set the time period and auto refresh rate of data with the following options:

View data

Auto refresh

View data

The View Data option enables you to view data on a target page based on a historical time period or in real time. This option is not available on all TimesTen target pages and only affects graphs. When a TimesTen target page has a View Data option it is located in the top right corner of the page with the following options:

- Real Time
- Last 2 Hours
- Last 24 Hours
- Last 7 Days
- Last 31 Days
- Custom Time Period...

By default, every TimesTen target page uses a view data time period of Last 24 Hours. It is recommended to use the Real Time option of View Data when monitoring a TimesTen target.

Auto refresh

The Auto Refresh option enables you to control the auto refresh rate of a target page. This option is available on all TimesTen target pages and affects the whole target page. The Auto Refresh option is located in the top right corner of the target page and the options vary depending on the value of the View Data option.

Viewing the log of control operations

Enterprise Manager logs all control operations that are performed on Enterprise Manager targets. In some cases it is useful to review these logs.

- 1. From the **Targets** menu, select **All Targets** on the Enterprise Manager Cloud Control 12c home page.
- 2. Expand Target Type, then Middleware and click Oracle WebLogic Server.

Figure 2–6 Select Oracle WebLogic Server

Refine Search			
Ta	rget Type		
-	Databases		
	Database Instance (1)		
	TimesTen Database (1)		
	TimesTen Instance (1)		
1	Groups, Systems and Services		
	Database System (1)		
	EM Service (2)		
	Group (1)		
	Management Servers (1)		
	Middleware		
	Application Deployment (3)		
	Metadata Repository (2)		
	Oracle Fusion Middleware Farm (1)		
	Oracle HTTP Server (1)		
	Oracle WebLogic Domain (1)		
	Oracle WebLogic Server (2)		
	Servers, Storage and Letwork		

The target table displays. For each row in the table, confirm the column Target Type contains **Oracle WebLogic Server**.

3. In the column Target Name, identify the Oracle WebLogic Server target that manages your OMS, and click the **Target Name**. Typically this target name is /EMGC_EMGC_DOMAIN/EMGC_OMAIN/EMGC_OMS1.

Figure 2–7 Click the target name



The WebLogic Server target page displays. Locate the WebLogic Server menu.

4. From the WebLogic Server menu, select Logs, then View Log Messages.

Figure 2–8 Select View Log Messages

î	EMGC_OMS1 ⁽³⁾ WebLogic Server V Start Up	l Chu	.+	Down 🕲 Create Black
	Home	Silu		Down Que Create Diacki
	Monitoring	,		
	Diagnostics	,		
	Control)	-	м
	Logs)	۰Í	View Log Messages
	Information Publisher Reports			Log Configuration しろ
	JDBC Data Sources			
	Web Services			
	Routing Topology			
	Administration)	F	
	System MBean Browser			
ø	WebLogic Server Administration Consol	е		
	Configuration)	F	
	Compliance	•	١	
	Target Setup)	F	
	Target Sitemap			
	Target Information			
The Log Messages page displays. Locate the Search Mode field in the Search region.

- **5.** In the ***Search Mode** field, select the **Online Logs** option. If you want to search through archived logs or both types of logs, select Archive Logs or Both.
- 6. In the **Date Range** field, select an appropriate date range.
- 7. In the ***Message Types** field, select the type of messages that you want to search through. It is recommended to check all message types. TimesTen control operations are logged in trace files.
- 8. In the *Search field, select All Fields.
- **9.** In the **Keyword** field, select **contains** from the drop-down list and enter **OTT** in the text field.
- 10. Click Search.

Figure 2–9 Search log messages

Log Messages			
Selected Targets (3)			
Date Range * Message Types	Online Logs Archive Logs Both Most Recent In Minutes Incident Error Error Warning Selected Fields ONT	✓ Notification	Trace 闭 Unknown

A processing dialog displays. The search can take several minutes. You should see your search results in the table below the Search region. Locate issues that you want to review.

11. Click in the row that identifies the issue that you want to troubleshoot.

	d Targets (3	9						
* Search Mode	Online Log	gs 🔵 Archive Logs 🔵	Both					
Date Range	Most Recent	 Z0 Minute 	es 🔻					
* Message Types	🕑 Incident E	rror 🕑 Error 🕑 Wa	rning 🕑 N	lotification 🗹 Trace 🗹) Unknow	n		
* Search	Selected F	ields 💿 All Fields						
	_							
	Se	earch						
View 👻 Show	Messages	•	View R	elated Messages 💌	Export M	essages to File 💌		
Time Mess Type	age Message ID	Message	Target	Target Type	ECID E	Relationship ID	Archive	Log File
Sep 25, 2 Error		OTTDB_INTERNAL	/EMGC	Application Deployment	0000K	1:28519:186		emoms.log
lows Selected	1 Colu	ımns Hidden 21					Т	otal Rows :
🖌 Sep 25, 2014	2:04:26 PM	PDT (Error)	/EMGC_E	EMGC_DOMAIN/EMGC_D	OMAIN/EI	MGC_OMS1/emgc (Ap	plication D	eployment)
Message 1				Host IP A	ddress 1	0.111.111.111		
Level Relationship 1	-20E10-106				User S			
ID	.20519.100			Thr		Uob Step 20186	-1.011/0-3	
Component E	MGC_OMS1				Archive)000KYdngz4BDCApJ^	SIVIK80	15000002
Module o	rade.sysman.t	timesten.commands.Cr	eateBackup	Command '	archive _	-		
	esthost							

Figure 2–10 Search results

Troubleshoot the issues with the details that are displayed in the results region that is located at the bottom of the page.

3

Working with Access Control

This chapter focuses on access control of TimesTen targets in Oracle Enterprise Manager Cloud Control.

Topics include:

- Overview of access control
- Creating a group
- Defining roles
- Creating users
- Granting preferred credentials to users

Overview of access control

The Oracle Enterprise Manager uses privileges that are assigned to roles to manage targets and their operations. Targets can be grouped into groups. A TimesTen Enterprise Manager administrator can assign roles and groups to users to determine how and what they can manipulate in a TimesTen target.

Note: The default super administrator of Enterprise Manager, SYSMAN, can view and control all TimesTen targets without having to belong to a group or be assigned a role.

Creating a group

You must create these groups:

- A group that contains the host or hosts that contains your TimesTen targets.
- A group that contains the TimesTen targets that this group can view and control. You can combine TimesTen instances and databases into a single group or create multiple groups.
- 1. From the Targets menu, select Groups.

Enterprise Manager Cloud C CLE 🦚 Enterprise 🔻 💿 Targets 💌 🐈 Eavorites 👻 🥝 Hist All Targets Ctrl+Shift+T Welcome to Groups Systems Enterpris Services Hosts Databases Middleware Latest Fe **Business Applications** Composite Applications

Figure 3–1 Select Groups

The Groups page displays. Locate the Create button above the group table.

2. Expand Create and select Group.

Figure 3–2 Create a group

Groups							
	sers to monitor and man of group meant to autor						
Search Nam	e Save		+	Advanced Searc	.h		
View 🗸	💁 Create 👻 📑 Cre	ate Like	🖉 Edit	💥 Remove			
Name No Group four	Group 🔀 Dynamic Group Administration Group	bers					

The Add Target Create Group page displays. Prepare to enter the properties for your group. The first property is the group name.

In the *Name text field, you define the group name. Choose a name that is a meaningful identifier. (For example, datacenter1_hosts or datacenter1_ databases.)

3. Click in the check box to the right of **Privilege Propagation**. This setting allows group users to have access to new targets that are added to this group at a later date.

Figure 3–3 Enable privilege propagation

Add Target	Add Target						
Create Privile	ege Propagating Group						
General Ch	harts Columns Dashboard Access						
* Name	datacenter 1_databases						
Privilege Propagation							
Parent Groups	Add						

You are now ready to add member targets to your group. You can combine any type of Enterprise Manager target in your group, including TimesTen instance and TimesTen database targets. However, ensure that you create separate groups for hosts and TimesTen targets. For more information on adding TimesTen targets, see "Configure a TimesTen target" on page 1-16.

Locate the Add button in the Members region.

4. Click Add.

Figure 3–4 Add member

Add Target								
Create Privilege Propagating Group								
General	Charts	Columns	Dashboard	Access				
* Na	* Name datacenter 1_databases							
	Privilege Propagation If privilege propagation is enabled for a group, privileges granted on the group will be propagated to the group's member targets. Therefore only those targets on which you have Full Target privileges can be members of a privilege propagation-enabled group.							
Parent Grou	ups					Add	1	
Members	Members							
Add members to the group by simple search, by business criteria or both.								
Add Add By Criteria								
Select Nam	ne					Туре		
No T	Fargets Se	lected						

The Search and Select: Targets page displays. Locate the Target Type drop-down list in the Search region.

5. Expand the drop-down list labeled **Target Type** and select **Host**, **TimesTen Instance**, or **TimesTen Database**.

Note: Ensure that you separate hosts and TimesTen targets into different groups.

Figure 3–5 Search results

Search	and Select: Targets				Cancel Select	
Search	1					
Target	Type TimesTen Database 🔻					
Target I	Target Name					
On	Host					
	Go					
Only targ	ets on which you have FULL privileges are dis	splayed.			_	
Select /	All Select None					
Select	Name 📥	Туре	Host	Status		
	testhost.tt1122.sampledb_1122	TimesTen Database	testhost	T		
					Cancel Select	

The page refreshes with the results of your search. In the Name column, locate the row that contains the target name that you want to add to the group. Confirm the status is a green up arrow.

6. Select **the check box** of the row that identifies the **Name** of the row containing the target. If you want to add multiple targets, select the corresponding check box of any additional targets.

Figure 3–6 Select target

Search	and Select: Targets				
	-				Cancel Select
Search					
Target	Type TimesTen Database 🔻				
Target N	lame				
On	Host				
	Go				
Only targ	ets on which you have FULL privileges are di	splayed.			
Select A	All Select None				
Select	Name 📥	Туре	Host	Status	
	testhost.tt1122.sampledb_1122	TimesTen Database	testhost	1	
13					Cancel Select

Locate the Select button.

7. Click Select.

Figure 3–7 Click Select

Search	and Select: Targets				Cancel Select
Search					
Target	Type TimesTen Database 🔻				
Target N	lame				
On	Host				
	Go				
Only targ	ets on which you have FULL privileges are dis	splayed.			
Select A	II Select None				
Select	Name 📥	Туре	Host	Status	
	testhost.tt1122.sampledb_1122	TimesTen Database	testhost	T	
					Cancel Select

The Search and Select: Targets page closes and the Add Target Create Privilege Propagating Group page refreshes. You should now see your selected target in the Members table. Locate the OK button in the top right corner of the page.

8. Click OK.

Create Privilege Propagating Group	OK Ca
General Charts Columns Dashboard Access	K
* Name datacenter1_databases	Overview
Privilege Propagation If privilege propagation is enabled for a group, privileges granted on group will be propagated to the group's member targets. Therefore o those targets on which you have Full Target privileges can be member of a privilege propagation-enabled group. Parent Groups Add	inly cargets to monitor and manage as one.
Members	Using Charts tab, select metrics at target ty
Add members to the group by simple search, by business criteria or both.	level to monitor from your Groups home pa — These metrics will be displayed in Charts vie
Remove Add By Criteria	• Using Columns tab, customize display name
Select All Select None	for group members columns and charts.
Select Name Type Image: select sele	 Using Dashboard tab, configure display settings for your groups dashboard. Targets that match the specified filter criter
	can be added to the group. Since this group a privilege propagating group, your search i further limited to targets and other privilege propagating groups for which you have 'Ful target privileges.

The Information Dialog displays. You should see the informational message "Group *group_name* has been added." Locate the OK button.

9. Click OK.



(i) Information	×
Group datacenter 1_databases has bee	n added.
	ок

The Information dialog closes. You successfully created an Enterprise Manager group.

Your Enterprise Manager group is created. Repeat steps 1-9 to create additional groups. If you have one host group and at least one TimesTen target group, you can define Enterprise Manager roles.

Defining roles

Create a role that contains the privileges that you want to assign to Enterprise Manager users.

Ensure that you have at least one host group and one TimesTen target group. For more information on the steps to create an Enterprise Manager group, see "Creating a group" on page 3-1.

1. From the **Setup** menu, select **Security**, then select **Roles**.

Figure 3–10 Select Roles

	Setup 👻 🥵 SYSMAN 🗸	\subset
Search Target Name	Add Target	×
	Extensibility	+
	Proxy Settings	×
Security Console	Security	•
Administrators	Incidents	×
Roles	Notifications	×
Named Credentials	Provisioning and Patching	×
Preferred Credentials	My Oracle Support	⊁
Monitoring Credentials	Middleware Management	×
Privilege Delegation	Manage Cloud Control	•
Registration Passwords	Command Line Interface	
Audit Data	Management Packs	×

The Security Roles page displays. Locate the Create button above the Roles table.

2. Click Create.

Figure 3–11 Click Create



The Create Role: Properties page displays. You are now ready to enter the Enterprise Manager role properties. The first property is the role name.

In the *Name text field, you define the role name. Choose a name that is a meaningful identifier. (For example, TimesTen database administrators.)

3. In the *Name text field, type the Enterprise Manager role name.

Locate the Next button in the upper right corner of the page.

4. Click Next.

Figure 3–12 Click Next

•					——————————————————————————————————————
Properties	Roles	Target Privileges	Resource Privileges	Administrators	Review
Create Role: P	ropertie	S			
	-			C	ancel Step 1 of 6 Next Review
	vileges and				eady existing roles, system existing role will grant all privileges
		* Name TimesTen	database administrators]	
		Description			<i>I</i> e
	NTIAL or FL		granted to Super Adminis	d into System Roles.	an be granted to a private role i.e. Creator of a private role handles ancel Step 1 of 6 Next Review

The Create Role *role_name*: Roles page displays. Locate the Next button in the upper right corner of the page.

5. Click Next.

Figure 3–13 Click Next

Properties Roles Tar	rget Privileges Re	source Privileges	Administrators	Review
Create Role TimesTen dat	tabase administ	rators: Roles	Cancel	Back Step 2 of 6 Next Review
Select roles from the available list be grant all privileges to grantee of curr				
Available Roles		Selected Roles		
EM_ALL_ADMINISTRATOR EM_ALL_OPERATOR EM_ALL_OPERATOR EM_ALL_VIEWER EM_BASIC_SUPPORT_REP EM_CAP_ADMINISTRATOR EM_CAP_USER EM_CCB_ADMIN EM_CLOUD_ADMINISTRATOR EM_COMPLIANCE_DESIGNER EM_DOREPLAY_OPERATOR EM_DBREPLAY_VIEWER EM_DB_SERVICE_SUPPORT_REP EM_HOST_DISCOVERY_OPERATOR EM_INFRASTRUCTURE_ADMIN EM_LINUX_PATCHING_ADMIN EM_PATCH_ADMINISTRATOR EM_PATCH_DESIGNER	Move Move Move All C Remove Remove All C		×	
			Cancel	Back Step 2 of 6 Next Review

The Create Role *role_name*: Target Privileges page displays. Locate the Target Privileges region at the bottom of the page.

6. Click the Add button from the Target Privileges region.

Figure 3–14 Select privilege(s)

	Manage Any Target Metric	Ability to manage metric	for any target			All Target Types
	Privileges					
elect tar	gets and grant privileges on those targ	ets explicitly. Any Administrate	or granted with this role	e will have these	target privileges	
lame		Type All target type	es 🔻	Go Clear		
Add 2						
			Manage Ta	raet Privileae	Is Aggregate	Is Privilege Propagation
Select	Name	Туре	Grants	geernnege	Target	Enabled
	No target privileges are granted					

The Search and Add: Targets page displays. Locate the Target Type drop-down list in the Search region.

7. Expand the drop-down list labeled **Target Type** and select **Group**.

Figure 3–15 Search results

Searcl	h and Add: Targets				Cancel Select
Search	1				
Target I Target I On					
Select /	All Select None				
Select	Name 📥	Туре	Host	Status	
	datacenter1_databases	Group	n/a	n/a	
	datacenter1_hosts	Group	n/a	n/a	
					Cancel Select

The page refreshes with the results of your search. In the Name column, locate the row that contains the group names that you want to add to the role. You should have at least one TimesTen target group and its respective host group.

8. Select **the check boxes** of the rows that identify the **Name** of the rows containing the groups. Ensure to select a TimesTen target group and its respective host group.

Search	n and Add: Targets					Cancel Select
Search	1					
Target	Type Group	۲				
Target N	Vame					
On	Host					
	Go					
Select /	All Select None					
Select	Name 📥		Туре	Host	Status	
√	datacenter1_databases		Group	n/a	n/a	
×,	datacenter1_hosts		Group	n/a	n/a	
N						Cancel Select

Figure 3–16 Select groups

Locate the Select button.

9. Click Select.

Figure 3–17 Click Select

earch	and Add: Targets					Cancel Sele
earch						
Target Ty	ype Group	T				
arget Na	ime					
On H	lost					
	Go					
Select All	Select None					
Select N	lame 📥		Туре	Host	Status	
🖉 d	latacenter1_databases		Group	n/a	n/a	
🖌 d	latacenter1_hosts		Group	n/a	n/a	

The Search and Add: Targets page closes and the Create Role *role_name*: Target Privileges page refreshes. You should now see your selected groups in the Target Privileges table. In the Target Privileges table, locate the row that contains your TimesTen target group. In the TimesTen target group row, locate the pencil button in the Manage Target Privilege Grants column.

10. In the TimesTen target group row, click the **pencil** button in the Manage Target Privilege Grants column.

Figure 3–18 Manage target privilege grants

Target Privileges

Select targets and grant privileges on those targets explicitly. Any Administrator granted with this role will have these target privileges Use "Grant to All" button to assign privileges to all targets. Use "Grant to Selected" button to assign privileges to multiple targets. Privileges for the selected targets will be replaced by the batch settings. To edit individual privileges use the "Edit" icon.

Name	т	All target types	▼ Go Clear		
Remov	ve Grant to Selected Add Grant to All	Advanced Privilege Settings			
Select A	II Select None				
			Manage Target Privilege	Is Aggregate	Is Privilege Propagation
Select	Name	Туре	Grants	Target	Enabled
	datacenter1_databases	Group	View	Yes	Yes
	datacenter1_hosts	Group	View 2	Yes	Yes
			-		

Cancel Back Step 3 of 6 Next Review

The Create Role *role_name*: Target Privileges page refreshes. Locate the Target Privileges table.

The Target Privileges table contains all of the available Enterprise Manager privileges that you can assign to a group. Enterprise Manager Cloud Control has a variety of privileges, but only two privileges are important for TimesTen operations:

View

This privilege is needed to view TimesTen targets.

Operator

This privilege is needed for TimesTen target control operations. The operator privilege includes the view privilege.

Identify the Name of the privilege(s) that you want to assign to this role.

11. Select the check box of the row that identifies the **Name** of the privilege that you want to assign to this group. If you want to add multiple privileges, select the corresponding check box of any additional privilege.



	perties Roles	Target Privileges Resource Privileges	Administrators Review	
Create	e Role TimesTen	ı database administrators: Target P	rivileges	Cancel Continue
This gro		lege Propagation. This means if the Administrator i hat are added to the group.	s granted a privilege on the group, then he/she at	tomatically gets the
		t you want to grant to this Enterprise Manager adn lected on the previous page.	ninistrator. Target Privileges give the administrator	the right to perform
Search		Go Clear		
Select /	All Select None			
Select	Name	Description	Included Privileges	Applicable Target Types
	Group Administration	Ability to perform operations like Add/Remove member target from group, manage target privileges on group, customize charts and dashboard and delete the group.	Full	Group
	Full	Ability to do all operations on the target, including delete the target	Deploy Fusion Middleware Operator Connect Target	All Target Types
	View Resource Provider	Ability to view Resource Provider	View	Cloud Resource Provider
	Connect Target	Ability to connect and manage target	Connect Target Read-only	All Target Types
	Connect Target Read-only	Ability to connect to target in read-only mode	View	All Target Types
	Deploy Fusion Middleware	Ability to deploy Fusion Middleware components		All Target Types
₹ S	Operator	Ability to do normal administrative operations on the target, such as configure a blackout and edit the target properties	Manage Target Metrics Manage Template Collection Operations Execute Command Manage Target Compliance Configure Target Manage Target Events Manage Target Patch Operator Fusion Middleware Blackout Target View	All Target Types

Locate the Continue button in the upper right corner of the page.

12. Click Continue.

Cancel Continue





Select the Target Privileges that you want to grant to this Enterprise Manager administrator. Target Privileges give the administrator the right to perform particular actions on targets selected on the previous page.

.

Select	All Select None			
Select	Name	Description	Included Privileges	Applicable Target Types
	Group Administration	Ability to perform operations like Add/Remove member target from group, manage target privileges on group, customize charts and dashboard and delete the group.	Full	Group
	Full	Ability to do all operations on the target, including delete the target	Deploy Fusion Middleware Operator Connect Target	All Target Types
	View Resource Provider	Ability to view Resource Provider	View	Cloud Resource Provider
	Connect Target	Ability to connect and manage target	Connect Target Read-only	All Target Types
	Connect Target Read-only	Ability to connect to target in read-only mode	View	All Target Types
	Deploy Fusion Middleware	Ability to deploy Fusion Middleware components		All Target Types
۲	Operator	Ability to do normal administrative operations on the target, such as configure a blackout and edit the target properties	Manage Target Metrics Manage Template Collection Operations Execute Command Manage Target Compliance Configure Target Manage Target Events Manage Target Patch Operator Fusion Middleware Blackout Target View	All Target Types

The Create Role *role_name*: EM Resource Privileges page displays. In the Target Privileges table, locate the row that contains your host group. In the TimesTen target group row, locate the pencil button in the Manage Target Privilege Grants column.

13. In the host group row, click the **pencil** button in the Manage Target Privilege Grants column.

Figure 3–21 Manage target privilege grants

Target Privileges

Select targets and grant privileges on those targets explicitly. Any Administrator granted with this role will have these target privileges Use "Grant to All" button to assign privileges to all targets. Use "Grant to Selected" button to assign privileges to multiple targets. Privileges for the selected targets will be replaced by the batch settings. To edit individual privileges use the "Edit" icon.

Name	Т	/pe All target types	▼ Go Clear		
Remov	Grant to Selected Add Grant to All	Advanced Privilege Settings			
Select A	All Select None				
Select	Name	Туре	Manage Target Privilege Grants	Is Aggregate Target	Is Privilege Propagation Enabled
	datacenter1_databases	Group	Operator 🥖	Yes	Yes
	datacenter1_hosts	Group	View 🔥	Yes	Yes
			Cancel	Back Step 3 of	6 Ne <u>x</u> t Review

The Create Role *role_name*: Target Privileges page refreshes. Locate the Target Privileges table.

The Target Privileges table contains all of the available Enterprise Manager privileges that you can assign to a group. Enterprise Manager Cloud Control has a variety of privileges, but only two privileges are important for host operations:

View

This privilege is needed to view Enterprise Manager host.

Execute Command

This privilege is needed for TimesTen targets to execute operating system commands on a host. The Execute Command privilege is required to control the TimesTen agents, TimesTen database, and TimesTen server, and load and unload the TimesTen database from memory.

Identify the Name of the privilege(s) that you want to assign to this role.

14. Select the check box of the row that identifies the **Name** of the privilege that you want to assign to this group. If you want to add multiple privileges, select the corresponding check box of any additional privilege.

and the	Execute Command	Execute any OS Command	View	Host
	Manage Target Compliance	Ability to manage compliance of the target		All Target Types
	Execute Command as Agent	Execute any OS Command as the Agent User	View	Agent
	Put File as Agent	Put any File to the Agent's Filesystem as the Agent User	View	Agent
•	View	Ability to view properties, inventory and monitor information about a target		All Target Types
	Ability to view Fusion Middleware Logs	Ability to view Fusion Middleware logs data		All Target Types
	Process Control Fusion Middleware Target	Ability to start or shutdown Fusion Middleware target		All Target Types
	Operator Fusion Middleware	Ability to perform operations, such as start and shutdown and view logs for Fusion Middleware targets	Ability to view Fusion Middleware Logs Process Control Fusion Middleware Target	All Target Types
	Manage Template Collection Operations	Ability to associate a template collection to a administration group and Sync targets with the associated template collections.	Manage Target Metrics Manage Target Compliance	Group

Figure 3–22 Select privileges

Cancel Continue

Locate the Continue button in the bottom right corner of the page.

