StorageTek Tape Analytics

Administration Reference Guide

Version 1.0.2

Part Number: E28379-03
December 2012

Submit comments about this document to STP_FEEDBACK_US@ORACLE.COM.

StorageTek Tape Analytics Administration Reference Guide

E28379-03

Oracle welcomes your comments and suggestions for improving this book. Contact us at STP_FEEDBACK_US@ORACLE.COM.
Please include the title, part number, issue date, and revision.

Copyright © 2012, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related software documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure the safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. UNIX is a registered trademark licensed through X/Open Company, Ltd.

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

Table of Contents

Summary of Changes

v1.0.2, December 2012

The following sections were updated for this release. These updates are flagged with change bars in the margin. Minor updates are not listed.

- Updates to Chapter 6, "Upgrading, Reinstalling, and Downgrading STA":
  - "Upgrade Paths" on page 84 — New section.

v1.0.1, July 2012

The following sections were updated for this release.

- Updates to Chapter 1, "Logging":
  - Added Note concerning when an RDA log bundle should be sent to Oracle Service.
- Updates to Chapter 3, "Database Services Administration":
  - "Executable Program Locations" — Re-organized content into table form.
  - "STA Services Daemon and WebLogic Configuration Files" — Re-organized content.
- Updates to Chapter 4, "Password Administration":
  - "Reset the STA Database Root, Reports, or DBA Account Password" — Clarified that single quotes must be used around the *new-password* and *user-ID* variables.
  - "Change the MySQL STA Database Application Account Password" — Clarified that single quotes must be used around the *new-password* and *user-ID* variables.
- Former Chapter 5, "Changing the Session Timeout", removed. The session timeout can be changed in the STA user interface. For details, see the *STA User Interface Guide*.
- Added NEW Chapter 6, "Upgrading, Reinstalling, and Downgrading STA".
- Updates to Chapter 7, "Uninstalling STA":

- "Uninstall Using the Console" — Added usage of command to force console mode uninstallation (`-i console` option).

v1.0.0, April 2012

Initial release.

Preface

This document describes administration of Oracle's StorageTek Tape Analytics (STA) product. Before reading this book, you should have already installed and configured STA as described in the *StorageTek Tape Analytics Planning and Installation Guide* and *StorageTek Tape Analytics Configuration Guide.*

STA Documentation

Document Title	Description
StorageTek Tape Analytics Release Notes	Read this document before installing and using STA. It contains important release information, including known issues.
StorageTek Tape Analytics Planning and Installation Guide	Use this book to plan for installation of STA, install the Linux platform, and install the STA software.
StorageTek Tape Analytics Configuration Guide	After installing the STA software, use this book to configure libraries, SNMP, email notification, services, identity management, and certificates.
StorageTek Tape Analytics Administration Reference Guide	Use this book to learn about STA administrative tasks, including server, services, and password administration.
StorageTek Tape Analytics User Interface Guide	Use this book to learn about the STA user interface. It describes the layout of screens and provides step-by-step instructions for modifying their display so you can tailor them to your needs.
StorageTek Tape Analytics Data Reference Guide	Use this book to learn about using and interpreting the data displayed by STA. It provides definitions for all library, drive, and media data fields displayed by STA. It also provides reference information for all STA toolbars and data input fields.
StorageTek Tape Analytics Security Guide	Read this document for important STA security information, including requirements, recommendations, and general security principles.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support:

http://www.oracle.com/support/contact.html

http://www.oracle.com/accessibility/support.html (for hearing impaired)

1

Logging

STA provides the following logging/monitoring capabilities:

- Collects information about the STA application and events
- Provides information to assist with determining the source of a fault on your system
- Gives you a mechanism to generate logs of system activity as STA is running.

Logs can be used to trace STA application errors and exception cases, since they contain information that define the details that preceded the error.

STA uses Remote Diagnostics Agent (RDA) to take a snapshot copy of all logs and configurations related to the application. RDA collects and bundles the log files, which you can then send to Oracle Service for analysis and possible resolution.

> **Note –** You send an RDA log bundle only when there is an STA issue, not a library, drive, or media issue that is being reported by STA. RDA logs are valuable only for resolving STA GUI or WebLogic/MySQL issues.

This chapter includes the following topics:

Interface to Remote Diagnostics Agent (RDA)

RDA gathers system and application information and logs that can be used for STA performance analysis, debugging, security analysis, usage analysis, and other related purposes.

In addition, you can reduce the need to answer additional questions about your environment when you are working through service requests with Oracle Support.

In STA, when you execute the procedures described in this chapter, STA takes a snapshot copy of all logs and configurations related to the application, including capturing OS level information, installation information, and configuration information from the SQL database itself. You can then download the log as a ZIP file and forward it to Oracle Service.

Log Snapshot Process

STA stores a snapshot as a bundled file with an associated date/timestamp. You can create multiple RDA snapshots and store them by performing these tasks in this order:

1. Take an RDA snapshot (page 16).
2. Download the resultant ZIP file of the specific snapshot, selected by date/timestamp, to any directory on your computer (page 18).
3. Forward the ZIP file to Oracle Service personnel. Oracle Service will give you instructions for uploading the RDA snapshot (page 26).

Reasons for Taking a Log Snapshot

There are many reasons you may want to consider taking a log snapshot, depending on your own environment. However, there are some general cases where doing so is highly recommended:

- An unexpected STA application event occurs and it appears to be a bug.
- Oracle Service requests that you take a snapshot.
- The STA user interface automatically displays a screen to take a snapshot.

> **Note –** You send an RDA log bundle only when there is an STA issue, not a library, drive, or media issue that is being reported by STA. RDA logs are valuable only for resolving STA GUI or WebLogic/MySQL issues.

Log Retention

Log bundles are retained indefinitely until you delete them and are only limited by the amount of disk space on your Linux system.

RDA Log Snapshot Collection Options

The preferred method for running an RDA snapshot is through the user interface since it makes it very easy to capture and download log information. However, you can choose to use the Linux CLI if you wish.

Select one of these options to collect RDA log information:

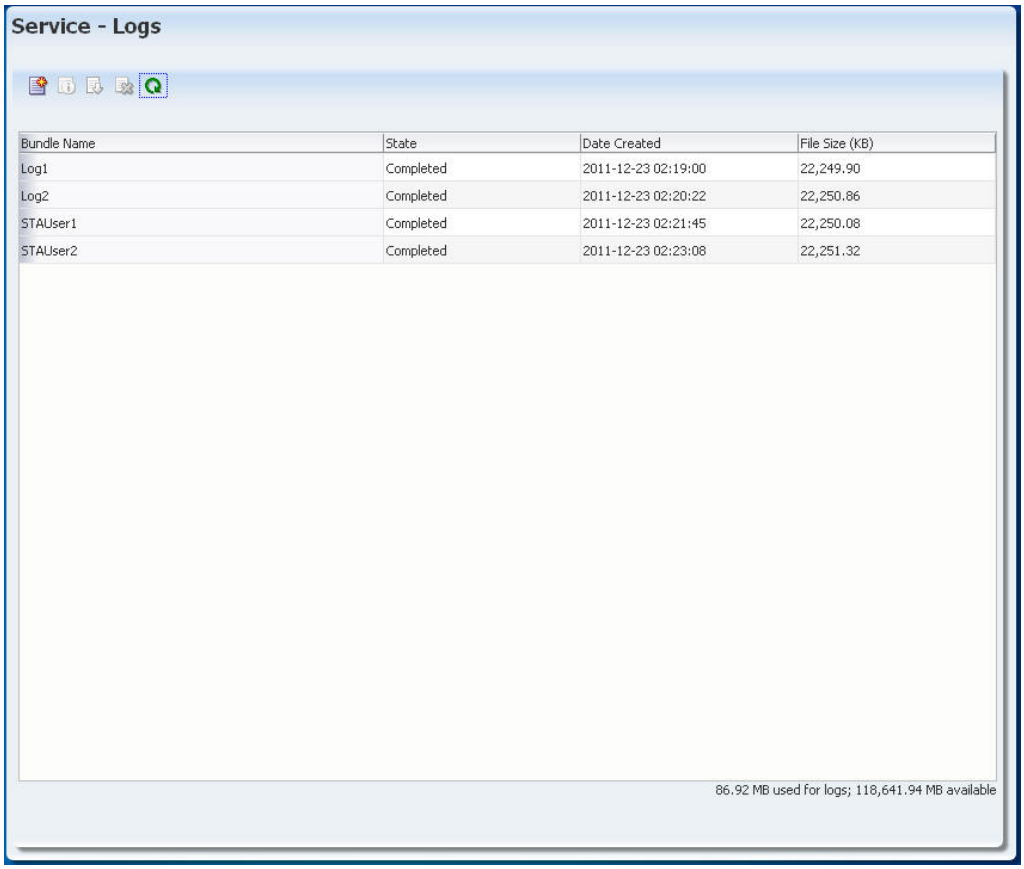
- "Collecting RDA Information With the User Interface" on page 14
- "Collecting RDA Information Without the User Interface" on page 24

Collecting RDA Information With the User Interface

▼ Access the Service Logs Screen

1. **From the STA accordion, select the Service -> Logs menu to bring up the STA interface to RDA.**

The Service Logs screen is displayed.



The columns in this table are:

Bundle Name

The name you enter when you specify a new log snapshot. See "Take an RDA Snapshot" on page 16.

State

The running state of the new log bundle (Queued, Running, Completed). After you submit a log run, the log should be in Queued state. Once the log run begins, it changes to Running and then to Completed when it is done.

Date Created

The date and time you started the RDA run.

File Size

The size of the log file.

▼ Take an RDA Snapshot

To create a new log snapshot:

1. **Click the Create New Log Bundle icon located in the toolbar.**

The Create New Log Bundle screen is displayed.

2. **Enter a snapshot name in the Log Bundle Name field.**

   Log name requirements are:

   - **Up to 210 characters long**
   - **Illegal special characters are: . : $ / \ ____ (four consecutive underscores)**

   Any name beginning with the following uppercase characters is invalid:

   - **COM**
   - **LPT**
   - **PRN**
   - **CON**
   - **AUX**
   - **NUL**

3. **Click Save to produce a new RDA log, or click Cancel to exit.**

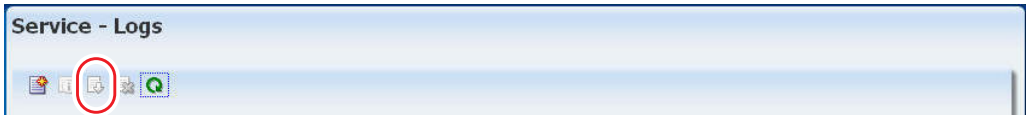
   You can check the progress of the log run by selecting the bundle row and then clicking the **Refresh Table** icon located in the toolbar. See "Monitor the Progress of the Snapshot" on page 22.

After the RDA log bundle has completed, you can also display textual output of the RDA run by clicking the **Log Bundle Run Info** icon located in the toolbar. See "Delete a Log Snapshot" on page 23.

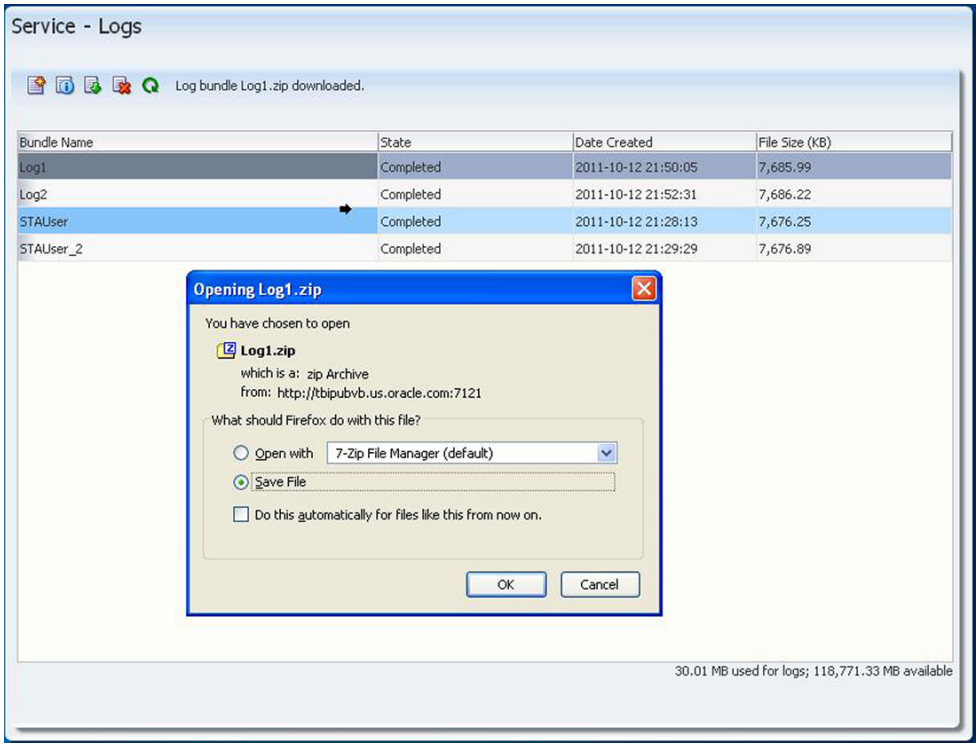
▼ Download a Log Snapshot

Download the selected RDA log snapshot ZIP file to your local PC through your browser's built-in download facility.

1. **Select the log bundle you want to download from the bundle(s) under the Bundle Name column.**
2. **Click the Download Selected Log Bundle icon located in the toolbar.**



3. **Save the file to a location of your choice.**



After you download the ZIP file to your system, you may want to view the output of the log file. If you see the following error message in the log file, you may safely ignore it:

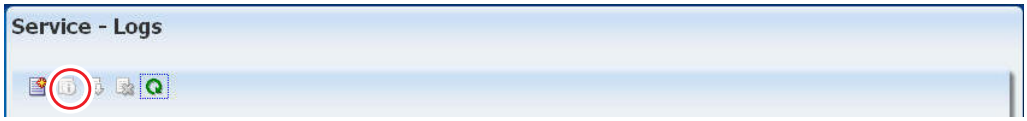
```
WARNING:
java.lang.ClassNotFoundException:
oracle.tbi.view.faces.ExceptionHandler
```