15. Click **Continue**.

	Execute Command	Execute any OS Command	View	Host
	Manage Target Compliance	Ability to manage compliance of the target		All Target Type
	Execute Command as Agent	Execute any OS Command as the Agent User	View	Agent
	Put File as Agent	Put any File to the Agent's Filesystem as the Agent User	View	Agent
•	View	Ability to view properties, inventory and monitor information about a target		All Target Type
	Ability to view Fusion Middleware Logs	Ability to view Fusion Middleware logs data		All Target Type
	Process Control Fusion Middleware Target	Ability to start or shutdown Fusion Middleware target		All Target Type
	Operator Fusion Middleware	Ability to perform operations, such as start and shutdown and view logs for Fusion Middleware targets	Ability to view Fusion Middleware Logs Process Control Fusion Middleware Target	All Target Type
	Manage Template Collection Operations	Ability to associate a template collection to a administration group and Sync targets with the associated template collections.	Manage Target Metrics Manage Target Compliance	Group

Figure 3–23 Click Continue

The Create Role *role_name*: Target Privileges page displays. Locate the Next button in the upper right corner of the page.

16. Click Next.

Figure 3–24 Click Next

)	
Prop	perties Role	s Target Privileges	Resource Privileges Adminis	trators Review	
Privile	ges applica	ble to all targets	ninistrators: Target Privileg	Cancel Back Step 3 of 6	Next Review
Select	Name		Description	Included Privileges	Applicable Target Types
	Use any Beacor	1	Use any Beacon on any monitored host to monitor transactions, URLs, and network components. Beacon is installed with the Oracle Agent.		All Target Types
	Connect to any	viewable target	Ability to connect and manage any of the viewable target		All Target Types
	Add any Target		Add any target in Enterprise Manager	Create any user defined aggregate	All Target Types
	Full any Target		Ability to perform all administrative operations on all the targets, that includes target deletion	Operator any Target	All Target Types
	Create any use	r defined aggregate	Ability to create any user defined aggregate targets		All Target Types
	View all Java Se	ervice targets	Ability to view all Java Service targets		Oracle WebLogic Domain

The Create Role *role_name*: EM Resource Privileges page displays. Locate the resource type list.

17. In the resource type list, locate the row that contains Job System as identified by the Resource Type Column. Click the **pencil** button in the Manage Privilege Grants column.

Fusion Middleware Offline Diagnostics	Fusion Middleware Offline Diagnostics Security Class	-	NA	1
JVM Diagnostics	JVM Diagnostics allows users to monitor any java target	-	NA	1
Job System	Job is a unit of work that may be scheduled that an administrator defines to automate the commonly run tasks	-	-	5
Linux Patching	A feature in Cloud Control that helps in keeping the hosts in an enterprise updated with security fixes and critical bug fixes, especially in a data center or a server farm.	-	NA	/
Metric Extensions	Metric Extensions allows extending monitoring for a target type by adding new metrics	-	-	1
Named Credential	Credentials to perform Enterprise Manager Administrative Operations	-	NA	1

Figure 3–25 Click the pencil button

The Create Role *role_name*: Manage Privileges: Job System page displays. Locate the Resource Type Privileges table.

18. Select the check box of the row that identifies the **Create** privilege.

Figure 3–26 Select the check box

Prop	perties Roles	Target Privileges	Resource Privileges	Administrators	Review	
Create	e Role TimesTen	ı database adı	ninistrators: Manag	e Privileges : J	ob System	
						Cancel Continue
	rce Type Privile	ges				
Resource	Type privilege grants	the access to the R	ole on all the Resources of th	at type		
		the access to the R	ole on all the Resources of th	at type		
	All Select None	the access to the R	ole on all the Resources of th Description	at type		
Select /	All Select None					
Select /	All Select None Name	onfiguration	Description	re configuration.	jobs to other adn	ninistrators.

Locate the Continue button in the upper right corner of the page.

19. Click **Continue**.

rigui	e 3–27 Click Commune	
	o <u> o o o o </u>	
Pro	perties Roles Target Privileges	Resource Privileges Administrators Review
Create	e Role TimesTen database adm	iinistrators: Manage Privileges : Job System
		Cancel Continue
	rce Type Privileges	h3
Resource	e Type privilege grants the access to the Ro	e on all the Resources of that type
Select	All Select None	
Select	Name	Description
	Edit any procedure configuration	Ability to edit any procedure configuration.
	Manage View Access	Ability to grant and revoke the view access on jobs to other administrators.
	Create	Ability to submit jobs, create library jobs, create deployment procedure instance and create deployment procedure configuration.

Figure 3–27 Click Continue

The Create Role *role_name*: EM Resource Privileges page displays. Locate the Next button in the upper right corner of the page.

20. Click Next.

Properties Roles	Target Privileges Resource	e Privileges Administrator	s Review	
	Ten database administrator types in the list below, identify specific p int	Cancel E	Back Step 4 of 6 N	3
esource Type	Description	Privilege Grants Applicable to all Resources	Number of Resources with Privilege Grants	Manage Privilege Grants
ccess	Defines the access to different application in Enterprise Manager Cloud Control	-	NA	/
pplication Data Model	Application Data Model maintains sensitive data types and their associated columns in a database.	NA	-	/
pplication Performance lanagement	Application Performance Management allows users to manage business application service targets	-	NA	1
pplication Replay ntities	Application Replay Entities include captures, replay tasks, and replays.	-	NA	1
ackup Configurations	Security Class for System Backup/Recovery Manager.	-	-	1
ackup Status Report	Security Class for System Backup/Recovery status report.	-	-	I
Change Activity Plan	Change Activity Plan enables the ability to define and manage manual and automated tasks distributed across target owners specified within	-	NA	1

The Create Role *role_name*: Administrators page displays. Locate the Next button in the upper right corner of the page.

- 21. Click Next.
- Figure 3–29 Click Next



The Create Role *role_name*: Review page displays. In the Properties region, verify the role name is correct. Also, verify that the correct privileges are in the Privileges applicable to all targets table. Locate the Finish button in the upper right corner of the page.

22. Click Finish.

Figure 3–30 Click Finish

«					
Previous Administra	tors Re	view			
Create Role TimesTe	n databa	se admini	strators: Review	Ca	ncel Back Step 6 of 6 Finis
Properties					
Name TimesTen database No description is defined fo External Role NO Private Role No Created By SYSMAN		rs			
Roles					
Name		Description			
No roles are granted.					
Target Privileges					
Privileges applicable to a	ll targets				
Name		Description			
No target resource type priv granted	ileges are				
Target Privileges					
Name	Туре		Manage Target Privilege Grants	Manage Aggregate Only Privilege Grants	Manage Member Only Privilege Grants
datacenter1_databases	Group	1	Operator	NONE	NONE
datacenter1_hosts	Group		Execute Command, View	NONE	NONE

The Security Roles page displays with a confirmation message that indicates that you successfully created the Enterprise Manager role.

Figure 3–31 Role creation confirmation

Confirmation Role TimesTen database administrators was created successfully

You are now ready to create an Enterprise Manager user.

Creating users

Create a user that can control and view your TimesTen targets.

1. From the **Setup**, select **Security**, then select **Administrators**.

Figure 3–32 Select Administrators

	Setup 🗸 SYSMAN 🗸	С
Search Target Name	Add Target	+
	Extensibility	
	Proxy Settings	+
Security Console	Security	•
Administrators	Incidents	•
Roles 😽	Notifications	•
Named Credentials	Provisioning and Patching	•
Preferred Credentials	My Oracle Support	•
Monitoring Credentials	Middleware Management	•
Privilege Delegation	Manage Cloud Control	•
Registration Passwords	Command Line Interface	
Audit Data	Management Packs	•

The Security Administrators page displays. Locate the Create button above the group table.

2. Click Create.

Figure 3–33 Click Create

			F	age Refreshed Jul 15, 2014 1:21:11 PM PDT 🕻
	istrators			
			n to Enterprise Manager to perf leges and roles assigned to the	form management tasks. The breadth of management
isks ava	aliable in Enterprise Manag	er depends on the privi	leges and roles assigned to the	administrators.
earch		Go		
Creat	e Like View Edit Deleti	create		
Creat Select		Create Access	Authentication Type	Description
			Authentication Type Repository	Description Cloud Software Library User (Internal)
Select	Name	Access		

The Create Administrator: Properties page displays. You are now ready to enter the Enterprise Manager user properties. The first property is the user name.

In the *Name text field, you define the user name. Choose a name that is a meaningful identifier. (For example, terry.)

- 3. In the *Name text field, type the user name.
- 4. In the ***Password** text field, type the password for the user.
- 5. In the *Confirm Password text field, re-type the password.

Locate the Next button in the upper right corner of the page.

6. Click Next.

Figure 3–34 Click Next

	D		(
Properties Ro	oles Target Privileges	Resource P	rivileges Re	view	
Create Administra	tor: Properties				
					Cancel Step 1 of 5 Next Review
* Name	terry				20
* Password	•••••				
* Confirm Password	••••				
Password Profile	DEFAULT	 Vie 	w Manage Profile	es	
	You can create additional password	profile using	database admin pag	es	
	Prevent password change				
	When checked, administrator is not	allowed to ch	ange his/her own pa	ssword.	
	Expire password now		and the state of the state		ninistrator will be forced to change password.
E-mail Address	when selected, administrator accour	nt Will be crea	ited with expired star	te, On next login, adr	ninistrator will be forced to change password.
E-mail Address	Construction of a labor			*	
	create a default 24x7 notification sc	es separated hedule for this	by a comma or spac Administrator,	e. If you are enterin	g these for the first time, they will be used to
Contact					
Location					
Department					
Cost Center					
Line of Business					
Description]
				/.	3
	Super Administrator				

Cancel Step 1 of 5 Next Review

The Create Administrator *username*: Roles page displays. You are now ready to assign a role to your user.

7. In the Available Roles list, locate the row that contains your TimesTen role. Double click **the role name**. If you want to assign multiple roles, double click the corresponding role name of any additional roles.

Figure 3–35 Assign a role



Locate the Next button in the upper right corner of the page.

8. Click Next.

Figure 3–36 Click Next



The Create Administrator *username*: Target Privileges page displays. Locate the Next button in the upper right corner of the page.

9. Click Next.

Figu	re 3–37 Click Next			
Creat Privile	perties Roles Target Privileges e Administrator terry: Target P eges applicable to all targets he Privileges that you want to grant to this E particular management actions on a class o	Privileges	Cancel Back Step 3 of 5 e Privileges give the administrator t	
Select	Name	Description	Included Privileges	Applicable Target Types
	Use any Beacon	Use any Beacon on any monitored host to monitor transactions, URLs, and network components. Beacon is installed with the Oracle Agent.		All Target Types
	Connect to any viewable target	Ability to connect and manage any of the viewable target		All Target Types
	Add any Target	Add any target in Enterprise Manager	Create any user defined aggregate	All Target Types
	Full any Target	Ability to perform all administrative operations on all the targets, that includes target deletion	Operator any Target	All Target Types
	Create any user defined aggregate	Ability to create any user defined aggregate targets		All Target Types

The Create Administrator *username*: EM Resource Privileges page displays. Locate the Next button in the upper right corner of the page.

10. Click Next.





The Create Administrator *username*: Review page displays. In the Properties region, verify that the user name is correct. Also, verify that the correct roles are in the Roles table. Locate the Finish button in the upper right corner of the page.

11. Click Finish.

				-		
Properties Roles	Target Pri	vilagos	Resource Privileges	Review		
reate Administra		-	Resource Privileges	Review		
					Car	cel Back Step 5 of 5 Fini
roperties						
N	ame terry					
	rofile DEFAULT					
Prevent password ch	ange No					
Expire password	now No					
E-mail Add	ress No Email	iddress is def	ined for this administrator.			
Co	ntact					
Loc	ation					
Depart	ment					
Cost Co	enter					
Line of Bus	ness					
Descri	ption					
Super Administ	rator No					
oles						
Name		Descriptio	n			
M_USER		Role has	privilege to access Ente	rprise Manager Appli	ication	
UBLIC			ble is granted to all adm that need to be grante			ed at site level to group
IMESTEN DATABASE AI	MINISTRATOR:	6				
arget Privileges						
arget Frivileges						
Privileges applicable	to all targets					
Name		Descriptio	n			
lo target resource type granted	privileges are					
Target Privileges						
lame	Туре		Manage Target Pri Grants	vilege Manage Ag Privilege G	gregate Only	Manage Member Only Privilege Grants

The Security Administrators page displays with a confirmation message that indicates that you successfully created the Enterprise Manager user.

Figure 3–40 User creation confirmation



You have successfully created an Enterprise Manager user that can view and control TimesTen targets.

Granting preferred credentials to users

Enterprise Manager enables you to grant a user access to preferred credentials that you created for a target with the SYSMAN user. Target preferred credentials are required to perform several operations on TimesTen targets. Ensure that you have set preferred credentials for the SYSMAN user before proceeding with this section. For more information, see "Setting preferred credentials for a target" on page 1-34.

To grant a user access to preferred credentials, ensure that you are on the Oracle Enterprise Manager Cloud Control home page and are logged in as user SYSMAN.

1. From the **Setup** menu, select **Security**, then select **Named Credentials**.

	Setup 👻 👥 SYSMAN 👻	\subset
Search Target Name	Add Target	►
	Extensibility	×
	Proxy Settings	۲
Security Console	Security	×
Administrators	Incidents	×
Roles	Notifications	F
Named Credentials	Provisioning and Patching	×
Preferred Credentials	My Oracle Support	►
Monitoring Credentials	Middleware Management	►
Privilege Delegation	Manage Cloud Control	F
Registration Passwords	Command Line Interface	
Audit Data	Management Packs	×

Figure 3–41 Select Named Credentials

The Security Named Credentials page displays. Locate the credential name in the Credential Name column.

2. Click the credential name.

Figure 3–42 Select credential name

Security			🕑 Page	Page Refreshed Jan 21, 2015 8:48:34 AM PST (
Named Crede	entials						
given to you. Maximum 2000 cree	dentials will be shown	Click on Query	by Example icon			r which explicit grant i	
Credential Name	e 🔺		Authenticating Target Type	Credential Type	Target Name	Target Username	
ORACLE_DB_CR	EDENTIALS	SYSMAN	Database Inst	Database Crede		sys	
TT1122_CREDE	NTIALS	SYSMAN	Host	Host Credentials	testhost.tt1122	instadmin	
TT1122_SAMPL	EDB_1122_CREDENTI	ALS SYSMAN	Host	Host Credentials	testhost.tt1122.sample	instadmin	
		5					

You are now ready to grant the preferred credentials to a user. Locate the Manage Access button.

3. Click Manage Access.

Figure 3–43 Click Manage Access

ecurity				🕑 🛛 Page	Page Refreshed Jan 21, 2015 8:48:34 AM PST			
Named	Credentials							
given to you	re the list of named cr u. 000 credentials will be I Create / Ed	shown. Clic		by Example icon t	to search appropriat	e credential.		r which explicit gran
			lage Access	V 🗡 Delete 🦉	🔊 Test 🛛 🐼 View R	eferences		
Credent	ial Name		-	Authenticating Target Type	Credential Type	eferences Target Name		Target Username
	ial Name		Credential	Authenticating				Target Username sys
ORACLE			Credont al Owner	Authenticating Target Type	Credential Type			-

The Security Manage Access: *credential_name* page displays. Locate the Add Grant button in the Access Control region.

4. Click Add Grant.

Figure 3–44 Click Add Grant

Security			Page Refreshed Jan 21, 2015	9:13:31 AM PST 💍
lamed Credentials >	Manage Access			
	_	EDB_1122_CREDENTIAL	.5	Save Cancel
Owner SYSMAN	Change			
Grantee Click on 'Add Grant'			ers. Click on 'Change Privilege' to edit p	rivilege for user(s).
		Privileges		
Grantee No access policy to	display.	Thinges		

The Search and Select - Roles - Oracle Enterprise Manager dialog displays.

5. In the dialog, locate the row that contains the correct user name. Click **in this row** and click **Select**.

Figure 3–45 Select user name

Search		
Name		
Go	Clear	
Name	Ту	Description
OPER		
EMSSA_ADMIN		
PLUGIN_USER		
DESIGNER		
INFRA_ADMIN		
TERRY		
EMCLOUD_ADMIN		
PLUGIN_OMS_ADMIN		
TESTSUPERADMIN		
PLUGIN_AGENT_ADMIN		
PROV_DESIGNER		
VIEWER		
CLOUD_SWLIB_USER		Cloud Software Library User (Internal)
EMUSER_ADMIN		
PROV_OPERATOR		
		Select

The Search and Select - Roles - Oracle Enterprise Manager dialog closes and the Security Manager Access: *credential_name* page refreshes. You should see your selected user name in the table in the Access Control region. Locate the Save button in the upper right corner of the page.

6. Click Save.

Figure 3–46 Click Save

Security		Page Refreshed Jan 22, 201	5 1:56:24 PM PST 💍	
Named Credentials > Ma	nage Access			
-	TT1122_SAMPI	EDB_1122_CREDENTI	ALS	Save
Access Control Grantee Click on 'Add Grant' to	add users. Click on 'Re	Search Clear	users. Click on 'Change Privilege' to edit	nrivilege for user(s).
	Change Privilege(s)			
Grantee	Grantee Type	Privileges		
TERRY	Administrator	View Credential		

The Security Named Credentials page displays. Repeat steps 1-6 to grant access to additional preferred credentials to users.

7. To enable preferred credentials on an Enterprise Manager user account, logon to Enterprise Manager using the user credentials. Then, follow the instructions in "Setting preferred credentials for a target" on page 1-34 and assign the existing named credentials as noted in step 6.

You have successfully granted a user access to preferred credentials of a SYSMAN user target.

Working with the TimesTen Instance Home Page

This chapter describes the TimesTen instance home page. The home page conveys high level information about the TimesTen instance.

Topics include:

- Viewing the TimesTen instance home page
- Analyzing information on the TimesTen instance home page

Viewing the TimesTen instance home page

To view the home page, ensure that you are on the TimesTen instance target page. For information on navigating to the TimesTen instance target page, see "Navigating to the TimesTen target page" on page 2-1.

From the TimesTen Instance Home menu, select Home.

The TimesTen home page displays.

Analyzing information on the TimesTen instance home page

The TimesTen instance home page consists of four regions each of which has been customized specifically for TimesTen instance targets.

The four home page regions described in detail include:

- Instance summary
- Daemon status
- Server status
- Hosted databases

Instance summary

Figure 4–1 Instance summary region

Instance Summary							
tt1122	[Details					
11.2.2.7.0							
testhost							
instadmin							
	tt1122 11.2.2.7.0 testhost	tt1122 11.2.2.7.0 testhost					

This region shows information about your TimesTen instance target:

Instance

The name of your current TimesTen instance.

Version

The version of your current TimesTen instance.

Hostname

The name of the host where TimesTen is running. This is a link that lets you view the host target page.

Administrator

The operating system username of the TimesTen instance administrator.

Click the **Details** button to view additional details about your TimesTen instance. The TimesTen instance target needs preferred credentials to display additional instance details. For more information on setting preferred credentials, see "Setting preferred credentials for a target" on page 1-34. The detailed instance information dialog displays the output of the ttVersion -m utility. For more information on the ttVersion utility and its output, see "ttVersion" in the *Oracle TimesTen In-Memory Database Reference*.

Daemon status

Figure 4–2 Daemon status region

Daemon Status						
Daemon Status	Up 🏠					
Port	12345					
Process ID	22693					

This region shows information about the TimesTen daemon:

Daemon status

This value can be either Up or Down. The TimesTen daemon need to be Up to use the TimesTen instance and TimesTen database. For more information on how to start and stop the TimesTen daemon, see "Start/stop services" on page 9-1.

Port

The port number on which the TimesTen daemon listens. If this port number causes conflicts with another application, consider using the ttmodinstall -port utility to modify the TimesTen daemon port number. For more information, see "ttmodinstall" in the *Oracle TimesTen In-Memory Database Reference*.

Process ID

The process identifier of the TimesTen daemon process.

Server status

Figure 4–3 Server status region

Server Statu	IS
Server Status	Up 👚
Port	53397
Process ID	22702

This region shows information about the TimesTen server:

Server status

This value can be either Up or Down. The TimesTen server need to be Up for TimesTen databases that belong to this TimesTen instance to accept client/server connections. For more information on how to start and stop the TimesTen server, see "Start/stop services" on page 9-1.

Port

The port number on which the TimesTen server listens. If this port number causes conflict with another application, consider modifying the TimesTen server port number. For more information, see "Modifying the TimesTen Server options" in the *Oracle TimesTen In-Memory Database Operations Guide*.

Process ID

The process identifier of the TimesTen server process.

Hosted databases

Figure 4–4 Hosted databases region

Hosted Data	bases				
View 👻 🛛 Deta	ils 🛃 Detach				
Database	Total Connections	Client Server Connections	RAM Status	Cache Agent	Replication Agent
sampledb 1122	11	0	Loaded	Up	Up

This region shows the databases that are part of your TimesTen instance in a table format. This information is useful in determining the status of all of the databases associated with this TimesTen instance.

A description of each column follows:

Database

This value is taken from the last part of the path to the datastore. For example, if the path to the datastore is /var/tt/sampledb_1122, the database name is sampledb_1122.

If the database is a TimesTen database target you can click the database name to open the home page of the TimesTen database target. For more information on the TimesTen database home page, see "Working with the TimesTen Instance Home Page" on page 4-1.

Total Connections

The total number of direct linked and client/server connections to the database.

Client Server Connections

The number of client/server connections to the database.

RAM Status

This value can be either Loaded or Not loaded. The RAM status is Loaded if the database is loaded into memory.

Cache Agent

This value can be either Up, Down, or N/A. If you have not configured a cache group, then this value is N/A. The Cache Agent is used for read or write caching of data in an Oracle 11*g* or 12*c* database. For more information, on how to start and stop the cache agent, see "Start/stop agents" on page 10-1.

Replication Agent

This value can be either Up, Down, or N/A. If you have not configured a replication scheme, then this value is N/A. TimesTen uses the Replication Agent to either replicate data between TimesTen databases or to asynchronously write data to an Oracle 11g or 12c database. For more information, on how to start and stop the cache agent, see "Start/stop agents" on page 10-1.

PLSQL

This value can be either Enabled or Disabled. Once PL/SQL support is enabled in a database, you cannot disable it later. For more information, see "PLSQL" in the *Oracle TimesTen In-Memory Database Reference*. By default, this column is hidden. To enable this column, click the **View** button, then **Columns**, and then click the **PLSQL** option.

In addition, you can select a row and click **Details** to view all of the connections to a certain database. If you click **Details**, a **Current Connections** dialog opens showing the connections to the database. The Current Connections dialog displays the connection output of the ttStatus *DSN* utility. For more information on the ttStatus utility and its output, see "ttStatus" in the *Oracle TimesTen In-Memory Database Reference*.

Working with the TimesTen Database Home Page

This chapter describes the TimesTen database home page. The TimesTen database home page conveys high level configuration and performance information about your TimesTen database.

Topics include:

- Viewing the TimesTen home page
- Analyzing information on the TimesTen home page

Viewing the TimesTen home page

To view the home page, ensure that you are on the TimesTen database target page. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

From the TimesTen Database Home menu, select Home.

The TimesTen database home page displays.

Analyzing information on the TimesTen home page

The TimesTen home page consists of three regions each of which has been customized specifically for TimesTen database targets.

The three home page regions described in detail include:

- Status and Summary
- Performance Overview and Issues
- SQL Execution Time and Monitor

Status and Summary

The Status and Summary region consists of three subregions:

- Summary
- Status
- Configuration

Summary

Figure 5–1 Summary region

```
Summary
Database Name Sampledb_1122
Instance Name tt1122
TimesTen Version 11.2.2.7
Hostname testhoot
Oracle Net Service Name oradehoost/oracledb
```

This region shows information about your TimesTen target:

Database name

This value is taken from the last part of the path to the database. For example, if the path to the database is /var/tt/sampledb_1122, the database name is sampledb_1122.

Instance name

The name of your current TimesTen instance. This is a link that lets you view the TimesTen instance target page.

TimesTen version

The version of your current TimesTen instance.