▼ Display Log Run Information

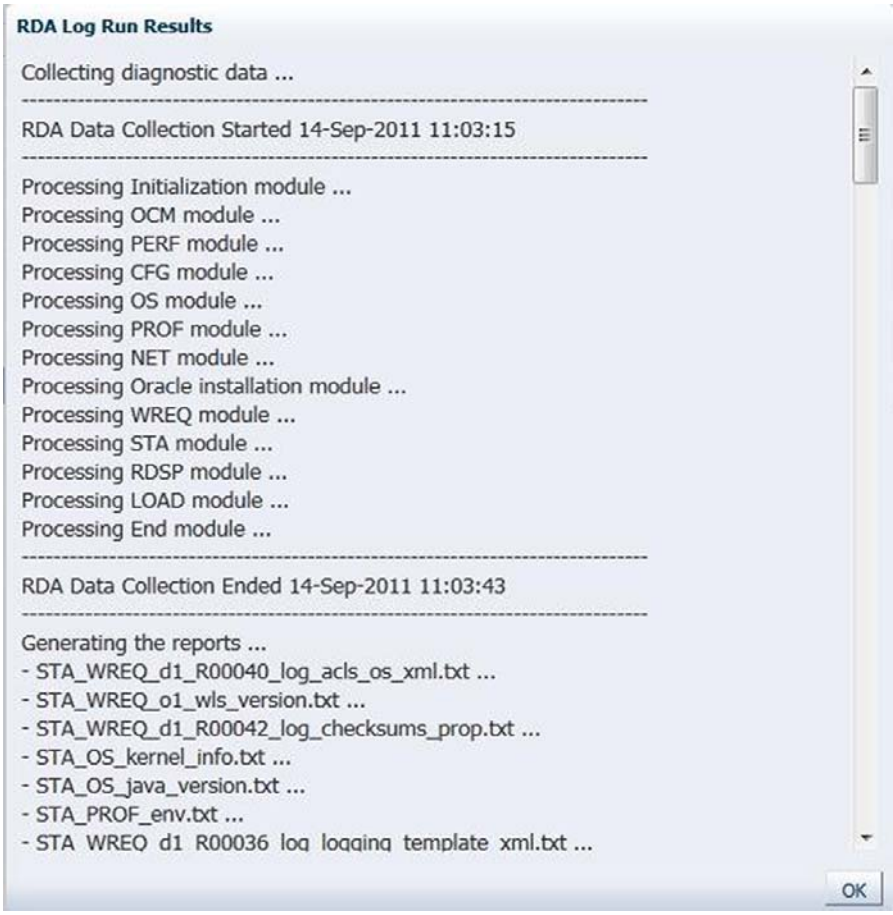
You may want to see output of an RDA log run. This procedure produces a dialog box that shows what modules were captured in the log and whether any modules ran into trouble during the process.

> **Note –** If the dialog box is empty, no output is available yet. For example, a log in the Queued state might yield an empty dialog box.

1. **Select a log under the Bundle Name column.**
2. **Click the Log Bundle Run Info icon located in the toolbar.**



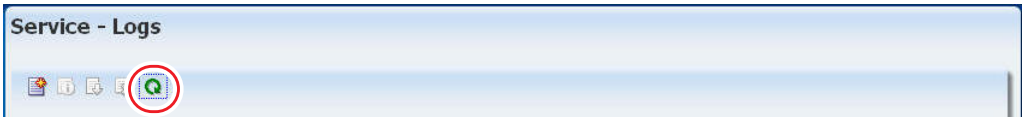
STA displays the textual output.


RDA Log Run Results
Collecting diagnostic data ...
RDA Data Collection Started 14-Sep-2011 11:03:15
Processing Initialization module ...
Processing OCM module ...
Processing PERF module ...
Processing CFG module ...
Processing OS module ...
Processing PROF module ...
Processing NET module ...
Processing Oracle installation module ...
Processing WREQ module ...
Processing STA module ...
Processing RDSP module ...
Processing LOAD module ...
Processing End module ...
RDA Data Collection Ended 14-Sep-2011 11:03:43
Generating the reports ...
- STA_WREQ_d1_R00040_log_acls_os_xml.txt ...
- STA_WREQ_o1_wls_version.txt ...
- STA_WREQ_d1_R00042_log_checksums_prop.txt ...
- STA_OS_kernel_info.txt ...
- STA_OS_java_version.txt ...
- STA_PROF_env.txt ...
OK

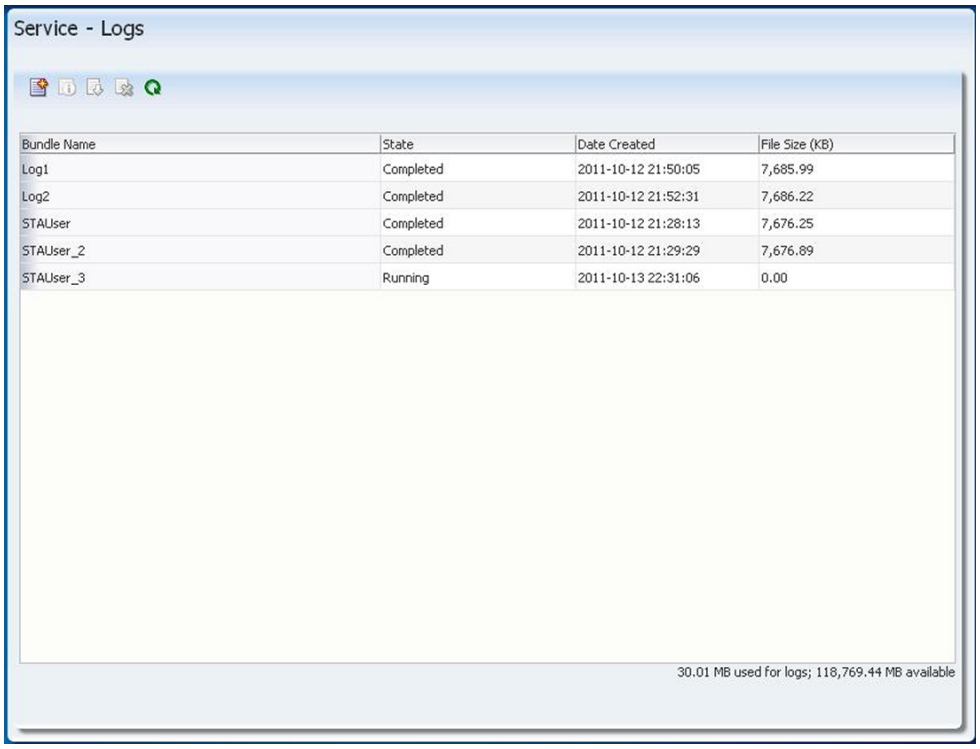
▼ Monitor the Progress of the Snapshot

When you create a new log, the RDA process runs in background and may take several minutes to complete.

1. **Click the Refresh Table icon located in the toolbar to monitor the running state (Queued, Running, or Complete) of a background RDA run.**



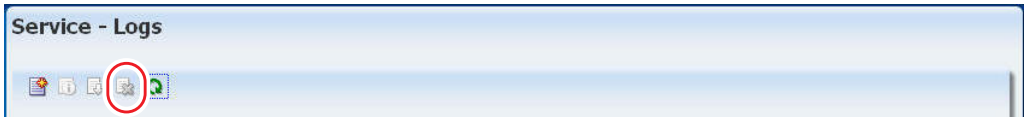
The newly-created log snapshot appears in the table when the run is complete.



▼ Delete a Log Snapshot

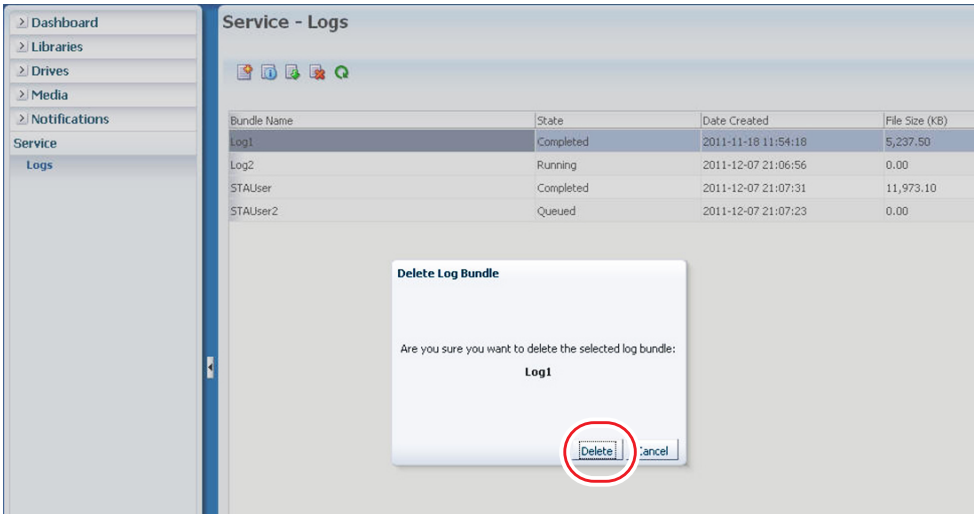
To permanently erase the selected RDA log snapshot from the STA system:

1. **Select a log under the Bundle Name column.**
2. **Click the Delete Selected Log Bundle icon located in the toolbar.**



The Delete Log Bundle dialog box is displayed.

3. **When STA asks for confirmation, click Delete to continue or Cancel to exit.**



Collecting RDA Information Without the User Interface

You can collect RDA information manually if you are not able to access the STA user interface.

You send an RDA log bundle only when there is an STA issue, not a library, drive, or media issue that is being reported by STA. RDA logs are valuable only for resolving STA GUI or WebLogic/MySQL issues.

Unlike the GUI, which maintains RDA log bundles in **`/Oracle/Middleware/rda/snapshots`**, the manual **`rda.sh`** writes snapshots to **`/Oracle/Middleware/rda/output/`**.

> **Note –** You can also generate an RDA log bundle through the Service -> Logs menu. This is the preferred method because it makes it very easy to capture the log and download it to the client host. See "Collecting RDA Information With the User Interface" on page 14.

▼ Generate an RDA Log Bundle from the Linux CLI

1. **Log on to the server on which STA is installed.**
2. **Access the rda directory.**

   ```
   cd /Oracle/Middleware/rda
   ```

3. **To ensure the setup.cfg file is found, enter the following command from the rda directory:**

   ```
   ./rda.sh  [-v]-f
   ```

   The **`-v`** option is optional. It allows you to view the progress of the data collection.

   The -f option forces a current data collection.

   If you specify the -h option, it provides rda.sh help.

4. **When rda.sh is executed manually, it always generates the same RDA log bundle into the same named file. Rename the current RDA ZIP file.**

   ```
   mv  /Oracle/Middleware/rda/output/RDA.STA__HOSTNAME.zip /
   Oracle/Middleware/rda/output/RDA.STA__HOSTNAME_XXXX.zip
   ```

   where *XXXX* is the new RDA ZIP file name.

5. **To access the files just created on the server, start Firefox on the server and enter the following URL:**

   ```
   file:///Oracle/Middleware/rda/output/STA__start.htm
   ```

6. **To access the files from the client host, download the newly created RDA log bundle ZIP file, unzip the bundle, and access the log bundle files through the URL cited in Step 5, with the path name adjusted.**

7. **If you wish, display the man page for the specific rda.sh module.**

   `rda.sh –M [`*module*`]`

where *module* is the module name (for example, STA).

The man page displays the following when you enter

rda.sh -M

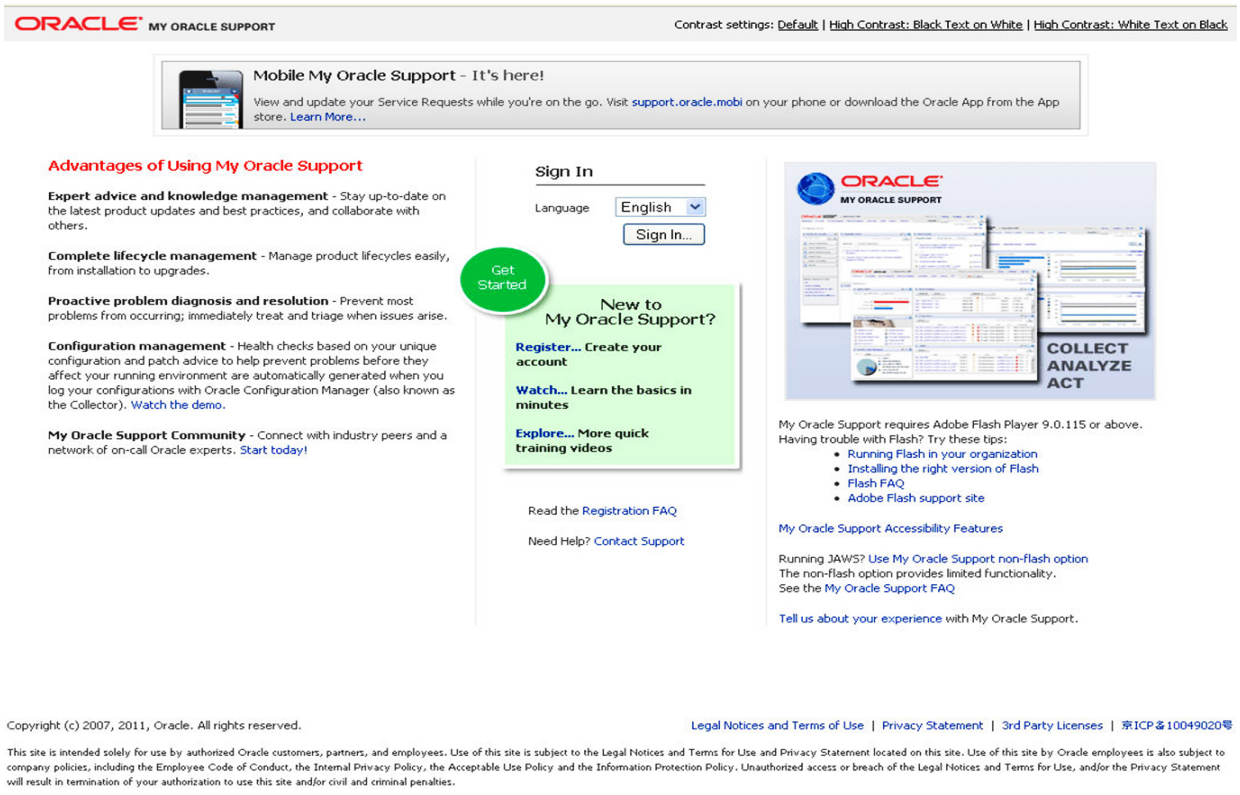
```
The purpose of RDA is to assist in problem analysis and
troubleshooting of local and remote databases, file systems, and
operating system environments in relation to Oracle Products.
This tool helps automate the task of gathering information about
an Oracle environment for the Oracle Support and Development
teams and customers to analyze the Oracle technology stacks
quickly.

For example, if a customer has problems with SQL*NET, then
Oracle Support may want to view the configuration files and the
environment related to the problems. This can include
information about the operating system, database, and file
system.
```