Hostname

The name of the host where TimesTen is running. This is a link that lets you view the host target page.

Oracle Net Service Name

The service name of the Oracle database used for cache and to load data from an Oracle database into the TimesTen database. If you have not configured the Oracle Net Service Name, then this value is Not Specified.

Status

Figure 5–2 Status region

Status	
TimesTen Server	Up 👚
Cache Agent	Up 👚
Replication Agent	Up 👚
Loaded Since	June 24, 2014 10:39 AM

This region shows status information including:

TimesTen Server

This value can be either Up or Down. The TimesTen Server is the listener process that enables client/server connections to the database. For more information on how to start and stop the TimesTen server, see "Start/stop services" on page 9-1.

Cache Agent

This value can be either Up or Down. If you have not configured a cache group, then this value is Down. The Cache Agent is used for read or write caching of data in an Oracle database. For more information, on how to start and stop the cache agent, see "Start/stop agents" on page 10-1.

Replication Agent

This value can be either Up or Down. If you have not configured a replication scheme, then this value is Down. TimesTen uses the Replication Agent to either replicate data between TimesTen databases or to asynchronously write data to an Oracle database. For more information, on how to start and stop the replication agent, see "Start/stop agents" on page 10-1.

Loaded Since

The date and time when the database was loaded into memory.

Configuration

Figure 5–3 Configuration region

```
✓ Configuration

Allocated PERM Space (GB) 0.039

Allocated TEMP Space (MB) 32

Internal Log Buffer Size (MB) 64

PL/SQL Memory Segment Size (MB) 32
```

This region shows configuration information specific to your database. These attributes are first connection attributes and the values are set at first connect. For more information on first connection attributes, see "Connection Attributes" in the *Oracle TimesTen In-Memory Database Reference*.

- Allocated PERM Space
- Allocated TEMP Space
- Internal Log Buffer Size
- PL/SQL Memory Segment Size

Performance Overview and Issues

The Performance Overview and Issues region consists of two tabs:

- Performance Overview
- Issues

Performance Overview

The Performance Overview region consists of three subregions:

- Database Usage (%)
- Database Connections
- Free Space (%)

Database Usage (%)

Figure 5–4 Database Usage region



This region uses a line graphs to show permanent and temporary space currently in use. The values are expressed as a percentage of what was configured at database first connect. For information on the configured values, see the Summary, Status, and Configuration regions.

The X-Axis represents time. The Y-Axis represents the percent of permanent space in use and the percent of temporary space in use.

High database usage may indicate the need to grow the database by allocating more permanent or temporary space.

Database Connections



Figure 5–5 Database connections region

This region uses a line graph to show the number of direct linked connections and client/server connections. These line graphs change according to time to show not only the current value but also the values collected in recent metric collections.

The X-Axis represents time. The Y-Axis represents the number of current direct linked connections and the number of client/server connections. These connections do not include subdaemon connections or connections created by the TimesTen plug-in to collect configuration and performance data.

Free Space (%)

Figure 5–6 Free Space region



This region uses a graph to show the free space in the file systems where the checkpoint and transaction log files are currently located.

The X-Axis represents time. The Y-Axis represents the free space in the checkpoint file system and the free space in the transaction log file system. If you configured the checkpoint and transaction log files in the same file system and path, the two lines will be on top of each other and you will see one line.

A very low percentage of free disk available may indicate a need to install a larger disk.

Issues



Performance Overview	Issues					
View 👻 Category	All	• 🔘 0	🙆 o 🔔 o 🚦	► o		
Summary	Target	Severity	Status	Escalation Level	Туре	Time Since Last Update
No matching incidents or	problems found					
Columns Hidden 14						Updated in the last 31 days

This region displays alerts that have exceeded either warning or error thresholds.

SQL Execution Time and Monitor

The SQL Execution Time and Monitor consists of two tabs.

- SQL Monitor
- SQL Execution Time Histogram

SQL Monitor

SQL Monitor	SQL Exe	ecution Time	e Histogram					
View 👻	Exclu Syst		tatistics	😽 🛃 De	tach			
Command ID	Execution Count	Prepare Count	Reprepare count	Last Execution Start	Last Execution Time (s)	Maximum Execution Time (s)	Owner	SQL Statement
392784632	600000	1	0	Nov 17, 20	0.0	0.33	APPUSER	UPDATE UPDATE_TABLE SET I2= ? WH
319389232	440133	1	0	Nov 17, 20	0.0	0.14	SYS	select u.user#, u.password, u.identificat
319393832	234625	1	0	Nov 17, 20	0.0	0.104	SYS	select 1 from sys.sysauth\$ s where (s.g
392782360	100000	1	0	Nov 17, 20	0.0	0.152	APPUSER	INSERT INTO UPDATE_TABLE VALUES(
394387848	87578	87578	0	Nov 17, 20	0.0	0.112	APPUSER	call ttconfiguration
394389736	74426	74426	0	Nov 17, 20	0.0	0.105	APPUSER	call ttckpthistory
394394904	72969	72969	0	Nov 17, 20	0.0	0.111	APPUSER	call ttsqlcmdcacheinfo()
394386056	72969	72969	0	Nov 17, 20	0.0	0.112	APPUSER	call ttplsqlmemorystats
394383688	72969	72969	0	Nov 17, 20	0.0	0.11	APPUSER	select * from sys.systemstats
394329200	72969	72969	0	Nov 17, 20	0.0	0.11	APPUSER	select time_of_1st_connect,ds_connects
393984288	72969	72969	0	Nov 17, 20	0.0	0.109	APPUSER	select -count(*) from sys.cache_group u

Figure 5–8 SQL Monitor region

This regions shows the top SQL statements in the SQL command cache expressed in table format. This information is useful in analyzing your queries. It may be useful to sort by the number of executions to see the SQL statements that are most executed. It may also be useful to exclude system SQL commands by clicking in the box to the left of **Exclude System**.

As you review the top executions, look at the values in the Prepare Count column. If the SQL query is not prepared, then you should prepare the query. For optimal performance, a SQL statement should be prepared once and executed many times. If the number of prepares for a SQL statement is large then verify if your application can be enhanced to minimize the number of prepares per SQL statement.

Click the **Statistics** button at the top of the table to view the number of cached commands and the current space allocated to store cached commands. This information is derived from the output values of the ttSQLCmdCacheInfo2 built-in procedure. For more information about the ttSQLCmdCacheInfo2 built-in procedure, see "ttSQLCmdCacheInfo2" in the *Oracle TimesTen In-Memory Database Reference*.

Click the **Query By Example** at the top of the table to enable query fields for the Owner and SQL Statement columns.

In addition, you can review the queries in the SQL Statement column. You can copy and paste this SQL query into the worksheet in SQL Developer and review the results from **Explain Plan**. You can also paste the SQL query into ttIsql and look at the showplan for the query. This may give you a better understanding of how and why your queries are performing as they are.

You can also click the column header to sort the table based on the column. A description of each column follows:

Note: The columns are sorted based on the rows that are currently loaded in the SQL Monitor table. To sort the table based on all the rows from the ttSQLCmdCacheInfo2 built-in procedure, ensure that you are viewing data in Real Time. For more information on viewing data in Real Time, see "View data" on page 2-5.

Command ID

A unique identifier for the SQL command. The TimesTen database generates this number.

Execution Count
A counter for the number of executions that took place on this command since it was brought into the command cache.

Prepare Count

A counter for the number of prepares for a SQL statement.

Reprepare count

A counter of the number of reprepares.

Last Execution Time (s)

The last execution time for a SQL statement.

Maximum Execution Time (s)

The maximum execution time for a SQL statement.

Owner

The identifier of the user who created the command.

SQL Statement

The SQL text.

SQL Execution Time Histogram



Figure 5–9 SQL Execution Time Histogram region

This region shows a histogram with the number of SQL commands that have been executed since command cache sampling has been enabled. The histogram is populated with output of the ttSQLExecutionTimeHistogram built-in procedure. For more information on the ttSQLExecutionTimeHistogram built-in procedure, see "ttSQLExecutionTimeHistogram" in the Oracle TimesTen In-Memory Database Reference.

The histogram is populated when the TimesTen database is configured to take sample SQL command cache. To enable TimesTen to take sample SQL command caches, call the ttStatsConfig built-in procedure with the SQLCmdSampleFactor parameter set to a value that is between 0 and 60000. For more information about the ttStatsConfig built-in procedure, see "ttStatsConfig" in the *Oracle TimesTen In-Memory Database Reference*.

For example, call the ttStatsConfig built-in procedure with the following parameters and values to enable command cache sampling for every single SQL command:

```
Command> call ttStatsConfig('SqlCmdSampleFactor',1);
< SQLCMDSAMPLEFACTOR, 1 >
1 row found.
```

The histogram has the following fixed interval times:

- 0 seconds to .00001562 seconds
- .00001562 seconds to .000125 seconds
- .0000125 seconds to .001 seconds
- .001 seconds to .008 seconds
- .008 seconds to .064 seconds
- .064 seconds to .512 seconds
- .512 seconds to 4.096 seconds
- 4.096 seconds to 32.768 seconds
- 32.768 seconds to 262.144 seconds
- 262.144 seconds to 9.99999999E+125 seconds

To reset the SQL execution time histogram, call the ttStatsConfig built-in procedure with the SQLCmdHistogramReset parameter set to a value that is not 0. For more information about the ttStatsConfig built-in procedure, see "ttStatsConfig" in the *Oracle TimesTen In-Memory Database Reference*.

For example, call the ttStatsConfig built-in procedure with the following parameters and values to reset the SQL execution time histogram:

```
Command> call ttStatsConfig('SQLCmdHistogramReset',1);
```

- < SQLCMDHISTOGRAMRESET, 1 >
- 1 row found.

Working with the Performance Summary Page

This chapter describes the TimesTen performance summary page. The performance summary page displays performance specific information that has been customized for your TimesTen database targets.

Topics include:

- Viewing the performance summary page
- Analyzing information on the TimesTen performance summary page

Viewing the performance summary page

To view the performance summary page, ensure that you are on the TimesTen database target page. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

From the **TimesTen Database Home** menu, select **Monitoring**, then select **Performance Summary**.

Analyzing information on the TimesTen performance summary page

Figure 6–1 shows the seven performance specific areas that have been customized for your TimesTen database targets. Click a specific tab to view detailed performance information.



TimesTen Database Home
 Connections Statements Workload Commits and Rollbacks Locks Transaction Logs Checkpoints

A description of each area follows:

- Connections
- Statements
- Workload
- Commits and rollbacks
- Locks
- Transaction Logs

Checkpoints

Connections

The connections tab enables you to view information about database connections and disconnections. The connections tab contains one graph region:

Connects and disconnects

Connects and disconnects

Figure 6–2 Connects and disconnects region



The connects and disconnects rates region uses a line graph to show the number of connects and disconnect per minute.

The X-Axis represents time. The Y-Axis represents the number of connects and disconnects per minute. These numbers represent all connects and disconnects from applications and connections created by the TimesTen plug-in to collect configuration and performance data.

If you see a high rate of connects and disconnects, then investigate why you are seeing this high rate. You may consider modifying your applications to do connection pooling.

Statements

The statements tab enables you to compare and review the execution rates of your SQL statements. It is divided into four regions:

- Write rates
- Read rates
- Ratio of prepares to executes
- Break up of executed statement types

Write rates

Figure 6–3 Write Rates region



The write rates region uses a line graph to show the rate of INSERT, UPDATE, and DELETE statements executed per second.

Read rates

Figure 6–4 Read Rates region



The read rates region uses a line graph to show the rate of SELECT statements executed per second.

Ratio of prepares to executes



Figure 6–5 Ratio of Prepares to Executes region

The ratio of prepare to execute rates region uses a line graph to show the overall performance of the statements that are executing.

If SQL statements are prepared for every execute, the ratio of prepares to executes is equal to a value of 1.0. This type of ratio impacts performance. Preparing SQL statements is CPU intensive. Try to minimize the number of times your SQL statements are prepared. In your applications, consider using bind variables. You can then prepare your SQL statements once and then execute your SQL statements multiple times.

A value less than 1.0 means that there are more executes than prepares. When this occurs, the statements being executed are already in the SQL command cache and are already prepared. This results in less work that must be done to execute the statement.

Break up of executed statement types

The break up of executed statement types region displays information about executed statements. The region is divided into two sub-regions:

- Summary
- Detail

Summary

Figure 6–6 Summary sub-region

📕 Break U	p of Exe	t Types			
Summary	Detail				
Total Numb	er of Sta	tements Executed	1026243		
	Datal	base Loaded Since	January 29, 2015	12:48 P	М

The summary sub-region shows the total number of SQL statements that have been executed since the database has been loaded into memory. There is also a field that shows the date and time when the database was loaded into memory.

Detail



The detail sub-region has a pie chart that shows the types of SQL statements that have executed since your TimesTen database target was loaded into memory.

Workload

The workload tab shows the workload of your TimesTen target. The page is divided into two regions:

- Write workload
- Read workload
- Prepares and reprepares

Write workload





The write workload region uses a line graph to show the number of table rows deleted, inserted, and updated per minute.

The write workload region is populated when the TimesTen database is enabled to collect all database and operating system statistics. To enable TimesTen to collect all

database and operating system statistics, call the ttStatsConfig built-in procedure with the StatsLevel parameter set to ALL.

```
Command> call ttStatsConfig('StatsLevel','ALL');
< STATSLEVEL, ALL >
1 row found.
```

For more information about the ttStatsConfig built-in procedure, see "ttStatsConfig" in the Oracle TimesTen In-Memory Database Reference.

Read workload

Figure 6–9 Read Workload region



The read workload region uses a line graph to show the number of table rows read per minute.

The read workload region is populated when the TimesTen database is enabled to collect all database and operating system statistics. To enable TimesTen to collect all database and operating system statistics, execute the ttStatsConfig built-in procedure with the StatsLevel parameter set to ALL.

```
Command> call ttStatsConfig('StatsLevel','ALL');
< STATSLEVEL, ALL >
1 row found.
```

For more information about the ttStatsConfig built-in procedure, see "ttStatsConfig" in the Oracle TimesTen In-Memory Database Reference.

Prepares and reprepares



Figure 6–10 Prepares and reprepares

The prepares and reprepares region uses a line graph to show the number of commands prepared per minute and the number of commands reprepared per minute. If you see a high number of reprepared commands per minute, then this is an indication that there are invalidations occurring. This results in performance degradation.

In your applications, consider using bind variables and prepare your SQL statement once. You can then execute the SQL statement multiple times. If you do this, the number of commands prepared per minute should approach zero.

Commits and rollbacks

Figure 6–11 Commits and rollbacks region



The commits and rollbacks region uses a line graph to show the relationship between durably committed transactions, committed transactions, and rollbacks.

The X-Axis represents time. The Y-Axis represents the rate of transactions durably committed, non-durably committed, and rolled back per second.

Locks

The locks page shows information related to the performance of the locks and concurrent operations of your TimesTen database target. It contains three regions:

Locks and deadlocks

- Lock grants
- Percentage of acquired locks without wait

Locks and deadlocks

Figure 6–12 Locks and Deadlocks region



The locks and deadlocks region uses a line graph to show the rate of deadlocks per minute and the lock timeouts per minute.

The deadlock rate should be as low as possible. If you see a continued or growing rate of deadlocks, review the way in which your application acquires resources. If the deadlock rate is greater than zero, review the "Working with the Transaction Monitor" on page 7-1.

Lock timeouts per minute should be low. If the lock timeouts per minute is not low, then this is an indication there is contention for the same resource. To find out what is causing the lock timeouts, review the "Working with the Transaction Monitor" on page 7-1.

Lock grants



Figure 6–13 Lock Grants region

The lock grants region uses a line graph to show the lock grants after wait per minute. The rate of locks granted after wait should be low indicating that locks were acquired on time. Ideally, the rate should be 0.

Percentage of acquired locks without wait

Figure 6–14 Percentage of Acquired Locks without Wait region



The percent of acquired locks without wait uses a line graph to show the ratio of immediate grants per minute divided by the total rate of grants per minute. This percentage should be close to 100% indicating that locks are acquired without wait. This graph is a good measure of lock contention and concurrency in your TimesTen target.

Transaction Logs

The transaction logs page displays information about log holds and the performance of log holds. The page is divided into two sub-tabs:

- Log holds
- Log performance

Log holds

The log holds sub-tab provides a report of the logs that are being held for the different operations that run on your TimesTen database target. Such operations include transactions, checkpoints, and replication.

Figure 6–15 Log Holds region

Log Holds Log Pe	Log Holds Log Performance							
View 👻 🛃 Det	ach							
Log Hold Resource	Log File Number	Log File Offset	Туре					
sampledb_1122.ds1	7	7084032	Checkpoint					
sampledb_1122.ds0	7	7174144	Checkpoint					

The log holds table contains the same columns and values as the ttLogHolds built-in procedure. For more information about ttLogHolds, see "ttLogHolds" in the *Oracle TimesTen In-Memory Database Reference*. Use the table to monitor how well the operations that depend on the log buffer are doing.

If logs start to accumulate in the log holds table, review the operations that are not allowing the transaction log fils to be purged.

Log performance

The log performance page enables you to review the performance of the log buffer. The log performance sub-tab is divided into two regions:

- Log reads and log flushes
- Log buffer wait

Log reads and log flushes

Figure 6–16 Log Reads and Log Flushes region



The log reads and log flushes region uses a line graph to show the log reads from the file system per minute and the log flushes to the file system per minute. Both the log reads and the log flushes should be low. A non zero rate of log reads from the file system results in poor response time. Ideally, all log records are read from memory (the log buffer) rather than from disk because reading log records from memory is significantly faster.

A high rate of log flushes to the file system may indicate either the need for a larger log buffer or that operations such as checkpoints, replication or XLA are not performing quickly, resulting in the log buffer being persisted to disk.

Log buffer wait



Figure 6–17 Log Buffer Wait region

The log buffer waits per minute region helps you review how the operations that use the log files are doing. The values should be 0. A nonzero value indicates that transactions needed to wait before writing to the log buffer.

Checkpoints

Figure 6–18 Checkpoints table

View 🕶	🛃 De	tach							
Identifiers	Туре	Initiator	Start Time	End Time	Dirty Blocks	Database file number	Checkpoint Volume(MB)	Rate (MB/sec)	Status
10148	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed
10147	Fuzzy	Checkpointer	February	February	8	1	19.203	0.032	Completed
10146	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed
10145	Fuzzy	Checkpointer	February	February	8	1	19.203	0.032	Completed
10144	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed
10143	Fuzzy	Checkpointer	February	February	8	1	19.203	0.032	Completed
10142	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed
10141	Fuzzy	Checkpointer	February	February	8	1	19.203	0.032	Completed
10140	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed
10139	Fuzzy	Checkpointer	February	February	8	1	19.203	0.032	Completed
10138	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed
10137	Fuzzy	Checkpointer	February	February	8	1	19.203	0.032	Completer
10136	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed
10135	Fuzzy	Checkpointer	February	February	8	1	19.203	0.032	Completed
10134	Fuzzy	Checkpointer	February	February	8	0	19.203	0.032	Completed

The checkpoints table shows the checkpoint history for the last 24 hours. Identifiers is a unique numeric identifier for the checkpoint. Identifiers increase monotonically during the lifetime of the database. If you destroy the database, the identifiers are reset. If you destroy the database, but keep the target in Enterprise Manager, you may see a mixture of checkpoints from the both the destroyed and the new database. The new database identifiers are likely to be small and are at the bottom of the table. If you want to see the new database identifiers at the top of the table, sort by Start Time.

Valid values for Type are static, blocking, fuzzy, or none. Valid values for initiator are user, checkpointer, or subdaemon. For the Dirty Blocks column, the values are the number of dirty blocks written. These are blocks that were modified since the last checkpoint. For the Rates column, the value is the volume written per second (in Megabytes). Valid values for the Status column is Progress, Completed, or Failed.

The TimesTen plug-in polls the TimesTen database target every 10 minutes and checks the latest eight checkpoints. If there are more than eight checkpoints in a 10 minute interval, only the last eight checkpoints are displayed. You can sort checkpoints by start time by clicking on the column header.

7

Working with the Transaction Monitor

This chapter describes the TimesTen transaction monitor page. The transaction monitor page displays a snapshot of the current transactions in your TimesTen database and describes details about your transactions.

Topics include:

- Viewing the transaction monitor page
- Analyzing information on the transaction monitor page

Viewing the transaction monitor page

Before using the transaction monitor, ensure that preferred credentials are set for your TimesTen database target. For more information about setting preferred credentials, see "Setting preferred credentials for a target" on page 1-34.

To view the transaction monitor page, ensure that you are on the TimesTen database target page. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

From the **TimesTen Database Home** menu, select **Monitoring**, then select **Transaction Monitor**.

Analyzing information on the transaction monitor page

The transaction monitor displays a snapshot of the current transactions in your TimesTen database and describes details about your transactions. Use the transaction monitor to review how your transactions are processed. If your application is running slow, there may be an issue with how the transactions in the application are acquiring locks. If a lock is not released or is taking too long to be released, application responsiveness is degraded. The transaction monitor can help you identify transactions that are taking too long to be processed.

Note: Enterprise Manager enables you to set the display frequency and auto refresh rate of data on the transaction monitor page. For more information, see "Setting the display time period and auto refresh rate of data on a target page" on page 2-4.

The transaction monitor page is divided into two tabs:

- Outstanding locks
- Awaiting locks

Outstanding locks

The outstanding locks tab enables you to view information about outstanding locks in your database. It is divided into two regions:

- Transaction information
- Lock detail for transaction

Transaction information

Figure 7–1 Transaction Information region

Outstanding locks	Awaiting locks (0)								
Transaction Information Rollback									
View 👻 🔛	🛃 Detach								
Status	Program	Process Number	Context	Connection Id	Transaction Id				
Active	timestenrepd	21596	0x1fa765f0		129.19074996				
Active	THREADS	32229	0x128589d0		6.225289				

The transaction information region displays the current transactions that are holding locks in your database in a table format. You can click the column header to sort the table based on the column.

Click a transaction to review detailed information about the transaction and the locks associated with the transaction.

Figure 7–2 Select a transaction

Transaction	Information					Rollback
View 🔻 🔛	🛃 Detach					
Status	Program	Process Number	Context	Connection Id	Transaction Id	
Active	timestenrepd	21596	0x1fa765f0		129.19074996	
Active	THREADS	32229	0x128589d0		6.225289	

The lock information for your selected transaction displays in the lock detail for transaction region. For more information on the lock detail for transaction region, see "Lock detail for transaction" on page 7-3.

To rollback a transaction, select the transaction and click the **Rollback** button that is located above the transaction information table.

Figure 7–3 Rollback a transaction

Outstanding locks	Awaiting locks (0)						
Transaction Information Rollback								
View 👻 🔯	🛃 Detach					-0		
Status	Program	Process Number	Context	Connection Id	Transaction Id			
Active	timestenrepd	21596	0x1fa765f0		129.19074996			
Active	THREADS	32229	0x128589d0		6.225289			

A confirmation dialog appears where you need to confirm the rollback operation.

Lock detail for transaction

igure 7–4	Lock detai	ls			
Lock Detail	for Transaction				
View 👻 🛃 Detach					
Lock Mode	Resource Id	Resource	On Table	SQL Text	Process Number
S	392669488	Command		update t set a = b+1	32229
W	1798064	Table	APPUSER.T	update t set a = b+1	32229

The lock details region displays information about the locks of a selected transaction.

The number of locks in the lock details region should be low. If you see many locks, review the way your application is acquiring locks.

For more information about locks and transactions, see "ttXactAdmin" in the Oracle TimesTen In-Memory Database Reference.

Awaiting locks

Figure 7–5 Awaiting locks

Outstanding locks Awaiting locks (2)											
View 👻		Detach									
Resource	Resource Id	On Table	Process Number	Context	Transaction Id	Mode	SQL Text	Holder Transaction Id	Holder Mode	Holder SQL Text	
Row	BMUFVUAA	APPUSE	9627	0x11b9ab70			UPDATE		Xn	UPDATE /*+ T	
Row	BMUFVUAA	APPUSE	9633	0xd665b70	8.1343018	Xn	UPDATE	6.225470	Xn	UPDATE /*+ T	

The awaiting locks region displays transactions that are competing for the same lock resources.

The number of locks in the awaiting locks region should be low. Locks that are awaiting events such as user input do not show in the table. If you see a transaction that does not clear after running the transaction monitor multiple times, review the lock. You may need to force a commit or a rollback on the transaction.

For more information about locks and transactions, see "ttXactAdmin" in the *Oracle TimesTen In-Memory Database Reference*.

Working with the Client/Server Page

This chapter describes the TimesTen database client/server page. The TimesTen database client/server page conveys performance information about your TimesTen client/server connection.

Topics include:

- Viewing the client/server page
- Analyzing information on the TimesTen client/server page

Viewing the client/server page

To view the client/server summary page, ensure that you are on the TimesTen database target page. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

From the **TimesTen Database Home** menu, select **Monitoring**, then select **Client/Server Summary**.

The TimesTen database client/server summary page displays.

Analyzing information on the TimesTen client/server page

Figure 8–1 shows the three client/server specific tab that have been customized for your TimesTen database targets. Click a specific tab to view detailed client/server information.



- Server Workload
- Statements
- Network usage

Server Workload

The server workload tab enables you to view information about server workload. The server workload tab contains three graph regions:

- Write rates
- Read rates
- Commits and rollbacks

Write rates

Figure 8–2 Write Rates region



The write rates region uses a line graph to show the rate of INSERT, UPDATE, and DELETE operations executed on rows per second on the TimesTen server.

The write rates region is populated when the TimesTen database is enabled to collect all database and operating system statistics. To enable TimesTen to collect all database and operating system statistics, call the ttStatsConfig built-in procedure with the StatsLevel parameter set to ALL.

```
Command> call ttStatsConfig('StatsLevel','ALL');
< STATSLEVEL, ALL >
1 row found.
```

For more information about the ttStatsConfig built-in procedure, see "ttStatsConfig" in the Oracle TimesTen In-Memory Database Reference.

Read rates



The read rates region uses a line graph to show the rate of SELECT operations executed on rows per second on the TimesTen server.

The read rates region is populated when the TimesTen database is enabled to collect all database and operating system statistics. To enable TimesTen to collect all database and operating system statistics, execute the ttStatsConfig built-in procedure with the StatsLevel parameter set to ALL.

```
Command> call ttStatsConfig('StatsLevel','ALL');
< STATSLEVEL, ALL >
1 row found.
```

For more information about the ttStatsConfig built-in procedure, see "ttStatsConfig" in the Oracle TimesTen In-Memory Database Reference.

Commits and rollbacks





The commits and rollbacks region uses a line graph to show the rate of COMMIT and ROLLBACK statements executed per second on the TimesTen server.

Statements

The statements tab enables you to view information about the read and write rates of your SQL statements. The statements tab contains two graph regions:

- Write rates
- Read rates

Write rates

Figure 8–5 Write Rates region



The write rates region uses a line graph to show the rate of INSERT, UPDATE, and DELETE operations executed per second on the TimesTen server.

Read rates





The read rates region uses a line graph to show the rate of SELECT operations executed per second on the TimesTen server.

Network usage

The network usage tab enables you to view information about client/server network usage. The network usage tab contains two graph regions:

- Network round trips
- Bytes sent and received

Network round trips



Figure 8–7 Network Round Trips region

The network round trips region uses a line graph to show the client/server round trips per second.

Bytes sent and received





The bytes sent and received region uses a line graph to show the number of bytes sent and received by the TimesTen server per second.

Working with the Instance Control Menu

This chapter describes the TimesTen instance control menu. The instance control menu displays options to control various aspects of your TimesTen instance targets.

Topics include:

Viewing the instance control menu

Viewing the instance control menu

To view the instance control menu, ensure that you are on the TimesTen instance target page. For information on navigating to the TimesTen instance target page, see "Navigating to the TimesTen target page" on page 2-1.

From the **TimesTen Instance Home** menu, select **Control**.

The TimesTen instance control menu displays. Click a specific option to view TimesTen instance controls. A description of each option follows:

- Start/stop services
- Create blackout
- End blackout

Start/stop services

The start/stop services page enables you to start and stop the TimesTen daemon and TimesTen server services. This page also displays statistics of TimesTen databases that are part of your current TimesTen instance. The start/stop services page contains two regions:

Note: In order to start and stop the TimesTen daemon of a TimesTen instance, you must set preferred credentials for your TimesTen instance target. For more information, see "Setting preferred credentials for a target" on page 1-34.

- Service
- Database

Service

View 🕶	🚺 Star	t 🔲 Stop	🛃 Detach	
Service		Status	Process ID	Port
	Daemon	Up	22693	12345
	Server	Up	22702	53397

Figure 9–1 Service region

The service region enables you to start and stop the TimesTen daemon and TimesTen server services. You can select a row and then click Start or Stop to control the TimesTen services. If you stop the TimesTen daemon and a TimesTen database is loaded into memory, Enterprise manager displays a dialog that recommends that you close all connections to your TimesTen database and unload the database from memory. This dialog enables you to filter the Database region to only view the TimesTen databases with active connections and that are loaded into memory.

The services region enables you to perform similar control operations as the ttDaemonAdmin utility. The Status, Process ID, and Port columns are populated with information from the ttStatus utility. For more information about the utilities, see "ttDaemonAdmin" and "ttStatus" in the *Oracle TimesTen In-Memory Database Reference*.

The port column of the Service table shows you the ports on which the TimesTen daemon and TimesTen server listen. If these ports conflict with another application, consider changing the TimesTen ports with the ttmodinstall utility. For more information on the ttmodinstall utility, see "ttmodinstall" in the *Oracle TimesTen In-Memory Database Reference*.

Database



View 🔻	Details	Detach		
Database		Total Connections	Client Server Connections	RAM Status
samp	ledb_1122	11	0	Loaded

The database region displays statistics of TimesTen databases that are part of your current TimesTen instance. The database table is populated with information from the ttStatus utility. You can select a row in the table and then click the Details button to view all the connections to the selected TimesTen database. For more information about the ttStatus utility, see "ttStatus" in the *Oracle TimesTen In-Memory Database Reference*.

Create blackout

Create a blackout to suspend all data collection activity on a target that is monitored by Enterprise Manager. Consider creating a blackout to perform maintenance on a TimesTen instance target. For more information on creating a blackout, see "Creating a Blackout" in the *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

End blackout

A blackout ends automatically after the set blackout duration expires. In some cases you may want to end a blackout before the blackout duration expires. To end a blackout, ensure that you are on the TimesTen instance target page and that a blackout is active for your TimesTen instance target. For information on navigating to the TimesTen instance target page, see "Navigating to the TimesTen target page" on page 2-1.

1. From the **TimesTen Instance Home** menu, select **Control**, then select **End Blackout**.

Figure 9–3 Select End Blackout

🖹 testhost.tt1122	
⊙ TimesTen Instance Home ▼	
Home	
Monitoring	•
Control	Start/Stop Services
Job Activity	Create Blackout
Information Publisher Reports	
Configuration	► com
Compliance	•
Target Setup	•
Target Sitemap	
Target Information	

The Blackouts confirmation page displays. Locate the Yes button.

2. Click Yes.

Figure 9–4 Click Yes

```
Blackouts
Confirmation
You have chosen to stop the blackout on target "testhost.tt1122". Do you
want to proceed?

IP This will stop all future executions of this blackout.
```

No Ye

The information dialog displays with the text "The End Blackout request has been successfully submitted. Target status changes require time to reflect this latest submission."

Figure 9–5 Successful End Blackout request

The End Blackout request has been successfully submitted. Target status changes require time to reflect this latest submission.							
9	Blackout Blackout-Aug 5 2014 3:50:37 Name PM	Blacked Out Aug 5, 2014 3:50:41 PM Since PDT					
Under Blackout	Reason Created By SYSMAN	End Time Aug 5, 2014 4:50:41 PM PDT					

You have successfully ended the blackout of your TimesTen instance target. Enterprise Manager can take several minutes to resume data collection activities on your TimesTen instance target.

Working with the Database Control Menu

This chapter describes the TimesTen database control menu. The database control menu displays options to control various aspects of your TimesTen database targets.

Topics include:

Viewing the database control menu

Viewing the database control menu

To view the database control menu, ensure that you are on the TimesTen database target page. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

From the TimesTen Database Home menu, select Control.

The TimesTen database control menu displays. Click a specific option to view TimesTen database controls. A description of each option follows:

- Start/stop agents
- Ram load/unload and policy settings
- Create blackout
- End blackout

Start/stop agents

Figure 10–1 Start/Stop Agents page

🍥 TimesTen Database Home 👻				Page Refreshed Sep 24, 2014 9:	37:37 AM PDT 🖒
View 👻	🚺 Start	Stop	d Detach		
Service					Status
				Cache Agent	Up
				Replication Agent	Up

The start/stop agents page enables you to start and stop the TimesTen replication and TimesTen cache agents. You can select a row and then click Start or Stop to control the TimesTen agents.

The start/stop agents page calls these built-in procedures to control the TimesTen agents:

 ttCacheStart - This built-in procedure starts the TimesTen cache agent. For more information, see "ttCacheStart" in the Oracle TimesTen In-Memory Database Reference.

- ttCacheStop This built-in procedure stops the TimesTen cache agent. For more information, see "ttCacheStop" in the *Oracle TimesTen In-Memory Database Reference*.
- ttRepStart This built-in procedure starts the TimesTen replication agent. For more information, see "ttRepStart" in the Oracle TimesTen In-Memory Database Reference.
- ttRepStop This built-in procedure stops the TimesTen replication agent. For more information, see "ttRepStop" in the *Oracle TimesTen In-Memory Database Reference*.

Ram load/unload and policy settings

The Ram load/unload and policy settings page enables you to load and unload the TimesTen database from memory and change the RAM policy of the TimesTen database. This page contains two regions:

- Load/unload RAM
- RAM policy configuration

Load/unload RAM

Load/Unload RAM 🔄 Load 👘 🔂 Unload Load Status Loaded Database Loaded Since January 29, 2015 12:48 PM Current Connections View 👻 🔛 🛃 Detach Name Туре Process ID Connection ID Context Manager Subdaemon 22700 142 0x000000009e67 Rollback Subdaemon 22700 141 0x0000000009ebe Flusher Subdaemon 22700 140 0x0000000009fa8 Monitor Subdaemon 22700 139 0x000000000a015 Checkpoint Subdaemon 22700 138 0x000000000a08a Deadlock Detector Subdaemon 22700 137 0x000000000a0df IndexGC Subdaemon 136 22700 0x000000000a134. 22700 135 HistGC Subdaemon 0x000000000a189 AsyncMV Subdaemon 22700 133 0x00000000a1de. Log Marker Subdaemon 22700 132 0x00000000a233 Aging Subdaemon 22700 0x00000000a288. 131

The load/unload RAM region enables you to load and unload the TimesTen database from memory. You can also review the load status of the TimesTen database and current connections to your TimesTen database. The load and unload options are only available if your database RAM residence policy is set to Manual. You can click the Load button to load the database into memory. You can click the Unload button to unload the database from memory. Before unloading the TimesTen database from memory, ensure that all applications are disconnected from your TimesTen database. Also, ensure that you stop the cache and replication agents. For more information on stopping the cache and replication agents, see "Start/stop agents" on page 10-1.

The load/unload RAM region runs the ttAdmin utility to load and unload the database from memory. For more information, see "ttAdmin" in the *Oracle TimesTen In-Memory Database Reference*.

Figure 10–2 Load/Unload RAM region

RAM policy configuration

The RAM policy configuration region enables you to view your current RAM residence policy and change the RAM policy of your TimesTen database. The RAM policy configuration contains two sub-regions:

- Current configuration
- Change RAM policy

Current configuration

Figure 10–3 Current Configuration sub-region

Current Configuration

RAM Residence Policy: In Use RAM Residence Grace (seconds): 0

The current configuration sub-region displays the current RAM residence policy and the RAM residence grace period.

The current configuration sub-region runs the ttAdmin utility to display the current RAM configuration of your database. For more information, see "ttAdmin" in the *Oracle TimesTen In-Memory Database Reference*.

Change RAM policy



Change RAM Policy * Select RAM Policy Always In Use RAM Residence Grace (seconds): Submit Cancel

The change RAM policy sub-region enables you to modify the RAM policy of your TimesTen database. If you set the RAM policy as In Use, you can also set a RAM residence grace period.

The change RAM policy sub-region runs the ttAdmin utility to change the RAM policy and set RAM residence grace period. For more information on the ttAdmin utility and the RAM policy settings, see "ttAdmin" in the *Oracle TimesTen In-Memory Database Reference*.

Create blackout

Create a blackout to suspend all data collection activity on a target that is monitored by Enterprise Manager. Consider creating a blackout to perform maintenance on a TimesTen instance target. For more information on creating a blackout, see "Creating a Blackout" in the *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

End blackout

A blackout ends automatically after the set blackout duration expires. In some cases you may want to end a blackout before the blackout duration expires. To end a

blackout, ensure that you are on the TimesTen instance target page and that a blackout is active for your TimesTen database target. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

1. From the **TimesTen Database Home** menu, select **Control**, then select **End Blackout**.

testhost.tt1122.samp	led	lb_1122 🔞
⊙ TimesTen Database Home ▼		
Home		
Monitoring	F	
Control	₽	Start/ Stop Agents
Job Activity		Ram Load/Unload and Policy Settings
Information Publisher Reports		Create Blackout
Availability	۲	End Blackout
Configuration	F	itor
Compliance	۲	
Target Setup	Þ	
Target Sitemap		
Target Information		

Figure 10–5 Select End Blackout

The Blackouts confirmation page displays. Locate the Yes button.

2. Click Yes.

```
Figure 10–6 Click Yes
```

```
Blackouts
Confirmation
You have chosen to stop the blackout on target "testhost.tt1122.sampledb_1122". Do you
want to proceed?
Ø TIP This will stop all future executions of this blackout.
```

No Ye

The information dialog displays with the text "The End Blackout request has been successfully submitted. Target status changes require time to reflect this latest submission."

Figure 10–7 Successful End Blackout request

The End Blackout reg latest submission.	quest has been successfully submitted. Target si	tatus changes require time to reflect this
9	Blackout Blackout-Aug 5 2014 3:50:37 Name PM	Blacked Out Aug 5, 2014 3:50:41 PM Since PDT
Under Blackout	Reason Created By SYSMAN	End Time Aug 5, 2014 4:50:41 PM PDT

You have successfully ended the blackout of your TimesTen database target. Enterprise Manager can take several minutes to resume data collection activities on your TimesTen database target.

Working with the Backup and Restore Page

This chapter describes the TimesTen database Backup and Restore page. The TimesTen database backup and restore page enables you to schedule database backups, restore from available backups, and view recovery history.

Topics include:

- Viewing the backup and restore page
- Analyzing information on the TimesTen backup and restore page

Viewing the backup and restore page

Before using database backup and restore, ensure that preferred credentials are set for your TimesTen database target. For more information about setting preferred credentials, see "Setting preferred credentials for a target" on page 1-34.

To view the backup and restore page, ensure that you are on the TimesTen database target page. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

From the **TimesTen Database Home** menu, select **Availability**, then select **Backup** and **Restore**.

Analyzing information on the TimesTen backup and restore page

Figure 11–1 shows the three backup and restore specific areas that have been customized for your TimesTen database targets. Click a specific tab to view detailed information.

Figure 11–1 Backup and Restore tabs

TimesTen Database Home ▼							
Backup Schedule	Backup History and Restore Database	Restore History					

A description of each area follows:

- Backup schedule
- Backup history and restore database
- Restore history

Backup schedule

Backup Schedule Backup History and Restore Database Restore History														
View 🗸 📑 Create Activate/Deactivate Immediate 💥 Delete 🚮 Detach														
	Dealure	Daaluur	Dealure	D	Charle	r.d	File		tion Log	Backup Files			Backup Completion State	
Backup ID	васкир Туре	Backup Directory	Backup File Prefix	Recurrence Interval	Date		Schedule State		Maximum	Current Count	Maximum	Owner	Current State	Last Successfu Backup

Figure 11–2 Backup Schedule tab

The backup schedule tab enables you to create, edit, and delete backup schedules for your TimesTen database. TimesTen calls the ttBackup utility to perform backups of your TimesTen database. For more information on the ttBackup utility, see "ttBackup" in the *Oracle TimesTen In-Memory Database Reference*.

You can perform these actions on the backup schedule tab:

- Create a backup schedule
- Activate a backup schedule
- Deactivate a backup schedule
- Request an immediate backup
- Delete a backup schedule

Create a backup schedule

To create a backup schedule, ensure that you are on the Backup Schedule tab of the Backup and Restore page.

Note: The backup and restore functions for the TimesTen database in Enterprise Manager cannot backup and restore TimesTen databases with cache groups. For more information on backing up and restoring TimesTen databases with cache groups, see "Backing up and restoring a database with cache groups" in the *Oracle TimesTen Application-Tier Database Cache User's Guide*.

1. Click Create.

Figure 11–3 Click Create

Backup S	chedule	Backup	o History an	d Restore Da	tabase	Resto	ore History							
View 👻	🗳 Ci	eate .	Activate/D	eactivate	Imm	ediate	🗙 Del	ete	🛃 Deta	ch				
		45	45			5 -4		Transaction Log Files		Backup Files			Backup Completion State	
Backup ID	васкир Туре		Backup File Prefix	Recurrence Interval	Date	Date	Schedule State		Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
No data ava	ailable.													

The Create a Backup Schedule dialog displays. The first property is the Type of Backup.

- 2. Select a backup type from the **Type** options. These are the available backup types:
 - Incremental

An incremental backup augments an existing incremental-enabled backup of the same database. An incremental backup moves the backup point of an existing backup forward in time by augmenting the backup with all of the transaction log files created since its last backup point.

Full

A full backup saves the entire database. For full backups, you must have enough disk space available to hold both the existing backup and the new backup, until the new backup succeeds.



* Backup Type	 Incremental — Full 	
* Backup ID * Backup	6	
Directory		
Backup File Prefix		
Recurrence * Interval		
* Start Date	Mar 13, 2015 4:27:43 PN 🖄	
* End Date	Mar 10, 2025 4:27:43 PN 🖄	
Maximum Transaction Log Files	128	

You are now ready to define your new backup schedule.

Incremental

An incremental backup augments an existing incremental-enabled backup of the same database. An incremental backup moves the backup point of an existing backup forward in time by augmenting the backup with all of the transaction log files created since its last backup point.

An incremental backup typically completes much faster than a full backup, as it has less data to copy. The performance gain of incremental backups over full backups comes at the cost of increased disk usage and longer restoration times. Use incremental backups in concert with full backups to achieve a balance between backup time, disk usage, and restoration time.

Before defining a backup schedule, ensure that you have completed the steps up to step 2 from "Create a backup schedule" on page 11-2.

Note: For more information about TimesTen backup types, see "Types of backup provided" in the *Oracle TimesTen In-Memory Database Installation Guide*.

- 1. In the * **Backup ID** text field, type a meaningful backup schedule name. (For example, *hourly_backup*.)
- **2.** In the *** Backup Directory** text field, type the directory where the backup files should be stored. Ensure that this directory exists.

- **3.** In the **Backup File Prefix** text field, type a file prefix for the backup files in the backup directory. The Backup File Prefix field is optional. The default value for this option is the file name portion of the DataStore attribute of the database's ODBC definition. For more information about the DataStore attribute, see "DataStore" in the *Oracle TimesTen In-Memory Database Reference*.
- **4.** From the *** Recurrence Interval** drop-down list, select a recurrence for when TimesTen checks the maximum transaction log files criteria. If the maximum transaction log files criteria is met, TimesTen performs an incremental backup. The default value is 1 hour.
- **5.** Click the calendar button to the right of the * **Start Date** field, then select the start date and time for the backup schedule. The default value is the current date and time of the Enterprise Manager server.
- **6.** Click the calendar button to the right of the * **End Date** field, then select the end date for the backup schedule. The default value is 10 years after the current date of the Enterprise Manager server.
- 7. In the Maximum Transaction Log Files text field, type the number of transaction log files when an incremental backup is performed. TimesTen only performs the incremental backup if the maximum transaction log files criteria is met during a recurrence check. The default value is 128.
- 8. Click OK.

Figure 11–5 Click OK

eate a Backu	ıp Schedule	>
* Backup Type	Incremental Full	
* Backup ID	hourly_backup	
* Backup Directory	/backup	
Backup File Prefix		
* Recurrence Interval	1 hr 🔻	
* Start Date	Mar 13, 2015 4:27:43 PN 🖄	
* End Date	Mar 10, 2025 4:27:43 PN 🖄	
Maximum Transaction Log Files	128	
		OK Cancel

The Create a Backup Schedule dialog closes and you are returned back to the Backup Schedule tab of the Backup and Restore page. Notice the backup schedule you created is auto-filled in the backup schedule table.

If you see a "No preferred credentials set" error message, set preferred credentials for your TimesTen database target and activate the backup schedule you created. Make sure your backup schedule works by requesting an immediate backup. For more information, see "Setting preferred credentials for a target" on page 1-34, "Activate a backup schedule" on page 11-6, and "Request an immediate backup" on page 11-8.

You successfully created a TimesTen incremental backup schedule.
Full

A full backup saves the entire database. For full backups, you must have enough disk space available to hold both the existing backup and the new backup, until the new backup succeeds.

Note: For more information about TimesTen backup types, see "Types of backup provided" in the *Oracle TimesTen In-Memory Database Installation Guide*.

- 1. In the * **Backup ID** text field, type a meaningful backup schedule name. (For example, *daily_backup*.)
- **2.** In the *** Backup Directory** text field, type the directory where the backup files should be stored. Ensure that this directory exists.
- **3.** In the **Backup File Prefix** text field, type a file prefix for the backup files in the backup directory. The Backup File Prefix field is optional. The default value for this option is the file name portion of the DataStore attribute of the database's ODBC definition. For more information about the DataStore attribute, see "DataStore" in the *Oracle TimesTen In-Memory Database Reference*.
- **4.** From the *** Recurrence Interval** drop-down list, select a recurrence for when TimesTen checks the maximum transaction log files criteria. If the maximum transaction log files criteria is met, TimesTen performs an incremental backup.
- **5.** Click the calendar button to the right of the * **Start Date** field, then select the start date and time for the backup schedule. The default value is the current date and time of the Enterprise Manager server.
- **6.** Click the calendar button to the right of the * **End Date** field, then select the end date for the backup schedule. The default value is 10 years after the current date of the Enterprise Manager server.
- 7. In the **Maximum Backup Files** text field, type the maximum number of full backup files that TimesTen can store at any given time. When the maximum backup files value is exceeded, TimesTen deletes the oldest backup file before creating a new backup file. The default value is 31.
- 8. Click OK.

Figure 11–6 Click OK

up File Prefix Jurrence Daily rt Date Mar 16, 2015 10:21:19 A Mar 13, 2025 10:21:19 A Aximum 31	* Backup Type	 Incremental Full 	
rectory Prefix Prefix Interval Int Date Mar 16, 2015 10:21:19 A Mar 13, 2025 10:21:19 A A A A A A A A A A A A A A	Backup ID	daily_backup	
Prefix	* Backup Directory	/backup	
nterval Mar 16, 2015 10:21:19 A 🖄 nd Date Mar 13, 2025 10:21:19 A 🖄	ckup File Prefix		
nd Date Mar 13, 2025 10:21:19 A	currence Interval	Daily 🔻	
aximum 31	tart Date	Mar 16, 2015 10:21:19 A 🖄	
	End Date	Mar 13, 2025 10:21:19 A 🖄	
	Maximum kup Files	31	

The Create a Backup Schedule dialog closes and you are returned back to the Backup Schedule tab of the Backup and Restore page. Notice the backup schedule you created is auto-filled in the backup schedule table.

If you see a "No preferred credentials set" error message, set preferred credentials for your TimesTen database target and activate the backup schedule you created. Make sure your backup schedule works by requesting an immediate backup. For more information, see "Setting preferred credentials for a target" on page 1-34, "Activate a backup schedule" on page 11-6, and "Request an immediate backup" on page 11-8.

You successfully created a TimesTen full backup schedule.

Activate a backup schedule

When you create a backup schedule Enterprise Manager activates the backup schedule. An active backup schedule runs based on its configured schedule.

To activate a backup schedule, ensure that you are on the Backup Schedule tab of the Backup and Restore page:

1. In the Backup Schedule table, click in the row that identifies the **Backup ID** of your backup schedule. Ensure that the Schedule State is Inactive.