Forwarding the Log Snapshot to Oracle Support

1. **Access the My Oracle Support website:**

   https://support.oracle.com/CSP/ui/flash.html



2. **Click Sign In and provide your user name and password.**
3. **Click Create SR at the top of the Service Requests home page or in the top left corner of the Service Requests region.**
4. **Depending on the Support IDs registered in your profile, you may then need to select Software or Hardware.**

   The Create Service Request wizard guides you through the process of specifying product information and attaching configuration information to the SR when it is filed with Oracle Support. To ensure that Oracle Support has the most accurate system configuration details, you should associate the correct system to your service request.
5. **Click the Upload Files to Support link.**
6. **Click Browse.**
7. **Select the file that you want to upload.**
8. **Click Upload Selected Files.**

2

Server Administration

The following commands are used to start, shut down, and report the status of STA from the Linux command prompt. These commands apply to Linux 5u5 and 5u6.

Two types of commands are available:

- "STA Command" on page 28 (recommended)
- "Service Commands" on page 30

STA Command

The **STA** command brings the entire STA environment up or down and can provide a status as well. It also checks to see if a particular service is already in the state that you are attempting to move to and informs you if it is already in that state.

> **Note –** The **STA** command is recommended over the individual service commands discussed beginning on page 30 because it is a guaranteed method to ensure all services are brought up or down. Service commands are not always so reliable.

TABLE 2-1 shows memory usage requirements for the STA Domain Server, STA Managed Server, and MySQL.

TABLE 2-1 Memory Usage

Item	Memory Requirement
STA Domain Server	2 GB heap size
STA Managed Server	2 GB heap size
MySQL	2 GB memory

The following **STA** command tasks can be performed:

- "Start STA"
- "Stop STA" on page 29
- "Report STA Status" on page 29

▼ Start STA

STA start starts MySql, staservd, WebLogic Administration Server, and WebLogic staServer **in that order**.

1. **Enter this command to start STA:**

```
# STA start
```

```
# STA start
Starting STA Database....
Successfully started the STA Database
Starting STA Database Backup Service (staservd)....
Successfully started the STA Database Backup Service
Starting WebLogic Administration Server....
Successfully started the WebLogic Administration Server
Starting WebLogic staServer....
Successfully started the WebLogic staServer
```

▼ Stop STA

STA stop stops WebLogic staServer, Weblogic Administration Server, MySql, and staservd **in that order**.

1. **Enter this command to stop STA:**

```
# STA stop
```

```
# STA stop
Stopping the WebLogic staServer....
Successfully stopped the WebLogic staServer
Stopping the WebLogic Administration Server....
Successfully stopped the WebLogic Administration Server
Stopping the STA Database Server Backup Service (staservd)....
Successfully stopped the STA Database Server Backup Service
Stopping the STA database Server....
Successfully stopped the STA Database Server
```

▼ Report STA Status

STA status reports the status of MySql, WebLogic Administration Server, and WebLogic staServer.

1. **Enter this command to obtain a status:**

```
# STA status
```

```
# STA status
STA Database server is running
STA Database Services Daemon (staservd) is running
Weblogic Domain Administration Server is running
WebLogic staServer is running
```

Service Commands

Service commands start, shut down, or report a status for each service installed for STA.

The following Service command tasks can be performed:

- "Start, Stop, or Report Status for the WebLogic AdminServer"
- "Start, Stop, or Report Status for the WebLogic staServer" on page 30
- "Start, Stop, or Report Status for MySQL" on page 31
- "Start, Stop, or Report Status for the STA Services Daemon" on page 31

▼ Start, Stop, or Report Status for the WebLogic AdminServer

1. **To start WebLogic AdminServer:**

```
# service weblogic start
```

2. **To stop WebLogic AdminServer:**

```
# service weblogic stop
```

3. **To check status of WebLogic AdminServer:**

```
# service weblogic status
```

```
# service weblogic start
Starting WebLogic Administration Server...

# service weblogic stop
Stopping WebLogic Administration Server...

# service weblogic status
online
```

▼ Start, Stop, or Report Status for the WebLogic staServer

1. **To start WebLogic staServer:**

```
# service staserver start
```

2. **To stop WebLogic staServer:**

```
# service staserver stop
```

3. **To check status of WebLogic staServer:**

```
# service staserver status
```

```
# service staserver start
Starting WebLogic staServer...
[root@hostname ~]# service staserver stop
Stopping WebLogic staServer...
[root@hostname ~]# service staserver status
online
```

▼ Start, Stop, or Report Status for MySQL

1. **To start MySQL:**

```
# service mysql start
```

2. **To stop MySQL:**

```
# service mysql stop
```

3. **To check the status of MySQL:**

```
# service mysql status
```

```
# service mysql status
MySQL running (18243)        [  OK  ]

# service mysql stop
Shutting down MySQL....      [  OK  ]

# service mysql start
Starting MySQL.              [  OK  ]
```

▼ Start, Stop, or Report Status for the STA Services Daemon

1. **To start STA Services Daemon:**

```
# service staservd start
```

2. **To stop STA Services Daemon:**

```
# service staservd stop
```

3. **To check the status of STA Services Daemon:**

```
# service staservd status
```

```
# service staservd start
Starting STA Services daemon Tue Oct 18 19:10:18 MDT 2011 ...
started [pid=26635]
# service staservd status
STA Services daemon is running [pid=26635]
# service staservd stop
Stopping STA Services [pid=19794] ... stopped.
```

3

Database Services Administration

This chapter includes the following topics:

For details on how to configure and activate these services, see the "Configuring STA Services" chapter within the *StorageTek Tape Analytics Configuration Guide*.

STA Services Daemon

The following topics are discussed here:

Overview

The STA Services daemon is a continuously running Linux service that manages and runs the STA Backup and STA Resource Monitor services. The name of the daemon is **staservd**.

The STA Services daemon automatically starts when the STA server is booted up, and terminates when the server is shut down. Both the STA Backup and the STA Resource Monitor services run as separate execution threads within the STA Services daemon.

See "STA Backup Service" on page 37 and "Reset the STA Backup Service Password" on page 41 for descriptions of these services.

> **Note –** After installation of the STA application, the STA Services daemon starts the STA Backup and STA Resource Monitor services, but because they are not yet configured, they are not activated. The services are not activated to perform their respective functions until they are fully configured. For a description of this process, see the "Configuring STA Services" chapter of the *StorageTek Tape Analytics Configuration Guide*.

Check the Status of the STA Services Daemon

Check to be sure the STA Services daemon is running. If it is not, see "Start and Stop the STA Services Daemon" on page 34.

```
# service staservd status
STA Services Daemon is running [pid=1374]
```

Start and Stop the STA Services Daemon

To start the STA Services Daemon:

```
# service staservd start
Starting STA Services Daemon Wed Nov 2 20:32:23 MDT 2011 ...
started [pid=17571]
```

To stop the STA Services Daemon:

```
# service staservd stop
Stopping STA Services Daemon [pid=1374] ... stopped.
```

▼ Manually Install the STA Services Daemon

STA automatically installs the STA Services Daemon components and configures the STA Backup Server. However, if you need to manually install this service, use this procedure.