Backup S	chedule	Backu	p History an	d Restore Da	tabase	Resto	ore History							
View 🗸	🗳 Ci	reate	Activate/D	eactivate	Imm	ediate	🗙 Del	ete	🛃 Deta	ch				
	Dealure	Dealars	Daalaan	D	-	E.J.	Schedule	Files	tion Log	Backup	Files		Backup State	Completior
Backup ID	Баскир Туре		Backup File Prefix	Recurrence Interval	Date	Date	State	Current Count	Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
daily_b	Full	/backup	sampled	Daily	Mar	Mar 1	Inactive	n/a	n/a		31	SYSM	Pend	
							l	17						

Figure 11–7 Select your backup schedule

2. Click Activate/Deactivate.

Figure 11–8 Click Activate/Deactivate

Backup So	chedule	Backup	o History an	d Restore Da	tabase	Resto	re History							
View 🔻	🗳 Cr	eate	Activate/D	eactivate.	Imm	ediate	🗙 Del	ete	🚮 Detad	:h				
	Dealum	Paslere	Dealuur		C + +	F.u.d	Schedule	Transact Files	tion Log	Backup	Files		Backup Comple State	
Backup ID	Баскир Туре	Directory	File Prefix	Recurrence Interval	Date	Date			Maximum	Current Count	Maximum	Owner	Current State	Last Successfu Backup
hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
daily b	Full	/backup	sampled	Daily	Mar	Mar 1	Inactive	n/a	n/a		31	SYSM	Pend	

The Activate/Deactivate Backup Schedule dialog displays. Locate the Activate button.

3. Click Activate.

Figure 11–9 Click Activate

tivate/Deactivate	Backup Schedule			>
Backup ID	daily_backup			
Backup Type	Full			
Backup Directory	/backup			
Backup File Prefix	sampledb_1122			
Recurrence Interval	Daily			
Start Date	Mar 16, 2015 10:21:19 AM			
End Date	Mar 13, 2025 10:21:19 AM			
Schedule State	Inactive			
Owner	SYSMAN			
		Activate	Deactivate	Cancel

The Activate/Deactivate Backup Schedule dialog closes and the Backup Schedule tab of the Backup and Restore page refreshes. Notice that the Schedule State of your Backup ID is now Active.

You have successfully activated your backup schedule.

Deactivate a backup schedule

To deactivate a backup schedule, ensure that you are on the Backup Schedule tab of the Backup and Restore page:

1. In the Backup Schedule table, click in the row that identifies the **Backup ID** of your backup schedule. Ensure that the Schedule State is Active.

Backup S	chedule	Backuj	p History an	d Restore Da	tabase	Resto	re History							
View 👻	🗳 Cr	eate	Activate/D	eactivate	Imm	ediate	🗙 Del	ete	🛃 Deta	:h				
	Dealars	Dealars	Dealars	D	C1 1	F -1			tion Log	Backup	Files		Backup State	Completion
Backup ID	васкир Туре	Directory	Backup File Prefix	Recurrence Interval	Date	Date	State	Current Count	Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
daily_b	Full	/backup	sampled	Daily	Mar	Mar 1	Active	n/a	n/a		31	SYSM	Pend	

Figure 11–10 Select your backup schedule

2. Click Activate/Deactivate.

Figure 11–11 Click Activate/Deactivate

Backup S	chedule	Backuj	p History an	d Restore Da	tabase	Resto	ore History							
View 👻	🗳 Cr	eate	Activate/D	eactivate	Imm	ediate	🗙 Del	ete	🛃 Deta	ch				
	Dealar	Dealers	Dealars	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-	F -1	Schedule	Filer	tion Log	Backup	Files		Backup State	Completion
Backup ID	васкир Туре	Directory	Backup File Prefix	Recurrence Interval	Date	Date			Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
daily_b	Full	/backup	sampled	Daily	Mar	Mar 1	Active	n/a	n/a		31	SYSM	Pend	

The Activate/Deactivate Backup Schedule dialog displays. Locate the Deactivate button.

3. Click Deactivate.

Figure 11–12 Click Deactivate

tivate/Deactivate	Backup Schedule			×
Backup ID	daily_backup			
Backup Type	Full			
Backup Directory	/backup			
Backup File Prefix	sampledb_1122			
Recurrence Interval	Daily			
Start Date	Mar 16, 2015 10:21:19 AM			
End Date	Mar 13, 2025 10:21:19 AM			
Schedule State	Active			
Owner	SYSMAN			
		Activate	Deactivate	Cancel

The Activate/Deactivate Backup Schedule dialog closes and the Backup Schedule tab of the Backup and Restore page refreshes. Notice that the Schedule State of your Backup ID is now Inactive.

You have successfully deactivated your backup schedule.

Request an immediate backup

To request an immediate backup, ensure that you are on the Backup Schedule tab of the Backup and Restore page:

1. In the Backup Schedule table, click in the row that identifies the **Backup ID** of your backup schedule. Ensure that the Schedule State is Active.

Figure 11–13	Select	your backuj	o schedule
--------------	--------	-------------	------------

Backup S	chedule	Backu	p History an	d Restore Da	tabase	Resto	re History							
View 🔻	🚰 Cr	eate	Activate/D	eactivate	Imm	ediate	🗙 Del	ete	🛃 Deta	:h				
	Dealure	Daaluur	Daaluur	D	Charak .	r.d	Schedule	Transac Files	tion Log	Backup	Files		Backup State	Completion
Backup ID	Баскир Туре	Directory	File Prefix	Recurrence Interval	Date	Date	State	Current Count	Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
daily_b	Full	/backup	sampled	Daily	Mar	Mar 1	Active 📐	n/a	n/a		31	SYSM	Pend	

2. Click Immediate.

Figure 11–14 Click Immediate

Backup S	chedule	Backuj	p History an	d Restore Da	tabase	Resto	re History							
View 🔻	🕒 Cr	eate	Activate/D	eactivate	Imm	nediate	🛛 🗶 Del	ete	🛃 Deta	ch				
	Dealuur	Dealure	Dealure	D	Chard	End	Schedule	Transac Files	tion Log	Backup	Files		Backup State	Completion
Backup ID	Баскир Туре	Directory	File Prefix	Recurrence Interval	Date	Date		Current Count	Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
daily_b	Full	/backup	sampled	Daily	Mar	Mar 1	Active	n/a	n/a		31	SYSM	Pend	

The Immediate Backup dialog displays. Locate the OK button.

3. Click OK.

Figure 11–15 Click OK

mediate Backup		
Backup ID	daily_backup	
Backup Type	Full	
Backup Directory	/backup	
Backup File Prefix	sampledb_1122	
Recurrence Interval	Daily	
Start Date	Mar 16, 2015 10:21:19 AM	
End Date	Mar 13, 2025 10:21:19 AM	
Schedule State	Active	
Owner	SYSMAN	
		OK Cancel

The Immediate Backup dialog closes. TimesTen runs the ttBackup utility to complete your backup request. The backup time varies depending on the size of your database. Review the Backup History tab to see the status of your TimesTen backup. For more information on the Backup History tab, see "Backup history and restore database" on page 11-11. For more information on the ttBackup utility, see "ttBackup" in the *Oracle TimesTen In-Memory Database Reference*.

You have successfully requested an immediate TimesTen backup.

Delete a backup schedule

To delete a backup schedule, ensure that you are on the Backup Schedule tab of the Backup and Restore page:

1. In the Backup Schedule table, click in the row that identifies the **Backup ID** of your backup schedule.

Figure 11–16 Select your backup schedule

Backup S	chedule	Backu	o History an	d Restore Da	tabase	Resto	ore History							
View 👻	🗳 Cr	eate	Activate/D	eactivate	Imm	mediate 🔀 🛙		ete	🛃 Deta	:h				
	Dealure	Dealure	Dealure	D	Start End			Transac Files	tion Log	Backup	Files		Backup State	Completior
Backup ID	Баскир Туре	Backup Directory	Backup File Prefix	Interval	Date			Current Count	Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
daily_b	Full	/backup	sampled	Daily	Mar	Mar 1	Active N	n/a	n/a		31	SYSM	Pend	

2. Click Delete.

Figure 11–17 Click Delete

E	Backup Se	chedule	Backu	p History an	d Restore Da	itabase	Resto	re History							
	View 🕶	🗳 Cr	eate	Activate/D	eactivate	Imm	ediate	💥 Del	ete	🛃 Deta	ch				
		Dealars	Dealars	Dauluur	D	a	E-4	Schedule	Filer	tion Log	Backup	Files		Backup State	Completion
E	Backup ID	Backup Type			Recurrence Interval					Maximum	Current Count	Maximum	Owner	Current State	Last Successful Backup
	hourly	Incre	/backup	sampled	1 hr	Mar	Mar 1	Active		128	n/a	n/a	SYSM	Pend	
	daily_b	Full	/backup	sampled	Daily	Mar	Mar 1	Active	n/a	n/a		31	SYSM	Pend	

The Delete Backup Schedule dialog displays. Locate the OK button.

3. Click OK.

Figure 11–18 Click OK



The Delete Backup Schedule dialog closes and the Backup Schedule tab of the Backup and Restore page refreshes. You can verify the backup schedule has been deleted by reviewing the Backup Schedule tab of the Backup and Restore page. You should no longer see your TimesTen backup schedule. You have successfully deleted your TimesTen backup schedule.

Backup history and restore database

Figure 11–19 Backup History tab

View 🔻	Restore	🗙 Delet								
Backup ID	Backup Type	Backup Director	Backup File Prefix	Recurrence Interval	Backup Start Date	Backup End Date	Status	Reason for Failure	Backup Size (GB)	Elapseo Time (sec)
hourly_back	Incremental	/scrat	sampledb	1 hr	Mar	Mar	Success		0.08	0
daily backup	Full	/scrat	sampledb	Daily	Mar	Mar	Success		0.08	0

The backup history tab and restore database enables you to view backup history, delete backups, and recover your TimesTen database. TimesTen calls the ttRestore utility to restore your TimesTen database from a backup. For more information on the ttRestore utility, see "ttRestore" in the *Oracle TimesTen In-Memory Database Reference*.

You can perform these actions on the backup history tab:

- Restore the TimesTen database with an available backup
- Delete a TimesTen database backup file

Restore the TimesTen database with an available backup

To restore your TimesTen database with an available backup, ensure that you are on the Backup History and Restore Database tab of the Backup and Restore page and that your TimesTen database is unloaded from memory. For more information on unloading your TimesTen database from memory, see "Load/unload RAM" on page 10-2.

Note: During the restoration procedure, Enterprise Manager does not collect any TimesTen database metric information. Enterprise Manager starts collecting TimesTen database metric information when the TimesTen database is restored.

1. In the Backup History and Restore Database table, click in the row that identifies the **Backup ID** of your backup. Ensure that the Status is Success.

Figure 11–20 Select your backup

Backup Schedu	le Backup	History	and Restor	e Re	Restore History						
View 👻 📄	Restore	🗙 Delet	e 🛃 D	etach							
Backup ID	Backup Type	Backup Director	Backup File Prefix	Recurrence Interval	Start	Backup End Date	Status	Reason for Failure	Backup Size (GB)	Elapsed Time (sec)	
hourly_back	Incremental	/scrat	sampledb	1 hr	Mar	Mar	Success		0.08	0	
daily_backup	Full	/scrat	sampledb	Daily	Mar	Mar	Success	v	0.08	0	

2. Click Restore.

Figure 11–21 Click Restore

Backup Schedule Backup History and Restore Database Restore History														
View 👻	Restore	🗙 Delet	e 🛃 D	letach										
	Backup Type				Backup Start Date	Backup End Date	Status	Reason for Failure	Backup Size (GB)	Elapsed Time (sec)				
hourly_back	Incremental	/scrat	sampledb	1 hr	Mar	Mar	Success		0.08	0				
daily_backup	Full	/scrat	sampledb	Daily	Mar	Mar	Success		0.08	0				

The Restore Backup dialog displays. Locate the OK button.

3. Click **Restore**.

Figure 11–22 Click Restore

store Backup		>
Backup ID	hourly_backup	
Backup Type	Incremental	
Backup Directory	/scratch/nivande/backup/20150316111223	
Backup File Prefix	sampledb_1122	
Recurrence Interval	1 hr	
Backup Start Date	Mar 16, 2015 11:19:25 AM	
Backup End Date	Mar 16, 2015 11:19:25 AM	
Status	Success	
Reason for Failure		
Backup Size (GB)	0.08	
		Restore Cancel

The Restore Backup dialog closes. TimesTen runs the ttRestore utility to complete your TimesTen database restoration request. The restore time varies depending on the size of your database. Review the Restore History tab to see the status of your TimesTen database restoration. For more information on the Restore History tab, see "Restore history" on page 11-14. For more information on the ttRestore utility, see "ttRestore" in the *Oracle TimesTen In-Memory Database Reference*

You have successfully requested a TimesTen database restoration.

Delete a TimesTen database backup file

To delete a TimesTen database backup file entry or a failed TimesTen database backup entry, ensure that you are on the Backup History tab of the Backup and Restore page:

Note: Ensure that you delete TimesTen backup files from the Backup History table. If you delete TimesTen backup files directly from the file system, Enterprise Manager does not remove the entry from the Backup History table.

1. In the Backup History and Restore Database table, click in the row that identifies the **Backup ID** of your TimesTen backup file or failed TimesTen database backup entry.

View 👻	Restore	🗙 Delet	e 🛃 D	letach								
Backup ID	Backup Type	Backup Director	Backup File Prefix	Recurrence Interval	Backup Start Date	Backup End Date	Status	Reason for Failure	Backup Size (GB)	Elapsed Time (sec)		
hourly_back	Incremental	/scrat	sampledb	1 hr	Mar	Mar	Success		0.08	0		
daily backup	Full	/scrat	sampledb	Daily	Mar	Mar	Success	à	0.08	0		

Figure 11–23 Select your TimesTen database backup file

2. Click Delete.

Figure 11–24 Click Delete

Backup Schedu	e Backup	History	and Restor	e Re	Restore History							
View 👻 📒	Restore	💥 Delet	••••• 🛃 Þ	etach								
			Backup File Prefix		Backup Start Date	Backup End Date	Status	Reason for Failure	Backup Size (GB)	Elapsed Time (sec)		
hourly_back	Incremental	/scrat	sampledb	1 hr	Mar	Mar	Success		0.08	0		
daily_backup	Full	/scrat	sampledb	Daily	Mar	Mar	Success		0.08	0		

The Delete Available Backup dialog displays. Locate the OK button.

3. Click OK.

Figure 11–25 Click OK

lete Available Bacl	kup	
Backup ID	daily_backup	
Backup Type	Full	
Backup Directory	/backup/20150316111223	
Backup File Prefix	sampledb_1122	
Recurrence Interval	Daily	
Backup Start Date	Mar 16, 2015 11:19:25 AM	
Backup End Date	Mar 16, 2015 11:19:26 AM	
Status	Success	
Reason for Failure		
Backup Size (GB)	0.08	
		OKN Cancel

The Delete Available Backup dialog closes and the Backup History tab of the Backup and Restore page refreshes. You can verify that the TimesTen backup entry has been deleted by reviewing the Backup History tab of the Backup and Restore page. You should no longer see your TimesTen backup entry.

You have successfully deleted your TimesTen backup entry from Enterprise Manager and Enterprise Manager deletes the TimesTen backup from your file system.

Restore history

 Backup Schedule
 Backup History and Restore Database
 Restore History

 View •
 X
 Delete...
 Detach

 Backup
 Initiated By
 Restore Restore Start
 Status
 Rean
 Backup for Failure
 Backup Start
 Backup Directory
 Backup Frefix
 Recurrence Interval
 Backup Size (GB)
 Elapsed Time (sec)

 hourly...
 SYSMAN
 Mar...
 Mar...
 Increm...
 /scrat...
 sampl...
 1 hr
 0.08
 7

The restore history tab enables you to review and delete TimesTen database recovery entries.

You can perform these actions on the restore history tab:

Review a restore history entry

Figure 11–26 Restore History tab

Delete a restore history entry

Review a restore history entry

The restore history table shows all of the restore operations that have been performed on the TimesTen database from Enterprise Manager. This information is useful in keeping track of recovery operations and reviewing the causes of recovery failures.

Delete a restore history entry

To delete a TimesTen database restore entry ensure that you are on the Restore History tab of the Backup and Restore page:

1. In the Restore History table, click in the row that identifies the **Backup ID** of your TimesTen database restore entry.

Figure 11–27 Select your TimesTen database recovery entry

Backup Schedule Backup History and Restore Database Restore History												
View 🔻	💥 Del	ete	d 🏹									
Backup ID	Initiated By		Restore End Date	Status	Reason for Failure	Backup Start Date	Backup Type	Backup Directory	Backup File Prefix	Recurrence		Elapsed Time (sec)
hourly	SYSMAN	Mar	Mar	Success		Mar	Increm	/scrat	sampl	1 hr	0.08	7
3												

Locate the Delete button.

2. Click Delete.

Figure 11–28 Click Delete

Backup So	chedule I	Backup H	listory ar	nd Restore	Databas	Res	tore Hist	ory				
View 🔻	💥 Del	ete	🛃 De									
Backup ID	Initiated By	Start	Restore End Date	Status	Reason for Failure	Backup Start Date	Backup Type	Backup Directory	Backup File Prefix	Recurrence Interval	Backup Size (GB)	Elapsed Time (sec)
hourly	SYSMAN	Mar	Mar	Success		Mar	Increm				0.08	7

The Delete Recovery History dialog displays. Locate the OK button.

3. Click **OK**.

Backup ID	daily_backup	
Initiated By	SYSMAN	
Recovery Start Date	Mar 16, 2015 11:58:35 AM	
Recovery End Date	Mar 16, 2015 11:58:42 AM	
Status	Success	
Reason for Failure		
Backup Start Date	Mar 16, 2015 11:27:47 AM	
Backup Type	Incremental	
Backup Directory	/backup/20150316111223	
Backup File Prefix	sampledb_1122	
Recurrence Interval	Daily	
Backup Size (GB)	0.08	
Elapsed Time (secs)	7	

Figure 11–29 Click OK

The Delete Recovery History dialog closes and the Restore History tab of the Backup and Restore page refreshes. You can verify that the TimesTen restore history entry has been deleted by reviewing the Restore History tab of the Backup and Restore page. You should no longer see your TimesTen restore history entry.

You have successfully deleted your TimesTen restore history entry.

Working with the Cache Synchronization Metrics Page

This chapter describes the Cache Synchronization Metrics page.

Topics include:

- Viewing the cache synchronization metrics page
- Analyzing the cache synchronization metrics page

Viewing the cache synchronization metrics page

The cache synchronization metrics shows cache specific performance information. In order to view the metrics, ensure that you have configured a cache environment for your TimesTen target and ensure that the cache agent is up. For more information on configuring a cache environment, see the *Oracle TimesTen Application-Tier Database Cache User's Guide*.

To view the cache synchronization metrics, ensure that you are on the TimesTen target page. For information on navigating to the TimesTen target page, see "Navigating to the TimesTen target page" on page 2-1.

From the **TimesTen Database Home** menu, select **Monitoring**, then select **Cache Synchronization Metrics**.

Analyzing the cache synchronization metrics page

Figure 12–1 shows two cache synchronization metrics tabs that have been customized for TimesTen cache environments. Click a specific tab to view detailed cache synchronization metrics information.

Note: Only one of these tabs is available at a time: Cache Parallel AWT or Cache AWT. If you have set cache AWT parallelism, Enterprise Manager displays the Cache parallel AWT tab. If you have not set cache AWT parallelism, Enterprise Manager displays the Cache AWT tab. For more information on cache AWT parallelism, see "Configuring parallel propagation to Oracle Database tables" in the *Oracle TimesTen Application-Tier Database Cache User's Guide*.

Figure 12–1 Cache Synchronization Metrics tabs

TimesTen Database Home
 Cache Parallel AWT Cache Autorefresh

A description of each area follows:

- Cache AWT
- Cache parallel AWT
- Cache autorefresh

Cache AWT

Note: The Cache AWT tab is only available if you have not set cache AWT parallelism. For more information on cache AWT parallelism, see "Configuring parallel propagation to Oracle Database tables" in the *Oracle TimesTen Application-Tier Database Cache User's Guide*.

The cache AWT tab enables you to view performance information of AWT cache groups. It is divided into five regions:

- Cache AWT
- AWT transactions propagated to the Oracle database
- AWT transactions committed on Oracle database
- AWT batch performance
- AWT volume (MB/sec)

Cache AWT

Figure 12–2 Cache AWT region



The cache AWT region shows the number of transactions committed on the Oracle database and the number of transactions rolled back on the Oracle database. The number of batches sent, bytes sent, rows deleted, rows inserted, and rows updated on the Oracle database for the SQL array execution method and the PL/SQL execution method of AWT cache are also displayed. The performance data is derived from values in the SYS.SYSTEMSTATS system table. For more information, see "SYS.SYSTEMSTATS" in the Oracle TimesTen In-Memory Database System Tables and Views Reference.

The method determines whether TimesTen uses the PL/SQL execution method or the SQL array execution method to apply changes to the Oracle database server for asynchronous writethrough propagation.

For more information about AWT cache methods, see "TimesTen Cache first connection attributes" in the *Oracle TimesTen In-Memory Database Reference*.

AWT transactions propagated to the Oracle database



Figure 12–3 AWT Transactions Propagated to the Oracle Database region

The AWT transactions propagated to the Oracle database region uses a line graph to show the number of AWT transactions propagated to the Oracle database per second.

AWT transactions committed on Oracle database





The AWT transactions committed on Oracle database region uses a line graph to show the number of AWT transactions committed on the Oracle database per second.

AWT batch performance

AWT Batch Performance

Rows/batch in SQL mode
 Rows/batch in PLSQL mode

Figure 12–5 AWT Batch Performance region

The AWT batch performance region uses a line graph to show AWT Batch performance represented as a rate of rows per batch. SQL array execution mode is set with CacheAWTMethod=0 and PL/SQL execution mode is set with CacheAWTMethod=1. For more information on CacheAWTMethod, see "CacheAWTMethod" in the Oracle TimesTen In-Memory Database Reference.

AWT volume (MB/sec)





The AWT volume (MB/sec) region uses a line graph to show the AWT volume in Megabytes per second.

Cache parallel AWT

Note: The Cache parallel AWT tab is only available if you have set cache AWT parallelism. For more information on cache AWT parallelism, see "Configuring parallel propagation to Oracle Database tables" in the *Oracle TimesTen Application-Tier Database Cache User's Guide*.

The cache parallel AWT tab displays track and performance information about AWT cache groups that are configured with parallel propagation. For more information on

parallel propagation for AWT cache groups, see "Configuring parallel propagation to Oracle Database tables" in the *Oracle TimesTen Application-Tier Database Cache User's Guide*. The cache parallel AWT tab is divided into two sub-tabs:

- Performance
- Tracks

Performance

The performance sub-tab provides performance information about AWT cache groups that are configured with parallel propagation. The performance sub-tab is divided into four regions:

- AWT lag
- AWT bytes sent
- AWT batch performance
- AWT transactions

AWT lag

Figure 12–7 AWT Lag region



The AWT lag region uses a line graph to show the number of AWT transactions propagated to the Oracle database and generated on the TimesTen database per second.

It is important that the number of AWT transactions propagated to the Oracle database match the number of AWT transactions generated on the TimesTen database. For more information on troubleshooting AWT performance, see "AWT performance monitoring" in the *Oracle TimesTen In-Memory Database Troubleshooting Guide*.

AWT bytes sent



Figure 12–8 AWT Bytes Sent region

The AWT bytes sent region uses a line graph to show the bytes sent per batch in SQL mode and PLSQL mode per second. SQL array execution mode is set with CacheAWTMethod=0 and PL/SQL execution mode is set with CacheAWTMethod=1. For more information on CacheAWTMethod, see "CacheAWTMethod" in the *Oracle TimesTen In-Memory Database Reference*.

AWT batch performance



Figure 12–9 AWT Batch Performance region

The AWT batch performance region uses a line graph to show the number of full and partial batches applied per second.

AWT transactions

Figure 12–10 AWT Transactions region



The AWT transactions region uses a line graph to show the number of commits and transactions per second.

Tracks

The tracks sub-tab provides performance information about parallel AWT tracks. The tracks sub-tab is divided into two regions:

- Parallel AWT tracks
- Transactions processed on Oracle database

Parallel AWT tracks

Figure 12–11 Parallel AWT Tracks region

Parallel	AWT Tracks								
Peer Name	Transactions		PLSQL Mode Batches	Oracle Database Rollbacks	Batches Sent Fully	Batches Sent Partially		Depend Begin Waits Count	Depend Commi Waits Count
ORACLE(2148	0	1467	94	0	0	3	1122	18
ORACLE(1942	0	1318	72	0	0	3	1035	10
ORACLE(1836	0	1123	68	0	0	4	887	14
ORACLE(1905	0	1494	120	0	0	2	1002	17

The Parallel AWT tracks region shows the performance of the various parallel AWT tracks. Parallel AWT tracks are set with the CacheAWTParallelism connection attribute. For more information on the CacheAWTParallelism connection attribute, see "CacheAWTParallelism" in the *Oracle TimesTen In-Memory Database Reference*.

Click a peer name to review the number of transactions processed on the Oracle database for the parallel AWT track. The number of transactions processed on the Oracle database for the parallel AWT track display in the transactions processed on Oracle database region. For more information on the transactions processed on Oracle database region, see "Transactions processed on Oracle database" on page 12-8.

Transactions processed on Oracle database

Figure 12–12 Transactions Processed on Oracle database region



The transactions processed on Oracle database region uses a line graph to show the number of transactions processed on the Oracle database for the parallel AWT track.

Cache autorefresh

The cache autorefresh tab enables you to view performance information of read-only cache groups. This tab is divided into three regions:

- Cache autorefresh
- Readonly cache
- Updates pending refresh

Cache autorefresh

Figure 12–13 Cache Autorefresh region

⊿ Cache Autorefresh	
Cycles completed successfully on TimesTen	966
Number of cycles that failed due to errors	0
Rows deleted in TimesTen from Oracle database	81511
Rows inserted in TimesTen from Oracle database	281511
Rows updated in TimesTen from Oracle database	16968
Full refreshes triggered	0
Database Loaded Since	November 24, 2014 12:16 PM

The cache autorefresh region shows the number of rows deleted, inserted, and updated in TimesTen from the Oracle database. The number of cycles that completed successfully and the number of cycles that failed on TimesTen are also displayed. TimesTen starts collecting these metrics when the TimesTen database is loaded into memory.

Readonly cache

Figure 12–14 Readonly Cache region

A Read	Readonly Cache								
Cache Group ID	Start Time		Number of Rows Autorefreshed	Status	Cache Group Name	Cache Group Owner	Number of Updates Pending Refresh		Refresh Interval(ms)
3941064	2014-08	0	6992	Compl	READCACHE	CACHEUSER	0	1	5000
3941096	2014-08	0	7990	Compl	READCACHE2	CACHEUSER	0	1	5000

The readonly cache region displays information about the last autorefresh operations of each of the read-only cache groups of your TimesTen database. For more information on read-only cache groups, see "Read-only cache group" in the *Oracle TimesTen Application-Tier Database Cache User's Guide*.

Click a cache group ID to review the number of updates pending refresh. The number of updates pending refresh display in the updates pending refresh region. For more information on the updates pending refresh region, see "Updates pending refresh" on page 12-9.

Updates pending refresh





The updates pending refresh region shows a line graph with the number of updates pending refresh for your specified cache group in the last hour.

Working with the Replication Monitor

This chapter describes the replication monitor page. The replication monitor page enables you to monitor and analyze TimesTen database targets that use AWT cache groups and that use replication to replicate objects to other databases.

Topics include:

- Viewing the replication monitor
- Analyzing information on the TimesTen replication monitor

Viewing the replication monitor

In order to view the replication monitor metrics, ensure that you have configured replication for your TimesTen database target and ensure that the replication agent is up.

Navigate to the TimesTen database target page. For information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

From the **TimesTen Database Home** menu, select **Monitoring**, then select **Replication Monitor**.

Analyzing information on the TimesTen replication monitor

The TimesTen replication monitor page consists of two areas each of which have been customized specifically for TimesTen replication.

The top area consists of:

- Summary
- Status
- State

The bottom area consists of five tabs:

- Replication peers
- Replication log holds
- Transmitter thread status
- Receiver thread status
- Tracks

Summary

Figure 13–1 Summary region

Summary	
Database Name	master
Replication Policy	Manual

This region identifies your database and the configuration of your replication policy:

Database name

This value is taken from the last part of the path to the database. For example, if the path to the database is /var/tt/master, the database name is master.

Replication policy

The replication policy is set with the -repPolicy option of the ttAdmin utility. The default value is manual. For more information on changing the replication policy, see "ttAdmin" in the *Oracle TimesTen In-Memory Database Reference*.

Status

Figure 13–2 Status region

Status	
Replication Agent	Up
Most Recent Log File Number	2
Last Log File Number Held by Replication	2

The replication status region shows overall information relative to the current state of the replicated operations. If the most recent log file number is much greater than the last log file held by replication, then the replication agent has fallen behind in transmitting the recently created transactions.

Values for Replication Agent are Up, Down, or N/A. If you have not configured a replication scheme, then the value is N/A.

State





The replication state region shows the current replication state of a database in an active standby pair.

The replication state region uses values from the ttRepStateGet built-in procedure. For more information about ttRepStateGet, see "ttRepStateGet" in the Oracle TimesTen In-Memory Database Replication Guide.

Replication peers

Figure 13–4 Replication Peers region

Replication Peers Replicaton Log H		Holds Transmitte	er Thread Status	Receiver Thread Status	Tracks
View 👻 🛃 🖸	etach				
Name	Hostname	State	Port and S	itatus	
SUBSCRIBER	ADC6180302	Started	56313 (AU	ЛО) (Connected)	
SUBSCRIBER	ADC6180302	Started	56313 (AU	JTO) (Connected)	
SUBSCRIBER	ADC6180302	Started	56313 (AU	ЛО) (Connected)	
SUBSCRIBER	ADC6180302	Started	56313 (AU	JTO) (Connected)	

The replication peers table is common to any database regardless of whether the database is in the role of transmitter or receiver. The table shows the list of peers to the database.

The replication peers table uses values from the TTReplication.ReplicationPEERS replication table. You can also view these values with the ttRepAdmin -showstatus utility. For more information about the TTReplication.ReplicationPEERS replication table, see "TTReplication.ReplicationPEERS" in the Oracle TimesTen In-Memory Database System Tables and Views Reference. For more information about the ttRepAdmin utility, see "ttRepAdmin" in the Oracle TimesTen In-Memory Database Reference.

Replication log holds

Figure 13–5 Replication Log Holds region

Replication Peers	Replicaton Log H	folds Transmitter Thr	ead Status Receiv	ver Thread Status	Tracks
View 👻 🛃	Detach				
Peer Name	Hostname	Last Message Sent	Log File Number	Latency	Track
SUBSCRIBER	TESTHOST	00:00:03	2	-1.0	0
SUBSCRIBER	TESTHOST	00:00:03	2	-1.0	0
SUBSCRIBER	TESTHOST	00:00:03	2	-1.0	0
SUBSCRIBER	TESTHOST	00:00:03	2	-1.0	0

The replication log holds table shows information for databases that replicate transactions to other databases. The table shows replication log holds.

The replication log holds table uses values from the ttLogHolds built-in procedure. For more information about the ttLogHolds utility, see "ttLogHolds" in the *Oracle TimesTen In-Memory Database Reference*.

Transmitter thread status

The transmitter thread status tab shows a detailed list and status of transmitter threads for this TimesTen database. This tab is populated for databases that replicate transactions to other databases. This tab is divided into two regions:

- Replication transmitters
- Transactions sent in the last hour

Replication transmitters

eplication Peers	Replicaton Log Holds	Transmitter Thr	ead Status	Receiver Thread Status	Tracks
Replication	Francmitters				
Peer Name	Start or I Count	Restart Transact	ions Sent		
SUBSCRIBER (trad	k0) 1	1			
SUBSCRIBER (trac	k 1) 1	4			
SUBSCRIBER (trac	k 2) 1	1001			
SUBSCRIBER (trac	k 3) 1	2997			

Figure 13–6 Replication Transmitters region

The replication transmitters table shows information for databases that replicate transactions to other databases. The table shows the status of transmitter threads for the database.

The replication transmitters table uses values from the ttRepAdmin -showstatus utility. For more information about the ttRepAdmin utility, see "ttRepAdmin" in the *Oracle TimesTen In-Memory Database Reference*.

Click a transmitter track to review the number of transactions sent on that track. The number of transactions sent in the last hour display in the transactions sent in the last hour region. For more information on the transactions sent in the last hour region, see "Transactions sent in the last hour" on page 13-4.

Transactions sent in the last hour



Figure 13–7 Transactions Sent in the Last Hour region

The transactions sent in the last hour region shows a line graph with the number of transactions sent for your specified transmitter track and average number of transactions sent per transmitter track per second.

Receiver thread status

The receiver thread status tab shows a detailed list and status of receiver threads for this TimesTen database. This tab is populated for databases that receive transactions from other databases. This tab is divided into two regions:

- Replication receivers
- Transactions received in the last hour

Replication receivers

eplication Peers	Replicaton Log Holds	Transmitter Thread St	atus Receiver Thread Status Tracks
Replication	Receivers		
Peer Name	Start or Restart Count	Transactions Received	
MASTER (track 0)	1	1999	
MASTER (track 1)	1	2002	
MASTER (track 2)	1	3000	
MASTER (track 3)	1	5994	

Figure 13–8 Replication Receivers region

The receiver threads status table shows information for databases that receive transactions from other databases. The table shows the status of receiver threads for the database.

The replication receivers table uses values from the ttRepAdmin -showstatus utility. For more information about the ttRepAdmin utility, see "ttRepAdmin" in the Oracle TimesTen In-Memory Database Reference.

Click a receiver track to review the number of transactions received on that track. The number of transactions received in the last hour display in the transactions received in the last hour region. For more information on the transactions received in the last hour region, see "Transactions received in the last hour" on page 13-5.

Transactions received in the last hour



Figure 13–9 Transactions Received in the Last Hour region

The transactions received in the last hour region shows a line graph with the number of transactions received for your specified receiver track and average transactions received per receiver track per second.

Tracks

Figure 13–10 Tracks tab

Replica	tion Peers	Replicaton Log H	olds Transm	nitter Thread	Status Re	eceiver Thread Stat	tus Tracks
View 🗸 🚮 Detach							
Track	Transaction Log Waits	Receiver Transaction Commit Waits	Receiver Transaction Commits	Receiver Batch Commits	Receiver Ba Commit Tin		Subscriber
0	0	0	2001	93	0	MASTER(T	MASTER
1	0	0	2002	161	0	MASTER(T	MASTER
2	0	0	3000	242	0	MASTER(T	MASTER
3	0	0	5994	80	0	MASTER(T	MASTER
0	0	0	0	0	0	SUBSCRIB	SUBSCRIBER
1	0	0	0	0	0	SUBSCRIB	SUBSCRIBER
2	0	0	0	0	0	SUBSCRIB	SUBSCRIBER
3	0	0	0	0	0	SUBSCRIB	SUBSCRIBER

The tracks tab uses a table to show performance information about each track. This information can help you determine the location of transaction bottlenecks.

14

Viewing Metrics

This chapter details metric information collected for your TimesTen database and TimesTen instance to assist you in determining the efficiency and performance of your target.

Topics include:

- Navigating to the TimesTen database metrics page
- Navigating to the TimesTen instance metrics page
- Viewing TimesTen database metrics
- Viewing TimesTen instance metrics

Navigating to the TimesTen database metrics page

Ensure that you are on the TimesTen database target page. For more information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

1. From the **TimesTen Database Home** menu, select **Monitoring**, then select **All Metrics**.

Figure 14–1 TimesTen database All Metrics



The All Metrics page displays. Locate the name of the metric group.

2. Expand the metric group, and click the name of the metric.

The metric information displays in table format. For more information on TimesTen database metrics, see "Viewing TimesTen database metrics" on page 14-2.

Navigating to the TimesTen instance metrics page

Ensure that you are on the TimesTen instance target page. For more information on navigating to the TimesTen instance target page, see "Navigating to the TimesTen target page" on page 2-1.

1. From the or **TimesTen Instance Home** menu, select **Monitoring**, then select **All Metrics**.

Testhost.tt1122 3 TimesTen Instance Home • Home Monitoring Þ All Metrics Metric and Collection Settings Control • Job Activity Metric Collection Errors Information Publisher Reports Status History Configuration • Incident Manager Compliance ۲ Alert History Blackouts Target Setup Þ Target Sitemap Target Information

Figure 14–2 TimesTen Instance All Metrics

The All Metrics page displays. Locate the name of the metric group.

2. Expand the metric group, and click the name of the metric.

The metric information displays in table format. For more information on TimesTen instance metrics, see "Viewing TimesTen instance metrics" on page 14-27.

Viewing TimesTen database metrics

There are twelve groups of TimesTen database metrics:

All M	etrics
earch	
View	4 計画 2
	thost.tt1122.sampledb_1122
	Checkpoint History
	Checkpoint and Transaction Log File System Usage
	Database Information
	Instance Information
	Parallel AWT Rates
	Parallel AWT Tracks
	Performance Data 1 [from Cache to Cache Grid]
	Performance Data 2 [from Lock to Transaction] Performance Rates
	Readonly Cache
	Replication Peers
	Replication Status
	Replication Subscribers
	Replication Tracks
	Replication state
	Response
	50L Command Cache
	SOL Execution Time Histogram
	Transaction Log Holds
	Other collected items

Figure 14–3 Groups of metrics

- Checkpoint history
- Checkpoint and transaction log file system usage
- Database information
- Instance information
- Parallel AWT Rates
- Parallel AWT Tracks
- Performance data
- Performance rates
- Readonly cache
- Replication peers
- Replication status
- Replication subscribers
- Replication tracks
- Replication state
- Response
- SQL command cache
- SQL execution time histogram
- Transaction log holds

Some metrics have predefined warning and critical thresholds. You can modify and add new thresholds. The Oracle Enterprise Manager Cloud Control issues alerts and warnings when the values collected for the metrics surpass the set threshold.

Checkpoint history

Table 14–1 lists each metric and describes the metrics.

Metric	Description
Blocks currently in use out of total blocks	The number of blocks that are currently in use.
Bytes occupied by all blocks	The number of bytes occupied by all blocks.
Bytes occupied by blocks in use	The number of bytes occupied by the blocks that are in use.
Bytes occupied by dirty blocks	The number of bytes occupied by dirty blocks.
Bytes written in MB	Bytes written in megabytes.
Bytes written per sec	Bytes written per second.
Checkpoint sequence number	Checkpoint sequence number.
Dirty blocks written by this checkpoint	The number of dirty blocks written by this checkpoint.
Percentage of the checkpoint that has been completed	Indicates the percentage of the checkpoint that has been completed. If there is no checkpoint in progress, the value is NULL.
Permanent blocks currently allocated in the database	Permanent blocks currently allocated in the database.
Status of the checkpoint operation	Status of the checkpoint operation.
The database file number used by the checkpoint	The database file number used by the checkpoint.
The source of the checkpoint request	The source of the checkpoint request.
The transaction log file number of the checkpoint log record	The transaction log file number of the checkpoint log record.
The transaction log file offset of the checkpoint log record	The transaction log file offset of the checkpoint log record.
The type of checkpoint	The type of checkpoint.
Time when the checkpoint completed	Time when the checkpoint completed.
Time when the checkpoint was begun	Time when the checkpoint began.
TimesTen database error number for the failure	TimesTen error number that indicates the reason for the failure.
Total bytes written by this checkpoint	The total number of bytes written by this checkpoint.

Table 14–1Checkpoint History

Checkpoint and transaction log file system usage

Table 14–2 lists each metric and describes the metrics.

 Table 14–2
 Checkpoint and Transaction Log File System Usage

_	
Metric	Description
Checkpoint file system	Checkpoint file system.
Checkpoint file system mount Point	Checkpoint file system mount point.
Checkpoint file system size (MB)	Checkpoint file system size in megabytes.
Checkpoint file system space available (%)	Checkpoint file system space available (expressed as a percentage).
Checkpoint file system space available (MB)	Checkpoint file system space available in megabytes.

Metric	Description
Transaction log file system	Transaction log file system.
Transaction log file system mount point	Transaction log file system mount point.
Transaction log file system size (MB)	Transaction log file system size in megabytes.
Transaction log file system space available (%)	Transaction log file system space available (expressed as a percentage).
Transaction log file system space available (MB)	Transaction log file system space available in megabytes.

 Table 14–2 (Cont.) Checkpoint and Transaction Log File System Usage

Database information

Table 14–3 shows information about your database.

Table 14–3Database Information

Database information	Description		
Active standby pair table creation replication	Database attribute is DDLReplicationAction.		
	If set to 'INCLUDE' (the default): When a table is created, the table is automatically added to the active standby pair scheme.		
	If set to 'EXCLUDE': When a table is created, the table is not automatically included in the active standby pair.		
Amount of data in log between background checkpoints	Amount of data in megabytes that collects in log between background checkpoints.		
Binding style for duplicate SQL parameters	Determines whether applications use TimesTen or Oracle parameter binding for duplicate occurrences of a parameter in a SQL statement. If 0, Oracle-style binding.		
Cache agent policy	Cache agent policy (always, manual).		
Cache agent running	1 if running; 0 if not running.		
Character encoding for the connection	Character encoding for the connection. May be different than database character set.		
Commit operations should write log records to disk	If set (=1), commit operations write log records to disk.		
Controls conditional compilation of PL/SQL units	Controls conditional compilation of PL/SQL units.		
Controls transactional commit behavior in relation to DDL	Controls transactional commit behavior in relation to DDL. If 0, Oracle. If 1, Timesten.		
Delete unneeded transaction log files during checkpoint	If 1, transaction log files are deleted during a checkpoint operation.		
Determines if commands are shared between connections	Determines if commands are shared between connections.		
Determines whether PL/SQL is enabled	Determines if PL/SQL is enabled. (1 = enabled.)		

Table 14–3 (Cont.) Databa	ase information	
Database information	Description	
Enables AWT propagation	Database attribute is CacheAWTMethod.	
method on Oracle database tables	Determines whether PL/SQL execution method or SQL array execution method is used for Asynchronous Writethrough propagation to apply changes to the Oracle server.	
	If 0, SQL array execution method is used.	
	If 1 (the default), PL/SQL execution method is used.	
Enables cache grid	If set (=1), cache grid is enabled.	
Enables transparent load to dynamic cache groups	If set (=1), enables transparent load of Oracle data to dynamic cache groups.	
Error returned upon transparent load failure	If set (=1), error message is returned if there is a transparent load failure.	
Expected upper bound for concurrent connections	Indicates the expected upper bound on the number of concurrent connections to the database.	
Frequency in seconds for background checkpoint	Frequency in seconds that TimesTen performs a background checkpoint.	
Identifies the character set used by the database	Identifies the character set used by the database.	
Identifies the physical database	Identifies the physical database.	
Is error reported for data loss from character type conversion	Determines if error is reported when there is data loss during an implicit or explicit character type conversion between NCHAR/NVARCHAR2 and CHAR/VARCHAR2 data.	
Isolation level read committed or serializable	Specifies whether the isolation level is read committed or serializable. If 1, read committed.	
Level of DDL replication	Database attribute is DDLReplicationLevel.	
enabled	If 1, replicates ALTER TABLE ADD or DROP COLUMN to the standby database. Does not replicate CREATE and DROP operations for tables, indexes or synonyms to the standby database.	
	If 2 (the default), replicates creating and dropping of tables, indexes and synonyms.	
Location of PL/SQL memory segment	Virtual address of PL/SQL shared memory segment that is loaded into each process that uses the TimesTen "direct" drivers.	
Lock wait interval	Lock wait interval for connection.	
Log buffer strands	Number of log buffer strands.	
Max rate data written to disk during checkpoint	Maximum rate data that TimesTen writes to disk during a checkpoint operation.	
Maximum process heap memory PL/SQL can use for this connection	Specifies the maximum amount of process heap memory in megabytes that PL/SQL can use for the connection.	
Method used to write and sync log data to transaction log files	Method used to write and sync log data to transaction log files. If 1, TimesTen uses buffered writes to write data to transaction log files.	
Optimization level used to compile PL/SQL library units	Optimization level used to compile PL/SQL library units.	

Table 14–3 (Cont.) Database Information

Database information	Description	
Oracle Service Name of Oracle instance from which data is loaded	Oracle Service Name of the Oracle database instance from which data is to be loaded into a TimesTen database.	
PL/SQL memory segment size	Size in megabytes of the PL/SQL shared memory segment used by PL/SQL.	
Parallel replication apply	Database attribute is ReplicationApplyOrdering.	
ordering	If 0 (the default), specifies commit ordering parallel replication.	
	If 1, specifies user-managed track based parallel replication.	
Query timeout threshold	Time limit in seconds that the database can execute a SQL statement before timing out.	
RAM residence policy	Ram residence policy (always, manual, inUse).	
Replication agent running	1 if running; 0 if not running.	
Replication policy	Replication policy (always, manual, norestart).	
Row-level or database-level locking	Specifies whether the connection uses row-level locking (value = 0) or database-level locking (value =1).	
SQL statement pass through to Oracle database mode	Specifies if SQL statements are passed through to Oracle, or executed locally in TimesTen, or both.	
Sets the maximum message wait time	Sets the maximum message wait time.	
Size in MB of the permanent region of the database	Size in megabytes of the permanent region of the database.	
Size in MB of the temporary region of the database	Size in megabytes of the temporary region of the database.	
Specifies that disk space should be preallocated when created	Specifies that disk space for the database should be preallocated when creating the database.	
Specifies that the database is not saved to disk	Specifies that database is not saved to disk.	
Terminate connect if recovery encounters defective log record	Determines whether the first connection to the database should proceed if TimesTen recovery encounters a defective log record. If 1, TimesTen continues after log is truncated.	
The collating sequence to use for linguistic comparisons	Collating sequence to use for linguistic comparisons. Default is binary.	
The default length semantics configuration	Default length semantics configuration. Default is byte.	
The directory where transaction log files are stored	The directory where transaction log files are stored.	
The size of the internal log buffer in MB	Size of the internal log buffer in megabytes.	
The transaction log file size in MB	Transaction log file size in megabytes.	
The type mode for the database	Type mode for database. If 0, Oracle database type mode. If 1, TimesTen type mode.	

 Table 14–3 (Cont.) Database Information

Database information	Description		
Thread count to apply changes on active master database	Number of threads used to apply changes on the active master database to the standby master database in an active standby pair replication scheme.		
Thread count to rebuild indexes during recovery	Number of threads used to rebuild indexes during recovery.		
Threshold for warning when permanent region low in memory	Threshold at which TimesTen returns a warning and throws an SNMP trap when the permanent region of the database is low ir memory.		
Threshold for warning when temporary region low in memory	Threshold at which TimesTen returns a warning and throws an SNMP trap when the temporary region of the database is low in memory.		
Time PL/SQL procedure can run before being terminated	Number of seconds a PL/SQL procedure runs before being automatically terminated.		
Time of first connection to database	Time of first connection to the database.		
Tracks available for parallel replication	Database attribute is ReplicationParallelism.		
	Possible values are between 1 and 64, indicating the number of tracks to replicate in parallel. The default is 1 indicating single-threaded replication.		
What type of logging should be performed for the database	Type of logging used for the database. Only logging to disk is supported (value = 1).		
Whether PL/SQL compiler generates cross-reference information	Determines if PL/SQL compiler should generate cross-reference information.		
Whether error returned if query times out before executing	Indicates whether TimesTen should write a warning to the support log and throw an SNMP trap when execution time of a SQL statement exceeds the specified value. If 0, TimesTen does not return a warning.		
Whether real memory should be locked during database load	Specifies whether connections to a shared database should lock real memory during database loading.		
Whether to enable installation of TAF FAN callbacks	Specifies whether to enable or disable installation of Transparent Application Failover (TAF) and Fast Application Failover (FAB) callbacks when using Oracle Real Application Clusters (Oracle RAC) with TimesTen Cache.		

Table 14–3	(Cont.)	Database	Information
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Instance information

Table 14–4 shows information about your TimesTen instance.

Name	Description
Daemon port number	Daemon port number.
Instance name	TimesTen instance name.
Platform type	Platform type. For example, Linux/86_32.
TimesTen server process identifier	TimesTen server process identifier.