1. **Copy the staservd file as follows:**

```
# cp $STAHOME/common/bin/staservd /etc/init.d/staservd
```

Where:

$STAHOME = /Oracle/StorageTek_Tape_Analytics

2. **Ensure the permissions are set.**

```
# chmod a+x /etc/init.d/staservd
```

3. **Install the daemon as a Linux service.**

```
# chkconfig --add staservd
```

4. **Start the service.**

```
# service staservd start
Starting STAServer Mon Jul 18 14:00:30 MDT 2011 ... started
[pid=1147]
```

▼ Manually Uninstall the STA Services Daemon

1. **Stop the service.**

```
# service staservd stop
```

2. **Uninstall the daemon as a Linux service.**

```
# chkconfig --del staservd
```

3. **Delete the init script.**

```
# rm /etc/init.d/staservd
```

STA Backup Service

The following topics are discussed here:

Overview

The STA Backup Service is one of several services running within the STA Services Daemon. The STA Backup Service performs automatic full and incremental backups of the STA database and key configuration directories, writing these files to a specified location on the server on which STA is installed. They can also be written in compressed form to a remote server, if you have configured one.

> **Note –** Oracle recommends that you configure a remote backup server.

For a list of procedures required to configure the STA Backup service, see the "Configuring STA Services" chapter within the *StorageTek Tape Analytics Configuration Guide*.

The STA Backup Service within the STA Services daemon can be reconfigured outside of the STA application using the STA Backup Services administration utility, **`staservadm`**.

Before proceeding, check to ensure the STA Services Daemon is running. See "Check the Status of the STA Services Daemon" on page 34.

Full Backup Process

After it is configured, the STA Backup service performs the following process once every 24 hours:

1. Initiates a high-speed dump (also referred to as a "hot backup") of the following types of files:
   - MySQL database dump file
   - MySQL binary log files
   - STA Services daemon and STA WebLogic configuration files
   - STA Services daemon and STA Backup service administration logs
2. Transfers the dump file to the designated backup host
3. Deletes the previous day's full dump file and associated incremental dump files from the STA server

4. Writes a copy of the current day's dump file to the following directory on the STA server: **/dbdata/mysql/backups**

Configuring the Backup Service

You configure the STA Backup service with the STA Backup Service Administration Utility, **staservadm**. See the *StorageTek Tape Analytics Configuration Guide* for information about using this utility to configure the STA Backup service, and for a list of preference settings you can use with the utility.

Display the Backup Service Preference Settings

Enter the following command to display the status of the current preference settings:

```
staservadm -Q
```

If the Configured field says "no," then the Backup Service is running in an "idle" mode and is not performing any backups. You will need to supply the proper configuration settings.

See the *StorageTek Tape Analytics Configuration Guide* for instructions on entering settings.

```
# staservadm -Q
Contacting daemon...connected.
Querying Preferences.
Current STA Backup Service Settings:
   Configured            [yes]
   File Transfer      -X [SCP]
   Full Backup        -T [02:22]
   Sleep Interval     -i [30 sec]
   Backup Hostname    -s [stabackups.mycompany.com]
   Backup Username    -u [root]
   Backup Password    -p [*******]
   Backup Directory   -d [/backups/tbivb01]
   Database Username  -U [stadba]
   Database Password  -P [********]
 ========================================
```

Clear Preference Settings

Enter the following command to clear the current preference settings:

```
staservadm -C
```

Notice that the Backup service is no longer configured and will return to the "idle" state when you do this. You must now provide new settings.

See the *StorageTek Tape Analytics Configuration Guide* for instructions on entering settings.

```
# staservadm -C
Contacting daemon...connected.
Clearing Preferences.
Done.
 Current STA Backup Service Settings:
   Configured            [no]
   File Transfer      -X [SCP]
   Full Backup        -T [00:00]
   Sleep Interval     -i [300 sec]
   Backup Hostname    -s []
   Backup Username    -u []
   Backup Password    -p []
   Backup Directory   -d []
   Database Username  -U []
   Database Password  -P []
=======================================
```

▼ Verify Files Have Been Sent to the Target Server

To verify that files have been sent successfully:

- Check the logs on the server.
- Log on to the target backup server and list the directory contents of the directory you specified when you configured the backup service.

> **Note –** For Backup Service configuration information, see the "Configuring STA Services" chapter within the *StorageTek Tape Analytics Configuration Guide*.

Check the Server Logs

The staservd.log.0 log file registers the activities of the Backup services configuration utility ServerAdm.

1. **Change the working directory to the STA backup log directory.**

```
# cd /var/log/tbi/db/backups
```

2. **Search the staservd.log.0 log file for the string "INFO: done. Database dump completed."**

```
# grep "INFO: done. Database dump completed" staservd.log.0

INFO: done. Database dump completed, file located at /dbdata/
mysql/backups/2011304.stafullbackup.sql

INFO: done. Database dump completed, file located at /dbdata/
mysql/backups/2011304.stafullbackup.sql

INFO: done. Database dump completed, file located at /dbdata/
mysql/backups/2011305.stafullbackup.sql

INFO: done. Database dump completed, file located at /dbdata/
mysql/backups/2011306.stafullbackup.sql
```

Check the Target Backup Server

3. **Log on to the target backup server with your backup user id. In this example, the backup username is "stabck" and the backup password is "bckpwd1."**

```
# ssh stabck@stabackups.mycompany.com

Password: bckpwd1

Last login: Wed Nov  1…
```

4. **List the files. In this example, the directory /backups/tbivb01 has previously been set up to receive the backup files from the server "tbivb01."**

```
# ls -1 /backups/tbivb01
0.stadb-bin.000023.gz
0.stadb-bin.000024.gz
0.stadb-bin.000026.gz
0.stadb-bin.000027.gz
2011306.stadb-bin.000023.gz
2011306.conf.zip.gz
2011306.fmwconfig.zip.gz
2011306.stadb-bin.000025.gz
2011306.stadb-bin.000026.gz
2011306.stafullbackup.sql.gz
```

▼ Verify a Local Copy of the Backup Files Appears on the Server

Verify that a copy of the most recent backup files have been saved locally on the server on which STA is installed.

1. List the files in the /dbdata/mysql/backups directory.

```
# ls -1 /dbdata/mysql/backups
2011303.conf.zip
2011306.conf.zip
2011306.fmwconfig.zip
2011306.stafullbackup.sql
```

Reset the STA Backup Service Password

See "Password Administration" on page 63.

STA Resource Monitor Service

The following topics are discussed here:

Overview

The STA Resource Monitor service monitors and reports on the following STA server resources:

- Database tablespace
- Database disk volume space
- Logging volume disk space
- Physical memory usage

You may set usage "high-water marks" (HWM) for each of these resources. A high-water mark is a threshold at which an alert will be raised. When the threshold is reached or exceeded, an alert is recorded in the standard daily resource report and optionally emailed to one or more designated recipients.

For example, if you set the database tablespace HWM to 60%, when the STA Resource Monitor detects that the STA application has used 60% or more of the maximum allowable database tablespace, it turns on the tablespace alert and sends an email to the designated recipients. Additionally, if "nag mode" is turned on, the Resource Monitor continues to send an alert email each time it scans the system.