Table 14–4 Instance Information
Name	Description
TimesTen server port number	Server port number.
TimesTen server running	1 if running, 0 if not running.
TimesTen version number	Five-digit release number.

Table 14–4 (Cont.) Instance Information

For more information on your TimesTen instance, see "ttStatus" in the *Oracle TimesTen In-Memory Database Reference*.

Parallel AWT Rates

Table 14–5 shows information about your Parallel AWT Rates.

Name	Description
Bytes sent in PL/SQL mode MB per sec	The number of megabytes sent in PL/SQL mode to the Oracle database per second.
Bytes sent in SQL mode MB per sec	The number of megabytes sent in SQL mode to the Oracle database per second.
Oracle database Rollbacks Timeout per sec	The timeout per second for rollbacks on the Oracle database.
Total AWT MB per sec	The number of megabytes sent for AWT to the Oracle database per second.
Total number of Oracle database commits per sec	The total number of Oracle database commits per second.
Total number of batches sent fully per sec	The total number of batches sent fully per second.
Total number of batches sent partially per sec	The total number of batches sent partially per second.
Total number of transactions per sec	The total number of transactions sent to the Oracle database per second.
Transaction master restart per sec	The number of transaction master restarts per second.
Transactions Generated on TimesTen database per sec	The number of transactions generated on the TimesTen database per second.
Transactions propagated to Oracle database per sec	The number of transactions propagated to the Oracle database per second.

Table 14–5 Parallel AWT Rates

Parallel AWT Tracks

Table 14–6 shows information about your Parallel AWT Tracks.

 Name
 Description

 Batches Begin Waited
 The number of AWT batches that had to wait on a begin dependency before being transmitted between the TimesTen database and the Oracle database.

 Table 14–6
 Parallel AWT Tracks

Name	Description
Batches Begin Waits Count	The number of times the AWT batch had to check on a begin dependency to be satisfied before being transmitted between the TimesTen database and the Oracle database.
Commit Waited Count	The number of times the AWT batch had to check on a commit dependency to be satisfied before the AWT batch is committed on the Oracle database.
Full Batches	The number of full AWT batches transmitted between the TimesTen database and the Oracle database.
Oracle database Rollbacks	The number of rollbacks performed on the Oracle database.
PL/SQL Mode Batches	The number of AWT batches transmitted between the TimesTen database and the Oracle database in PL/SQL mode.
Partial Batches	The number of partial AWT batches transmitted between the TimesTen database and the Oracle database.
SQL Mode Batches	The number of AWT batches transmitted between the TimesTen database and the Oracle database in SQL mode.
Subscriber	The name of the subscriber database.
Track	The track number.
Transaction processed	The total number of transactions processed.
Transactions processed per sec	The number of transactions processed per second.

Table 14–6 (Cont.) Parallel AWT Tracks

Performance data

Table 14–7 shows performance information.

Metric	Description
Cache - AWT transactions committed on Oracle database	Number of AWT transactions committed on the Oracle database
Cache - AWT transactions re-tries in case of an error	Number of times AWT transactions are re-tried on Oracle database.
Cache - Autorefresh cycles completed successfully	Number of autorefresh cycles completed successfully on TimesTen.
Cache - Autorefresh cycles that failed due to errors	Number of autorefresh cycles that failed because of errors.
Cache - Batches sent to Oracle database in SQL mode	Number of batches sent to the Oracle database in SQL mode (CacheAWTMethod = 0).
Cache - Bytes flushed to Oracle database	Number of bytes flushed to the Oracle database.
Cache - Bytes loaded due to dynamic load miss-local	Total number of bytes loaded from the Oracle database for servicing dynamic load misses for dynamic local cache groups.
Cache - Bytes loaded due to dynamic load misses	Total number of bytes loaded from the Oracle database for servicing dynamic load misses.

 Table 14–7
 Performance Data

Metric	Description
Cache - Bytes sent to Oracle database for SWT operations	Number of bytes sent to the Oracle database during SWT cache group operations.
Cache - Bytes sent to Oracle database in PL/SQL mode	Number of bytes sent to the Oracle database in PL/SQL mode (CacheAWTMethod = 1).
Cache - Bytes sent to Oracle database in SQL mode	Number of bytes sent to the Oracle database in SQL mode (CacheAWTMethod = 0).
Cache - Calls made to Oracle database for AWT	Number of calls made to the Oracle database for AWT.
Cache - Data loads from Oracle database for dynamic load misses	Number of data loads from the Oracle database when servicing dynamic load misses for dynamic local cache groups.
Cache - Data requests due to dynamic load on remote cache grid member	Number of requests for data received by this cache grid member from another cache grid member (because of a dynamic load on the remote cache grid member).
Cache - Data requests received for dirty data	Number of requests for data received by this cache grid member when the data requested is dirty (and must first be propagated to the Oracle database).
Cache - Data requests received where data not present	Number of requests for data received by this cache grid member when the data requested was not found in this member.
Cache - Data requests received where locked by transaction	Number of requests for data received by this cache grid member when the data requested was locked by a transaction on this member.
Cache - Delete batches sent to Oracle database in SQL mode	Number of delete batches sent to the Oracle database in SQL mode (CacheAWTMethod = 0).
Cache - Dynamic load misses from the Oracle database	Number of times a dynamic load miss had to load the requested data from the Oracle database.
Cache - Flush cache group executes	Number of flush cache group executions.
Cache - Full refreshes triggered during autorefresh operations	Number of full refreshes triggered during autorefresh operations.
Cache - Global dynamic cachegroup cache hits	Global dynamic cache group hits: Dynamic loads that find the data in the local cache grid member without requiring the data to be loaded from the Oracle database or another cache grid member.
Cache - Global dynamic cachegroup cache misses	Global dynamic cache group misses: Dynamic loads that do not find data initially in the local cache grid member (either need to go to the Oracle database or another cache grid member).
Cache - Insert batches sent to Oracle database in SQL mode	Number of insert batches sent to the Oracle database in SQL mode (CacheAWTMethod = 0).
Cache - Local dynamic cachegroup cache hits	Local dynamic cache group hits: Number of dynamic loads that find the requested data in the database.
Cache - Local dynamic cachegroup misses	Local dynamic cache group misses: Number of dynamic loads that do not find the requested data in the database and need to load the data from the Oracle database.

 Table 14–7 (Cont.) Performance Data

Table 14–7 (Cont.) Performance Data		
Metric	Description	
Cache - PL/SQL block batches sent to Oracle database	Number of PL/SQL block batches sent to the Oracle database. (CacheAWTMethod = 1).	
Cache - Remote dynamic loads	Dynamic loads that do not find data in the local cache grid member and successfully load the required data from another cache grid member.	
Cache - Rollbacks on Oracle database because of errors	Number of rollbacks on Oracle database because of errors.	
Cache - Rows deleted in the TimesTen database by autorefresh	Number of rows deleted from TimesTen during autorefresh from the Oracle database.	
Cache - Rows deleted on Oracle database in PL/SQL	Number of rows deleted from Oracle database in PL/SQL mode (CacheAWTMethod = 1).	
Cache - Rows deleted on Oracle database in SQL	Number of rows deleted from the Oracle database in SQL mode (CacheAWTMethod = 0).	
Cache - Rows flushed to Oracle database	Number of rows flushed to the Oracle database.	
Cache - Rows in SWT cache groups deleted on Oracle database	Number of rows in SWT cache groups deleted from Oracle database.	
Cache - Rows in SWT cache groups inserted on Oracle database	Number of rows in SWT cache groups inserted into Oracle database.	
Cache - Rows in SWT cache groups updated on Oracle database	Number of rows in SWT cache groups updated on Oracle database.	
Cache - Rows inserted in the TimesTen database by autorefresh	Number of rows inserted into TimesTen during autorefresh from the Oracle database.	
Cache - Rows inserted on Oracle database in PL/SQL mode	Number of rows inserted into Oracle database in PL/SQL mode (CacheAWTMethod = 1).	
Cache - Rows inserted on Oracle database in SQL mode	Number of rows inserted into Oracle database in SQL mode (CacheAWTMethod = 0).	
Cache - Rows updated in the TimesTen database by autorefresh	Number of rows updated in TimesTen during autorefresh from the Oracle database.	
Cache - Rows updated on Oracle database in PL/SQL mode	Number of rows updated on Oracle database in PL/SQL mode (CacheAWTMethod = 1).	
Cache - Rows updated on Oracle database in SQL mode	Number of rows updated on Oracle database in SQL mode (CacheAWTMethod = 0).	
Cache - Transactions propagated from TimesTen to Oracle database	Number of TimesTen transactions propagated to the Oracle database.	
Cache - Update batches sent to Oracle database in SQL mode	Number of updated batches sent to the Oracle database in SQL mode (CacheAWTMethod = 0).	

Table 14–7 (Cont.) Performance Data

Metric	Description
Cache grid - Cache grid members that have attached so far	Number of attach operations.
Cache grid - Detach operations	Number of detach operations.
Checkpoint - Bytes written during last checkpoint	Number of bytes written during last checkpoint.
Checkpoint - Checkpoint bytes written during database recovery	Number of bytes written for checkpointing during database recovery.
Checkpoint - Checkpoint volume in bytes	Number of bytes written for checkpointing.
Checkpoint - Checkpoint writes	Number of checkpoint writes.
Checkpoint - Checkpoints completed	Number of checkpoints completed.
Checkpoint - End time of last checkpoint begun	End time of last checkpoint begun.
Checkpoint - Fuzzy checkpoints completed	Number of fuzzy checkpoints completed.
Checkpoint - Start time of last checkpoint begun	Start time of last checkpoint begun.
Checkpoint - Status of last checkpoint begun	Status of last checkpoint begun. For instance, completed.
Checkpoint - Type of last checkpoint begun	Type of last checkpoint begun. For example, fuzzy.
Checkpoint - Whether last checkpoint begun had an error	Whether last checkpoint begun had an error.
Client/Server - ALTER statements executed by server	Number of ALTER statements executed by server.
Client/Server - CREATE statements executed by server	Number of CREATE statements executed by server.
Client/Server - Bytes received by server	Number of client/server bytes received by server.
Client/Server - Bytes transmitted by server	Number of client/server bytes transmitted by server.
Client/Server - Disconnects	Number of client/server disconnects.
Client/Server - Round trips	Number of client/server round-trips.
Client/Server - DELETE statements executed by server	Number of DELETE statements executed by server.
Client/Server - DROP statements executed by server	Number of DROP statements executed by server.

 Table 14–7 (Cont.) Performance Data

Table 14–7 (Cont.) Performance Data		
Metric	Description	
Client/Server - INSERT statements executed by server	Number of INSERT statements executed by server.	
Client/Server - MERGE statements executed by server	Number of MERGE statements executed by server.	
Client/Server - SELECT statements executed by server	Number of SELECT statements executed by server.	
Client/Server - Table rows deleted by server	Number of table rows deleted by server.	
Client/Server - Table rows inserted by server	Number of table rows inserted by server.	
Client/Server - Table rows updated by server	Number of table rows updated by server.	
Client/Server - Transaction rollbacks by server	Number of transaction rollbacks by server.	
Client/Server - Transactions committed by server	Number of transactions committed by server.	
Client/Server - UPDATE statements executed by server	Number of UPDATE statements executed by server.	
Connections - Client-server connections established	Cumulative number of client/server connections established.	
Connections - Database connects established	Cumulative number of database connections established.	
Connections - Database connects exceeding configured maximum	Cumulative number of database connection thresholds exceeded.	
Connections - Database disconnects	Cumulative number of database disconnections.	
Connections - Direct linked database connections established	Cumulative number of direct-linked database connections established.	
Connections - First database connections established	Number of first database connections established.	
DB - Deletes from range indexes	Number of rows deleted from range indexes.	
DB - Full table scans	Number of full table scans.	
DB - Hash index inserts during database recovery index rebuild	Number of rows inserted into hash indexes during index rebuild phase of database recovery.	
DB - Hash indexes scanned	Number of hash indexes scanned.	
DB - Hash indexes scanned during replication	Number of hash indexes scanned during replication operations (such as insert, update, and delete operations on tables).	
DB - Indexes rebuilt	Number of indexes rebuilt.	
DB - Inserts into range indexes	Number of rows inserted into range indexes.	

Table 14–7 (Cont.) Performance Data

Table 14–7 (Cont.) Performance Data		
Metric	Description	
DB - LRU aging commits done since database loaded	Number of LRU aging commits since the database was loaded into memory.	
DB - LRU aging cycles completed since database loaded	Number of LRU aging cycles completed since the database was loaded into memory.	
DB - LRU aging high threshold crossings since database loaded	Number of times LRU aging high threshold has been reached since the database was loaded into memory.	
DB - Merge joins done	Number of merge joins done.	
DB - Nested loop joins done	Number of nested loop joins done.	
DB - Range index inserts during database recovery index rebuild	Number of rows inserted into range indexes during index rebuild phase of database recovery	
DB - Range indexes scanned	Number of temporary indexes scanned.	
DB - Range indexes scanned during replication	Number of temporary indexes scanned during replication operations.	
DB - Rows deleted during LRU aging since database loaded	Number of rows deleted during LRU aging since the database was loaded into memory.	
DB - Rows deleted during time-based aging since database loaded	Number of rows deleted during time-based aging since the database was loaded into memory.	
DB - Rows deleted from hash indexes	Number of rows deleted from hash indexes.	
DB - Rows fetched from hash indexes	Number of rows fetched from hash indexes.	
DB - Rows fetched from hash indexes during replication	Number of rows fetched from hash indexes during replication operations.	
DB - Rows fetched from range indexes during replication	Number of rows fetched from range indexes during replication operations.	
DB - Rows fetched from temp indexes during replication	Number of rows fetched from temporary indexes during replication operations.	
DB - Rows fetched from temporary indexes	Number of rows fetched from temporary indexes.	
DB - Rows inserted into hash indexes	Number of rows inserted into hash indexes.	
DB - Rows not deleted using LRU aging because of lock contention	Number of rows that were not deleted using LRU aging because of lock contention since the database was loaded into memory.	
DB - Rows not deleted using time-based aging - lock contention	Number of rows that were not deleted using time-based aging because of lock contention since the database was loaded into memory.	
DB - Sorts done	Number of sorts done.	
DB - Table rows deleted	Number of table rows deleted.	
DB - Table rows inserted	Number of table rows inserted.	

 Table 14–7 (Cont.) Performance Data

Metric	Description
DB - Table rows read	Number of table rows read.
DB - Table rows updated	Number of table rows updated.
DB - Temporary indexes created	Number of temporary indexes created.
DB - Temporary indexes scanned	Number of range indexes scanned.
DB - Temporary indexes scanned during replication	Number of range indexes scanned during replication operations (such as insert, update, and delete operations on tables).
DB - Time-based aging commits done since the database loaded	Number of time-based aging commits since the database was loaded into memory.
DB - Time-based aging cycles completed since database loaded	Number of time-based aging cycles completed since the database was loaded into memory.
DB - Times LRU aging low threshold reached since database loaded	Number of times LRU aging low threshold has been reached since the database was loaded into memory.
DB - Tuples fetched from range indexes	Number of rows fetched from range indexes.
DB - Updates on range indexes	Number of rows updated on range indexes.
Lock - Deadlocks	Number of deadlocks.
Lock - Locks acquired for DML activity	Number of locks acquired for DML activity.
Lock - Locks acquired for table scans	Number of locks acquired for table scans.
Lock - Locks granted immediately	Number of locks granted immediately.
Lock - Locks granted that required waiting	Number of locks granted that required waiting.
Lock - Requests denied due to timeouts	Number of lock requests denied due to timeouts.
Log - Bytes inserted into the log buffer	Number of bytes inserted into the log buffer.
Log - Bytes of log read during DB recovery	Number of log bytes read during database recovery.
Log - Bytes read from log for commits	Number of bytes read from the log for commit processing.
Log - Earliest log file currently	Earliest log file that currently exists in the database.
Log - File system reads	Number of file system reads.
Log - File system reads for commits	Number of file system reads from the log for commit processing.
Log - File system writes	Number of file system writes.
Log - Last log file number	Number of last log file.

Table 14–7 (Cont.) Performance Data

Metric	Description
Log - Log files generated so far	Number of log files generated so far.
Log - Log records inserted into the log buffer	Number of log records inserted into the log buffer.
Log - Most recent log file present	Most recent log file present.
Log - Times the log is synched to disk	Number of times the log has been synchronized to disk.
Log - Total waits for inserts	Number of times a thread was delayed while trying to insert a log record into the log buffer because the log buffer was full. If this value is increasing, it generally indicates that the log buffer is too small.
Memory - Highest amount of permanent region in use - MB	Highest amount of memory of the permanent data region in use since the first connection to the database.
Memory - Highest amount of temporary region in use - MB	Highest amount of memory of the temporary data region in use since the first connection to the database.
Memory - MB of permanent space in use	Size of permanent region currently in use.
Memory - MB of temporary space in use	Size of temporary region currently in use.
Memory - Percent of permanent space in use	Percent of the permanent region space currently being used.
Memory - Percent of temporary space in use	Percent of the temporary region space currently being used.
PL/SQL - Cache hit ratio for object handles	The cache hit ratio for PL/SQL object handles.
PL/SQL - Cache hit ratio for pin requests	The cache hit ratio for PIN requests.
PL/SQL - Lock requests for a PL/SQL object	Number of times a lock was requested for a PL/SQL object.
PL/SQL - Object invalidations due to dependent object changes	Total number of times objects in the namespace were marked invalid because a dependent object was modified.
PL/SQL - PINs of objs not 1st performed since creation	Any PIN of an object that is not the first PIN performed since the object handle was created and which requires loading the object from the database.
PL/SQL - Times PL/SQL object's handle found in memory	Number of times a PL/SQL object's handle was found in memory.
PL/SQL - Times a PIN was requested for PL/SQL objects	Number of times a PIN was requested for PL/SQL objects.
PL/SQL - Times all metadata of library object found in memory	Number of times all of the metadata pieces of the library object were found in memory.

 Table 14–7 (Cont.) Performance Data

Table 14–7 (Cont.) Performance Data		
Metric	Description	
PL/SQL - Total heap (MB) for PL/SQL on this database connection	Total amount of heap memory in megabytes allocated to PL/SQL for the database connection.	
PL/SQL - Total times a deferred cleanup occurred	Number of times a deferred cleanup occurred.	
Replication - Last log file number held by replication	Number of last log file held by replication.	
Replication - Transactions replicated from this database	Number of replicated transactions generated on the local database that are being replicated to at least one peer database.	
Statement - ALTER statements executed	Number of ALTER statements executed.	
Statement - Automatic statement reprepares	Number of automatic statement reprepares.	
Statement - CREATE statements executed	Number of CREATE statements executed.	
Statement - Command cache misses during statement prepare	Number of command cache misses during statement prepare.	
Statement - DELETE statements executed	Number of DELETE statements executed.	
Statement - DROP statements executed	Number of DROP statements executed.	
Statement - INSERT statements executed	Number of INSERT statements executed.	
Statement - MERGE statements executed	Number of MERGE statements executed.	
Statement - SELECT statements executed	Number of SELECT statements executed.	
Statement - Statement prepares	Number of statement prepares.	
Statement - Statement reprepares (forced or automatic)	Number of statement reprepares including forced and automatic.	
Statement - Total SQL statements executed	Number of SQL statements executed.	
Statement - UPDATE statements executed	Number of UPDATE statements executed.	
Transaction - Durable replicated transaction commits	Number of durable replicated transaction commits.	
Transaction - Durable transaction commits	Number of durable transaction commits.	
Transaction - Nondurable replicated transaction commits	Number of nondurable replicated transaction commits.	
Transaction - Nondurable transaction commits	Number of nondurable transaction commits.	

Table 14–7 (Cont.) Performance Data

Metric	Description
Transaction - Replication initiated transaction commits	Number of replication initiated transaction commits.
Transaction - Transaction rollbacks	Number of transaction rollbacks.
Transaction - Transactions committed	Number of durable and non-durable transaction committed.
Transaction - XLA initiated transaction commits	Number of XLA initiated transaction commits.
Workload - 10th most commonly executed SQL statement	Tenth most commonly executed SQL statement.
Workload - 2nd most commonly executed SQL statement	Second most commonly executed SQL statement.
Workload - 2nd most commonly prepared SQL statement	Second most commonly prepared SQL statement.
Workload - 2nd most commonly reprepared SQL statement	Second most commonly reprepared SQL statement.
Workload - 3rd most commonly executed SQL statement	Third most commonly executed SQL statement.
Workload - 3rd most commonly prepared SQL statement	Third most commonly prepared SQL statement.
Workload - 3rd most commonly reprepared SQL statement	Third most commonly reprepared SQL statement.
Workload - 4th most commonly executed SQL statement	Fourth most commonly executed SQL statement.
Workload - 4th most commonly prepared SQL statement	Fourth most commonly prepared SQL statement.
Workload - 4th most commonly reprepared SQL statement	Fourth most commonly reprepared SQL statement.
Workload - 5th most commonly executed SQL statement	Fifth most commonly executed SQL statement.
Workload - 5th most commonly prepared SQL statement	Fifth most commonly prepared SQL statement.
Workload - 5th most commonly reprepared SQL statement	Fifth most commonly reprepared SQL statement.
Workload - 6th most commonly executed SQL statement	Sixth most commonly executed SQL statement.

 Table 14–7 (Cont.) Performance Data

Metric	Description	
Workload - 7th most commonly executed SQL statement	Seventh most commonly executed SQL statement.	
Workload - 8th most commonly executed SQL statement	Eighth most commonly executed SQL statement.	
Workload - 9th most commonly executed SQL statement	Ninth most commonly executed SQL statement.	
Workload - Cache hits	Number of hits inside cache.	
Workload - Client/Server connections	The number of current active client/server connections on the TimesTen database.	
Workload - Commands prepared	Number of commands prepared (compiled).	
Workload - Commands reprepared	Number of commands reprepared.	
Workload - Communication with Oracle database for dynamic load	Number of executes from the Oracle database using dynamic load.	
Workload - Cursor opens	Number of cursor opens.	
Workload - Cursors closed	Number of cursor closed.	
Workload - Direct linked connections	The number of current direct-linked connections on the database.	
Workload - Fetches from Oracle database using dynamic load	Number of fetches from the Oracle database using dynamic load.	
Workload - Most commonly executed SQL statement	Most commonly executed SQL statement.	
Workload - Most commonly prepared SQL statement	Most commonly prepared SQL statement.	
Workload - Most commonly reprepared SQL statement	Most commonly reprepared SQL statement.	
Workload - Passthrough count	Number of passthrough operations executed.	
Workload - System connections	The sum of the current active subdaemon, replication agent, and cache connect agent connections.	
Workload - Total number of connections	Sum of all current active connections on the TimesTen database.	

Table 14–7 (Cont.) Performance Data

Performance rates

Performance rates are expressed as a rate (For example, X times per minute). These rates are considered instantaneous rates because the value is the rate in the last minute or the per-minute rate (if you have changed the most recent collection interval to a value other than one minute).

Table 14–8 shows each metric and describes the metrics.

Table 14–8 Performance Rates		
Metric	Description	
Cache - Rows per batch in PL/SQL mode	The number of rows sent per batch in PL/SQL mode to the Oracle database.	
Cache - Rows per batch in SQL mode	The number of rows sent per batch in SQL mode to the Oracle database.	
Cache - Total AWT MB per sec	The number of megabytes of AWT transactions sent per second to the Oracle database.	
Cache - Transactions committed on Oracle database per sec	The number of transactions committed per second on the Oracle database.	
Cache - Transactions propagated to Oracle database per sec	The number of transactions propagated per second to the Oracle database.	
Cache grid - Cache grid attaches per minute	The number of cache grid attaches per minute.	
Cache grid - Cache grid detaches per minute	The number of cache grid detaches per minute.	
Cache grid - Cache grid global hit percent	The number of cache grid global hit percent (percent is found in local grid member).	
Cache grid - Cache grid global hits per sec	The number of cache grid global hits per second.	
Cache grid - Cache grid global misses per sec	The number of cache grid global misses per second.	
Cache grid - Cache grid local hits per sec	The number of cache grid local hits per second.	
Cache grid - Cache grid local misses per sec	The number of cache grid local misses per second.	
Cache grid - Cache grid misses filled from Oracle database per sec	The number of cache grid misses filled from the Oracle database per second.	
Client/Server - ALTER statements executed by server per sec	The number of ALTER statements executed per second by the TimesTen server.	
Client/Server - Bytes received by server per sec	The number of client/server bytes received per second by the TimesTen server.	
Client/Server - Bytes transmitted by server per sec	The number of client/server bytes transmitted per second by the TimesTen server.	
Client/Server - CREATE statements executed by server per sec	The number of CREATE statements executed per second by the TimesTen server.	
Client/Server - DELETE statements executed by server per sec	The number of DELETE statements executed per second by the TimesTen server.	
Client/Server - DROP statements executed by server per sec	The number of DROP statements executed per second by the TimesTen server.	
Client/Server - INSERT statements executed by server per sec	The number of INSERT statements executed per second by the TimesTen server.	

 Table 14–8
 Performance Rates

Table 14–8 (Cont.) Performance Rates		
Metric	Description	
Client/Server - MERGE statements executed by server per sec	The number of MERGE statements executed per second by the TimesTen server.	
Client/Server - Round trips per sec	The number of client/server round-trips per second.	
Client/Server - SELECT statements executed by server per sec	The number of SELECT statements executed per second by the TimesTen server.	
Client/Server - Table rows deleted by server per sec	The number of table rows deleted per second by the TimesTen server.	
Client/Server - Table rows inserted by server per sec	The number of table rows inserted per second by the TimesTen server.	
Client/Server - Table rows updated by server per sec	The number of table rows updated per second by the TimesTen server.	
Client/Server - Transaction rollbacks by server per sec	The number of transaction rollbacks per second by the TimesTen server.	
Client/Server - Transactions committed by server per sec	The number of transactions committed per second by the TimesTen server.	
Client/Server - UPDATE statements executed by server per sec	The number of UPDATE statements executed per second by the TimesTen server.	
DB - Table rows deleted per minute	The number of table rows deleted per minute in the TimesTen database.	
DB - Table rows inserted per minute	The number of table rows inserted per minute in the TimesTen database.	
DB - Table rows read per minute	The number of table rows read per minute in the TimesTen database.	
DB - Table rows updated per minute	The number of table rows updated per minute in the TimesTen database.	
Lock - Deadlocks per minute	The number of deadlocks per minute.	
Lock - Immediate lock grants per minute	The number of nonblocking locks acquired per minute.	
Lock - Lock grants after wait per minute	The number of blocking locks acquired per minute.	
Lock - Lock timeouts per minute	The number of lock timeouts per minute.	
Lock - Percent locks granted immediately	The percent of locks granted immediately versus having to wait.	
Log - Log buffer MB inserted per sec	The number of megabytes inserted into the log buffer per second.	
Log - Log buffer waits per minute	The number of times per minute a thread had to wait because the log buffer was full.	
Log - Log bytes to disk per minute in MB	The number of megabytes of log that was written to disk per minute.	
Log - Log flushes to file system per minute	Number of times per minute the log buffer was written to the file system.	

Table 14–8 (Cont.) Performance Rates

Metric	Description	
Log - Log reads from file system per minute	The number of times per minute a log read could not be satisfied from the in memory buffer.	
Prepares per minute to executes per minute ratio	The ratio of the prepares per minutes to executes per minute.	
Replication - Transactions replicated per minute	The number of transactions replicated to a peer per minute.	
Statement - DELETE statements executed per sec	The number of DELETE statements executed per second.	
Statement - INSERT statements executed per sec	The number of INSERT statements executed per second.	
Statement - MERGE statements executed per sec	The number of MERGE statements executed per second.	
Statement - SELECT statements executed per sec	The number of SELECT statements executed per second.	
Statement - Total statements executed per sec	The total number of statements executed per second.	
Statement - UPDATE statements executed per sec	The number of UPDATE statements executed per second.	
Transaction - Transaction rollbacks per sec	The number of transactions rolled back per second.	
Transaction - Transactions committed per sec	The number of transactions committed per second.	
Transaction - Transactions durably committed per sec	The number of durable transactions committed per minute.	
Workload - Commands prepared per minute	The number of SQL commands prepared (compiled) per minute.	
Workload - Commands reprepared per minute	The number of SQL commands reprepared (recompiled) per minute.	
Workload - Connects per minute	The number of connections to the database per minute.	
Workload - Disconnects per minute	The number of disconnects from the database per minute.	
Workload - Queries per sec	The number of queries per second.	

Table 14–8 (Cont.) Performance Rates

Readonly cache

Table 14–10 shows readonly cache metrics and describes the metrics.

Metric	Description
Auto refresh status	The status of the autorefresh operation.
Cache group ID	The identifier of the cache group.
Cache group name	The name cache group.
Cache group owner	The owner of the cache group.
Object Identifiers	The object identifier of the table on the Oracle database.

Table 14–9 Readonly Cache

Metric	Description
Refresh Interval	The refresh interval for the cache group.
Refresh Time Spent(ms)	The total time spent performing refresh operations.
Rows autorefreshed	The number of rows that have been autorefreshed.
Start Time	The timestamp of when the last autorefresh was performed.
Updates pending refresh	The number of updates that are pending refresh.

Table 14–9 (Cont.) Readonly Cache

Replication peers

Table 14–10 shows replication peers metrics and describes the metrics.

Metric	Description	
Replication peer host name	Name of the system that hosts replication.	
Replication peer name	If replication type is DNS, name of the database to be queried. If replication type is PEERS, name of the database that is a replication peer to this database.	
Replication port number	TCP/IP port used by the replication agent to listen for connections from the transmitter threads of remote replication agents. The default is 0 indicating that this port has been assigned automatically to the replication agent, rather than being specified as part of a replication scheme.	
Replication protocol	Protocol used by replication to communicate between peers.	
Replication state	Current replication state of the replication peer in relation to the queried database.	
Туре	The replication type.	

Table 14–10 Replication Peers

Replication status

Table 14–11 shows replication status information.

Table 14–11 Replication Status

Name	Description
Replication peer name	The replication peer name.
Replication thread type	The replication thread type. Valid values are Transmitter or Receiver.
Start or restart count	Start or restart count.
Transactions sent or received	The total number of transactions sent or received.
Transactions sent or received per sec	The number of transactions sent or received per second.

Replication subscribers

Table 14–12 shows replication subscriber information.

Name	Description	
Average latency time (in seconds)	The average latency time in seconds between when the master sends a message and when it receives the final acknowledgment from the subscriber.	
Last message received	Time in seconds since this subscriber received the last message from the master.	
Last message sent	Time in seconds since the master sent the last message to the subscriber. This includes the "heartbeat" messages sent between the databases.	
Replication host name	Name of the system that hosts the subscriber.	
Replication peer name	Name of the subscriber database.	
Replication port number	TCP/IP port used by the subscriber agent to receive updat from the master. A value of 0 indicates that replication has automatically assigned the port.	
Replication protocol	Protocol used by replication to communicate between master and subscribers.	
Replication state	Current replication state of the subscriber peer in relation to the queried database.	
Replication track	Replication track.	
Txn log files held by the master database for a subscriber	Number of transaction log files the master database is retaining for a subscriber.	

 Table 14–12
 Replication Subscribers

Replication tracks

Table 14–15 shows replication tracks information.

Name	Description
Receiver batch commit counts	The total number of batch commits on the receiver.
Receiver batch commit time	The total time of batch commits on the receiver.
Receiver txn commit counts	The total number of commits on the receiver.
Receiver txn commit waits	The total number of commits waits on the receiver.
Subscriber	The subscriber database.
Track	The track number.
Transmitter log waits	The log waits from the transmitter.

Table 14–13 Replication Tracks

Replication state

Table 14–11 shows replication state information.

Table 14–14 Replication State

Name	Description
Cache Grid State	The current state of the cache grid if the active standby pair is configured for cache grid. If cache grid is not configured the status is No Cache Grid.
State	The current replication state of the database in an active standby pair.

Response

Table 14–15 shows response information.

Name	Description
Status	Valid values are Up or Down.

SQL command cache

Table 14–16 describes information in the SQL command cache.

Table 14–16 SQL Command Cache

Name	Description			
Command ID	The SQL command identifier.			
Executions which took place on this command	The number of executions that took place on this command since it was brought into the command cache.			
Fetch executions done internally for this statement	The number of fetch executions that were done internally for this statement.			
Indicates if command can be garbage collected	Indicates whether this command can be garbage collected by the subdaemon. If 0, it is non-freeable. If 1, it is freeable.			
Last measured execution time of the command	The last measured execution time for this SQL command.			
Maximum execute time in seconds of this statement	The maximum execution time in seconds for this SQL command.			
Minimum execute time in seconds	The minimum execution time in seconds for this SQL command.			
Reprepares or invalidations of this command	A counter for the number of reprepares or invalidations of this command.			
SQL for the current command	The full SQL text for the current command.			
Space(bytes) allocated for this command in the command cache	The total space in bytes allocated for this command in the command cache.			
Time when the statement started	The time of when the last execution of the SQL statement started.			
Unique ID of a private connection	Unique identifier of a private connection.			
User prepares which result in a hit on the command cache	A counter for the number of user prepares that result in a hit in the command cache.			
User who created this command	The identifier of the user who created this command.			

SQL execution time histogram

Table 14–18 shows SQL execution time histogram information.

 Table 14–17
 SQL Execution Time Histogram

Name	Description		
Accumulated wall clock execution time(sec) when sampling	The accumulated wall clock execution time when sampling in seconds.		

Name	Description		
Execution Time(sec) upper bound for the bucket	The execution time upper bound limit for this bucket in seconds.		
Execution time samples since database start or statistics reset	The number of execution time samples that have been taking since the database has started or since statistics were reset.		
SQL command count in this bucket	The SQL command count in this bucket.		

Table 14–17 (Cont.) SQL Execution Time Histogram

Transaction log holds

Table 14–18 shows transaction log holds information.

Table 14–18 Transaction Log Holds

Name	Description
Object for which the hold was created	The type specific object for which the hold was created.
Transaction log file number of the hold	The transaction log file number of the hold.
Transaction log file offset of the hold	The transaction log file offset of the hold.
Type of hold	The type of hold.

Viewing TimesTen instance metrics

There are two groups of TimesTen instance metrics:

Figure 14–4 TimesTen Instance All Metrics

testhost.tt11	22 > All Metrics
All Metri	ics
Search	→
View 👻	여파토
Resp	ed Databases

- Hosted databases
- Response

Some metrics have predefined warning and critical thresholds. You can modify and add new thresholds. The Oracle Enterprise Manager Cloud Control issues alerts and warnings when the values collected for the metrics surpass the set threshold.

Hosted databases

Table 14-18 shows hosted databases information.

Name	Description		
Cache agent	This value can be either Up, Down, or N/A. If you have not configured a cache group, then this value is N/A.		
Client server connections	The number of client/server connections to the database.		
Database path name	The value is taken from the last part of the path the database. For example, if the path to the database is /var/tt/sampledb_1122, the datab name is sampledb_1122.		
PL/SQL	This value can be either Enables or Disabled. Once PL/SQL support is enabled in a database, you cannot disable it later.		
Ram status	This value can be either Loaded or Not loaded. The RAM status is Loaded if the database is loaded into memory.		
Replication agent	This value can be either Up, Down, or N/A. If you have not configured a replication scheme, then this value is N/A.		
Total connections	The total number of direct linked and client/server connections to the database.		

Table 14–19 Hosted Databases

Response

Table 14–18 shows response information.

	nesponse	
Name		Description
Status		Valid values are Up or Down.

Table 14–20 Response

Viewing Target Topology

This chapter describes the TimesTen topology page. The topology page provides a visual layout of the relationships between Enterprise Manager targets and performance information about your targets.

Topics include:

- Viewing the topology page
- Changing the view of the topology page
- Adding monitoring metrics

Viewing the topology page

To view the topology page, ensure that you are on the TimesTen target page. For information on navigating to the TimesTen target page, see "Navigating to the TimesTen target page" on page 2-1.

Depending on the type of target there are two ways of accessing the topology page:

For a TimesTen instance target:

From the **TimesTen Instance Home** menu, select **Configuration**, then select **Topology**.

For a TimesTen database target:

From the **TimesTen Database Home** menu, select **Configuration**, then select **Topology**.

Changing the view of the topology page

The topology page provides a visual layout of the relationships between Enterprise Manager targets and performance information about your targets.

To change the view of the topology page:

- **1.** From the **View** drop-down list, select a view type:
- Uses

This view helps you determine the targets that the selected target depends on. If a target is having problems, this view can be useful in helping you determine whether its problems have been caused by another target it depends on. This is the default view.

Used by

This view shows you the targets that depend on the selected target. This can be useful, for example, to view a certain TimesTen metric for the TimesTen databases that are associated with a specific TimesTen instance.

Figure 15–1 Select view

testhost.tt1122						
TimesTen Instance Ho	ome 🔻					
Configuration Top	ology					
View Used By View Uses Used By	Customize 🔻	ц.	1 Z Find		1	-
			testhost.tt1122			

The topology page refreshes with your selected view type.

Adding monitoring metrics

The topology page enables you to view monitoring metrics for your Enterprise Manager targets on a single page. For example, you can monitor the PermSize and TempSize attributes of all of the TimesTen databases that are associated with your TimesTen instance.

To add monitoring metrics to the targets displayed on the topology page, ensure that you are on the topology page for your TimesTen target.

1. From the **Options** menu, select **Annotations**, then select **Choose Metrics**.





The Choose Metrics dialog displays. Locate the * Target Type drop-down list.

- 2. From the * Target Type drop-down list, select a target type:
 - TimesTen Database

This target type lets you choose metrics that are specific for TimesTen database targets. For more information on TimesTen database metrics, see "Viewing TimesTen database metrics" on page 14-2.

TimesTen Instance

This target type lets you choose metrics that are specific for TimesTen instance targets. For more information on TimesTen instance metrics, see "Viewing TimesTen instance metrics" on page 14-27.

Target Type					
Metric Pale	TimesTen Data TimesTen Inst	ance			
	earch				+
Times	Fen Database				
Ŭ					
			Metric Order	Revert to D	efaults
				OK Ca	ncel

Figure 15–3 Select the target type

Locate the name of the metric group.

3. Expand the metric group, and click the **name of the metric**.



Figure 15–4 Choose Metrics dialog

Repeat this step until you add all of the metrics that you want to monitor. Locate the Metric Order button.

4. Click Metric Order.

1etric	Palette	
View 👻	Search	+
	PLSQL - Times objects marked invalid because dependent object mo	
	PLSQL - Total heap (MB) allocated to PL/SQL on this database con	
	PLSQL - Total number of times a deferred cleanup occurred	
	REP - Last log file number held by replication	
	REP - Number of xacts replicated from this database	
	STMT - Number of ALTER statements executed	
	STMT - Number of automatic statement reprepares	
	STMT - Number of cmd cache misses during statement prepare	
	STMT - Number of CREATE statements executed	
	STMT - Number of DELETE statements executed	
	STMT - Number of DROP statements executed	
	STMT - Number of INSERT statements executed	
	STMT - Number of MERGE statements executed	
	STMT - Number of SELECT statements executed	
	STMT - Number of statement prepares	
	STMT - Number of statement reprepares (forced or automatic)	
	STMT - Number of UPDATE statements executed	
	STMT - Total number of SQL statements executed	
	WORKLOAD - Cache hits	
	WORKLOAD - Client/Server connections	
	WORKLOAD - Communication with Oracle database for dynamic load	

Figure 15–5 Click Choose Metric

The Metric Order dialog displays. The first three metrics in the list are displayed for each of your Enterprise Manager target on the topology page. Additional metrics are displayed in the tooltip of the Enterprise Manager target.

5. Organize the metrics with the arrows that are on the right of the metric list.

Figure 15–6 Organize the metrics

Metric Order	×
The first 3 metrics in the list will be o metric annotations are turned on. All shown in the tool tip.	
Metrics	
PermSize TempSize connections_established_count stmt_executes_selects stmt_executes_updates stmt_executes_creates stmt_executes_deletes	M 4 P M
	OK Cancel

Locate the OK button.

6. Click OK.

Figure 15–7 Click OK

Metric Order	×
The first 3 metrics in the list will be di metric annotations are turned on. All t shown in the tool tip.	
Metrics	
PermSize TempSize connections_established_count stmt_executes_selects stmt_executes_updates stmt_executes_creates stmt_executes_deletes	∡ ↓ ₹
	OK Cancel

The Metric Order dialog closes. Locate the OK button in the Choose Metrics dialog.

7. Click OK.

Figure 15–8 Click OK

Metric P	e TimesTen Database 🔻	
View 🔻	Search	
	PLSQL - Total heap (MB) allocated to PL/SQL on this database con	
	PLSQL - Total number of times a deferred cleanup occurred	
	REP - Last log file number held by replication	
	REP - Number of xacts replicated from this database	
	STMT - Number of ALTER statements executed	
	STMT - Number of automatic statement reprepares	
	STMT - Number of cmd cache misses during statement prepare	
	STMT - Number of CREATE statements executed	
	STMT - Number of DELETE statements executed	
	STMT - Number of DROP statements executed	
	STMT - Number of INSERT statements executed	
	STMT - Number of MERGE statements executed	
	STMT - Number of SELECT statements executed	
	STMT - Number of statement prepares	
	STMT - Number of statement reprepares (forced or automatic)	
	STMT - Number of UPDATE statements executed	
	STMT - Total number of SQL statements executed	
	WORKLOAD - Cache hits	
	WORKLOAD - Client/Server connections	
	WORKLOAD - Communication with Oracle database for dynamic load	
	WORKLOAD - Direct linked connections	
	WORKLOAD - Fetches from Oracle database using dynamic load	Ĩ
	WORKLOAD - Number of commands prepared	_
	WORKLOAD Number of commands reasonated Metric Order Revert to Defaults	

The Choose Metrics dialog closes. Locate the Options button on the topology page.

Choose Metrics...

8. From the Options menu, select Annotations, then select Metric Names and Values.

Figure 15–9	Select Metric Names and	d Values		
Customize 👻 🔒	4 Find			
		Annotations	⊬	✓ Status
		Expand All		Incidents
		Collapse All		Link Labels
		Layout	►	Metric Values
		Reload Topology		Metric Names and Values
		Print	⊬	No Metrics

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The Topology page refreshes.

Your targets now show the top three metrics that you configured. Hover over a target and click the more link in the popup to see all of your configured metrics for a specific target.

16

Viewing Reports

Reports are generated from the metric information that has been collected and stored in the Oracle Enterprise Manager repository.

Topics include:

- Viewing reports
- Types of reports

Viewing reports

Ensure that you are on the TimesTen database target page. For more information on navigating to the TimesTen database target page, see "Navigating to the TimesTen target page" on page 2-1.

Note: TimesTen specific reports are only available for TimesTen database targets.

1. From the TimesTen Database Home menu, select Information Publisher Reports.

The Information Publisher Reports page displays. Locate the Title column in the Information Publisher Reports table.

2. In the Title column, click the name of the TimesTen report.

The Specify Target for Report page displays.

3. Click Continue.

The report displays. If you want to print the report, select Printable Page.

Types of reports

There are nine report categories containing 10 groups of reports.

The categories, groups, and subgroups are:

- TimesTen Cache Grid Reports
 - TimesTen Cache AWT Activity Reports
 - * AWT Commits
 - * AWT Rows per Batch
 - * AWT Throughput

- TimesTen Cache Grid Activity Reports
 - * Cache Grid Global Hit Percent
 - * Cache Grid Attaches and Detaches
 - * Cache Grid Hits and Misses
- TimesTen Connections
 - TimesTen database Connections Reports
 - * Current Connections
 - * Connection Rate
- TimesTen Lock Reports
 - TimesTen database Lock Activity Reports
 - * Locks Granted Immediately vs Wait
 - * Locks Timeouts and Deadlocks
- TimesTen Log Monitoring
 - TimesTen database Transaction Log Reports
 - * Log Inserts Activity
 - * Log Waits Activity
 - * Completed Checkpoints
 - * Checkpoint Bytes Written Activity
 - * Recovery Activity
- TimesTen Memory Monitoring
 - TimesTen database Memory Reports
 - * Permanent Memory Activity
 - * Temporary Memory Activity
 - * PL/SQL Memory Activity
- TimesTen PLSQL Reports
 - TimesTen database PLSQL Reports
 - * Pin Hit Ratio
 - * PL/SQL Invalidations and Reloads
- TimesTen SQL Operations
 - TimesTen database SQL Operation Reports
 - * SQL Operations
- TimesTen Tables
 - TimesTen database Table Activity Reports
 - * Rows Processed
- TimesTen database Monitoring
 - TimesTen database Activity Reports
 - * Log Activity

- * Transactions Activity
- * Space Usage (% full)
- * Log Buffer Bytes

Index

Α

access control group, 3-1 overview, 3-1 roles, 3-5 users, 3-16 granting preferred credentials, 3-20 agent status, 5-2 auto refresh set, 2-4

В

backup full, 11-5 incremental, 11-3 backup file delete, 11-12 backup schedule activate, 11-6 create, 11-2 deactivate, 11-7 delete, 11-10 immediate backup, 11-8

С

cache viewing, 12-1 control operations log, 2-5 create blackout TimesTen database, 10-3 TimesTen instance, 9-2

D

database restore, 11-11 database connections client/server, 5-4 direct linked, 5-4 database usage high values, 5-4 permanent space, 5-4 temporary space, 5-4 delete backup file, 11-12 deployment failure, 1-6 display time period set, 2-4

Ε

end blackout TimesTen database, 10-3 TimesTen instance, 9-2

F

free space checkpoint file system, 5-5 transaction log file system, 5-5

I

installation deploying plug-in for TimesTen on management agent, 1-11 deploying plug-in for TimesTen on OMS, 1-6 deployment failure, 1-6 prerequisites, 1-1 uninstalling plug-in, 1-40

L

locks acquisition, 7-1 log control operations, 2-5 log flushes high rate, 6-10 log holds high volume, 6-9

Μ

management agent adding, 1-13 metrics collection errors, 1-33 TimesTen database all metrics, 14-1 checkpoint and transaction log file system usage, 14-4 checkpoint history, 14-3 database information, 14-5 instance information, 14-8 navigating, 14-1 parallel AWT rates, 14-9 parallel AWT tracks, 14-9 performance data, 14-10 performance rates, 14-20 readonly cache, 14-23 replication peers, 14-24 replication state, 14-25 replication status, 14-24 replication subscribers, 14-24 replication tracks, 14-25 response, 14-26 SQL command cache, 14-26 SQL execution time histogram, 14-26 transaction log holds, 14-27 viewing, 14-2 TimesTen instance all metrics, 14-2 14-27 hosted databases, navigating, 14-2 response, 14-28 viewing, 14-27

Ρ

performance checkpoints, 6-11 commits and rollbacks, 6-7 locks, 6-7 transaction logs, 6-9 viewing, 6-1 performance summary connections, 6-2 statements, 6-2 workload, 6-5 plug-in changing monitoring configuration, 1-37 deleting, 1-52 validating, 1-32, 1-34, 1-37 verifying, 1-32

R

replication viewing, 13-1 reports information publisher reports, 16-1 printable page, 16-1 types, 16-1 viewing, 16-1 restore database, 11-11 restore history delete, 11-14 review, 11-14

S

set auto refresh, 2-4 display time period, 2-4 SQL command cache, 5-5

Т

target configuring, 1-16 database adding manually, 1-28 instance adding manually, 1-25 remove, 1-41 setting preferred credentials, 1-34 TimesTen issues, 5-5 target page navigation, 2-1 TimesTen database client/server network usage, 8-4 server workload, 8-2 statements, 8-3 configuration, 5-3 control create blackout, 10-3 end blackout, 10-3 load database into ram, 10-2 ram policy settings, 10-2 start/stop agents, 10-1 unload database from memory, 10-2 status, 5-2 summary, 5-2 transaction monitor awaiting locks, 7-3 outstanding locks, 7-2 TimesTen instance control create blackout, 9-2 end blackout, 9-2 start/stop services, 9-1 daemon status, 4-2 hosted databases, 4-3 server status, 4-3 summary, 4-2 topology page adding monitoring metrics, 15-2 change view, 15-1 transaction rollback, transaction monitor rollback, 7-2

U

undeployment plug-in for TimesTen from management agent, 1-43 plug-in for TimesTen from OMS, 1-48 uninstallation deleting the plug-in, 1-52 plug-in, 1-40