Configuring the Resource Monitor Service

You configure the STA Resource Monitor service with the STA Resource Monitor Administration Utility, staresmonadm. See the *StorageTek Tape Analytics Configuration Guide* for information about using this utility to configure the STA Resource Monitor service, and for a list of preference settings you can use with the utility.

Query the Current Resource Monitor Preference Settings

Enter the following command to query the state of the current preference settings:

```
staresmonadm -Q
```

If the Configured field says "no," then the Resource Monitor Service is running in an "idle" mode neither monitoring resources nor sending reports. You will need to supply the settings.

See the *StorageTek Tape Analytics Configuration Guide* for instructions on entering settings.

```
# staresmonadm -Q
Contacting daemon...connected.
Querying Preferences.
Current STA Resource Monitor Service Settings:
   Configured              [yes]
   Send Reports        -T  [08:15]
   Sleep Interval      -i  [3600 sec]
   Alert Nagging       -n  [on]
   DB Username         -U  [stadba]
   DB Password         -P  [********]
   DB Tablespace hwm   -t  [66%]
   DB Disk Volume hwm  -d  [75%]
   STA Log Volume hwm  -l  [75%]
   System Memory hwm   -m  [80%]
   Email 'From:'       -f  [StaResMon@localhost.com]
   Email 'To:'         -r  [joe.adminguy@mycompany.com]
   Email 'Subject:'    -s  [STA Resource Report <staapp01>]
   Output File         -o  [/var/log/tbi/db/staresmon.csv]
====================================================
```

Clear the Resource Monitor Preference Settings

Enter the following command to clear the current preference settings:

```
staresmonadm -C
```

Notice that the Resource Monitor service is no longer configured and will return to the "idle" state. You must now provide new settings.

See the *StorageTek Tape Analytics Configuration Guide* for instructions on entering settings.

```
# staresmonadm -C
Contacting daemon...connected.
Clearing Preferences.
Done.
 Current STA Resource Monitor Service Preferences:
   Configured              [no]
   Send Reports         -T [00:00]
   Sleep Interval       -i [300 sec]
   Alert Nagging        -n [off]
   DB Username          -U []
   DB Password          -P []
   DB Tablespace hwm    -t [-1%]
   DB Disk Volume hwm   -d [-1%]
   STA Log Volume hwm   -l [-1%]
   System Memory hwm    -m [-1%]
   Email 'From:'        -f [StaResMon@localhost]
   Email 'To:'          -r []
   Email 'Subject:'     -s [STA Resource Monitor Report]
   Output File          -o [/var/log/tbi/db/staresmon.csv]
 ====================================================
```

Reset the STA Resource Monitor Password

See "Password Administration" on page 63.

Resource Monitor Reports

The Resource Monitor can produce two different reports:

- "Resource Monitor Standard Report" on page 45
- "Resource Depletion Alert Report" on page 48

Resource Monitor Standard Report

A Resource Monitor Standard Report is sent once a day at approximately the time specified by the **`staresmonadm`** "daily report send time" (-T) command line option. The report is sent to the email recipients you specified when you configured this service.

> **Note –** For Resource Monitor configuration information, see the "Configuring STA Services" chapter within the *StorageTek Tape Analytics Configuration Guide*.

If you do not set a time, the report is sent at the first scan after midnight.

The report provides data for these server resources:

- Database tablespace
- Database disk volume
- Logging volume disk
- System physical memory

If any of these resources exceeds a high-water mark threshold, an alert appears in the report.

▼ Set a Specific Time to Send a Report

1. **Enter the following command if you want the Standard Report sent at 05:15.**

```
# staresmonadm -T 05:15
Contacting daemon...connected.
Setting Send Time............ 05:15
Done.
 Current STA Resource Monitor Service Settings:
   Configured              [yes]
   Send Reports         -T [05:15]
   Sleep Interval       -i [3600 sec]
   Alert Nagging        -n [on]
   DB Username          -U [stadba]
   DB Password          -P [********]
   DB Tablespace hwm    -t [66%]
   DB Disk Volume hwm   -d [75%]
   STA Log Volume hwm   -l [75%]
   System Memory hwm    -m [80%]
   Email 'From:'        -f [StaResMon@staapp01.mycompany.com]
   Email 'To:'          -r [joe.adminguy@mycompany.com]
   Email 'Subject:'     -s [STA Resource Report <staapp01>]
   Output File          -o [/var/log/tbi/db/staresmon.csv]
=====================================================
```

An example of a typical Standard Report is shown below:

```
STA RESOURCE MONITOR STANDARD REPORT
System: staapp01
Scanned: 2011-10-28 12:46:10

+---------------------------------+
| Database Tablespace             |
+---------------------------------+
  HWM            : 80.00%
  Used           : 0.03%
  MB Used        : 5
  MB Free        : 19451
  MB Total       : 19456
  Location       : /dbdata/mysql

+---------------------------------+
| Database Disk Volume            |
+---------------------------------+
  HWM            : 80.00%
  Used           : 22.95%
  MB Used        : 12367
  MB Free        : 41508
  MB Total       : 53875
  Directory      : /dbdata/mysql

+---------------------------------+
| Logging Disk Volume             |
+---------------------------------+
  HWM            : 82.00%
  Used           : 22.95%
  MB Used        : 12367
  MB Free        : 41508
  MB Total       : 53875
  Directory      : /var/log/tbi

+---------------------------------+
| System Physical Memory          |
+---------------------------------+
  HWM            : 90.00%
  Used           : 61.87%
  MB Used        : 4944
  MB Free        : 3047
  MB Total       : 7991
  Hostname       : staapp01
```

Resource Depletion Alert Report

A Resource Depletion Alert Report is sent after every scan, if the **staresmonadm** alert "Nag" mode (-n) command line option is set to "ON." The interval between each scan is determined by the Sleep Interval (-i) attribute, and the report is sent to the email recipients you specified when you configured this service.

> **Note –** For Resource Monitor configuration information, see the "Configuring STA Services" chapter within the *StorageTek Tape Analytics Configuration Guide*.

▼ Set the Nag Mode

1. **Specify ON for the "Nag" mode. If the "Nag" mode is OFF, alerts are shown only in the Standard Report.**

```
# staresmonadm -n ON
Contacting daemon...connected.
Setting Send Time............ 05:15
Done.
 Current STA Resource Monitor Service Settings:
   Configured              [yes]
   Send Reports         -T [05:15]
   Sleep Interval       -i [3600 sec]
   Alert Nagging        -n [on]
   DB Username          -U [stadba]
   DB Password          -P [********]
   DB Tablespace hwm    -t [66%]
   DB Disk Volume hwm   -d [75%]
   STA Log Volume hwm   -l [75%]
   System Memory hwm    -m [80%]
   Email 'From:'        -f [StaResMon@staapp01.mycompany.com]
   Email 'To:'          -r [joe.adminguy@mycompany.com]
   Email 'Subject:'     -s [STA Resource Report <staapp01>]
   Output File          -o [/var/log/tbi/db/staresmon.csv]
====================================================
```

An example of an Alert Report for a low system memory condition is shown below:

```
Subject: ALERT :: STA Resource Depletion [2011-10-28 12:53:26]
Date: Fri, 28 Oct 2011 12:53:27 -0600
From: RESMON@stabackups.mycompany.com
To: Bob Smith


STA RESOURCE DEPLETION REPORT
System: stabackups
Scanned: 2011-10-28 12:53:26

************************************************************
*                      A L E R T S                         *
************************************************************
==================================================
ALERT - Low System Physical Memory
==================================================
  Physical memory usage has exceeded threshold value!
  HWM             [60.00%]
  Used            [61.76%] (!)
  MB Used         [4935]
  MB Free         [3056]
  MB Total        [7991]
  Hostname        [staapp01]
  Recommendations:
  1) Shutdown unneeded processes.
  2) Install additional memory.
```

File Types and Locations

The STA Services are comprised of executable scripts, java jar files containing server and client applications, configuration files, dump file, logging files, and a cumulative data file. This section describes their purposes and locations.

- "STA Services Daemon Startup/Shutdown Script" on page 50
- "STA Backup Service Administration Utility" on page 50
- "STA Resources Monitor Administration Utility" on page 50
- "Executable Program Locations" on page 51
- "Backup File Locations" on page 51
- "Resource Monitor File Locations" on page 54

STA Services Daemon Startup/Shutdown Script

The STA Services daemon startup/shutdown script, **staservd**, and system run level symbolic links are located at:

```
/etc/init.d/staservd - Main startup/shutdown script
/etc/rc0.d/K04staservd - Symbolic link for system shutdown
/etc/rc1.d/K04staservd - Symbolic link for system shutdown
/etc/rc2.d/S96staservd - Symbolic link for system startup
/etc/rc3.d/S96staservd - Symbolic link for system startup
/etc/rc4.d/S96staservd - Symbolic link for system startup
/etc/rc5.d/S96staservd - Symbolic link for system startup
/etc/rc6.d/K04staservd - Symbolic link for system shutdown
```

The staservd init script and its associated symbolic links are created at STA install time by the STA installer. If there is a need to manually install and configure the STA Services daemon, see "Manually Install the STA Services Daemon" on page 35.

STA Backup Service Administration Utility

The STA Backup Service Administration Utility, staservadm, is a Perl script that calls a Java client application named ServerAdm that is contained in the staServerAdm.jar file. For Backup Service configuration information, see the "Configuring STA Services" chapter within the *StorageTek Tape Analytics Configuration Guide*. For Backup Service administration information, see "STA Backup Service" on page 37.

STA Resources Monitor Administration Utility

The STA Resources Monitor Administration Utility, staresmonadm, is a Perl script that is a command line interface for calling a Java client application named StaResMonAdm that is contained in the staResMonAdm.jar file. The StaResMonAdm Java program is an RMI client that "talks to" the STA Services daemon to set and reset run-time preferences.

Executable Program Locations

TABLE 3-1 lists the executable programs and their locations.

TABLE 3-1 Executable Program Locations

Program	Location
STA Services program jar file	$STAHOME/common/lib/staServer.jar
STA Backup Services Administration Utility Java application jar file	$STAHOME/common/lib/staServerAdm.jar
STA Backup Service Administration Utility user script file, staservadm	$STAHOME/common/bin/staservadm
STA ResMon Administration Utility Java application jar file	$STAHOME/common/lib/staStaResMon.jar
STA ResMon Administration Utility Java user script file, staresmonadm	$STAHOME/common/bin/staresmonadm

Where:

$STAHOME = /Oracle/StorageTek_Tape_Analytics

Backup File Locations

These are the kinds of files involved in the backup operation:

- STA Services Daemon and Backup Service Admin Logs
- MYSQL Database Dump Files
- MySQL Binary Logs
- STA Services Daemon and WebLogic Configuration Files

STA Services Daemon and Backup Service Admin Logs

These log the activities of the STA Services Daemon Server, STAServer, and its Backup services configuration utility **`ServerAdm`**. Admin logs are collections of up to 10 log files, each up to 1.0 MB in size. The log file names are of the format "*.log.N," where "N" is the number of the log; for example, **`staservd.log.0`**, **`staservadm.log.0`**, **`staservd.log.1`**, and so forth.

The logs are circularly rotated such that log file #1 will be reused when staservd.log.9 has been filled up. The active log file is always #0 (that is, **`staservd.log.0)`**. When log #0 fills up, it is renamed to log #1 and a new log #0 is started. By default the STAServer and ServerAdm logs are located at:

```
/var/log/tbi/db/backups
```

The location of and internal log format type (either simple ASCII text or XML markup) is controlled by the logging properties file staservd.log.props and staservadm.log.props located at:

```
$STAHOME/common/conf/staservd.log.props
$STAHOME/common/conf/staservadm.log.props
```

Where:

$STAHOME = /Oracle/StorageTek_Tape_Analytics

MYSQL Database Dump Files

The MySQL database dump file is a snapshot-in-time of the database schema and data contents. STA Backup service performs these actions:

1. Initiates a high-speed dump (sometimes called a "hot backup") once every 24 hours of the file types discussed in this section
2. Transfers the latest dump file to the designated backup host
3. Deletes the previous day's full dump file and associated incremental dump files on the server
4. Writes a copy of the current days' dump file to the /dbdata/mysql/backups directory

   The dump file name format is *YYYYCCC.stafulldump.sql*, where *YYYY* is the year and *CCC* is the calendar day of the year. For example, a dump file generated on July 22, 2011 would have the name "*2011203.stafulldump.sql*."

The STA Backup Service by default will place its local dump files and incremental binlog files into the directory:

/dbdata/mysql/backups

MySQL Binary Logs

The term *incremental dumps* refers to the MySQL binary logs (binlogs) that record all transactions that result in a change to a database. The STA Backup Service treats binlogs as incremental backups following the main database dump.

STA incremental dumps are comprised of all the binary logs that are produced since the last full dump. By replaying the binlogs, you can restore a database to its state up the last transaction recorded in the log.

Thus, a restore consists of loading the latest dump file, then replaying, in order, all the MySQL binlogs that were generated following the latest database dump.

Backing up the binlogs, therefore, consists of making a list of all the binlogs created since the most recent full dump and then transmitting each of those logs (except the current one because it is still open) to the backup server.

The backup binary log naming format is *YYYYCCC.stadb-bin.NNNNN*, where *YYYY* is the year and *CCC* is the calendar day of the year, and *NNNNN* is the MySQL log sequence number. For example, a binlog file generated on July 22, 2011 would have the name "*2011203.stadb-bin.000168.gz*."

The MySQL binary log location is defined in the MySQL settings file /etc/my.cnf. That is currently set to:

```
/var/log/tbi/db/
```

Local copies of the backup binlog files are located at:

```
/dbdata/mysql/backups
```

Note – All but the three most recent binlogs that are successfully transferred to the backup server are purged from the server using the MySQL command **`"PURGE BINLOGS TO 'log_name'"`**.

That will leave the current binlog, the two previous binlogs, and the current day's full backup file remaining on the server.

STA Services Daemon and WebLogic Configuration Files

In addition to files necessary to recover the STA application database, the STA Backup Service also backs up STA's WebLogic configuration files as well as its own STA Services daemon configuration files. The backup is actually a recursive backup of all the files and directories in their respective configuration directories.

Configuration file backups are performed once every 24 hours when the full STA database dump is performed. The backup file names format is *YYYYCCC.<dirname>.zip.gz*, for example, *2011203.fmconfig.zip.gz*.

The source and target locations of these backups are shown in TABLE 3-2:

TABLE 3-2 Backup Source/Target Locations

Source Location	Local Copy	Remote Copy
$STAHOME/common/conf/*	$BACKUPS/YYYYCCC.conf.zip	$RHOST:$RDIR/YYYYCCC.conf.zip.gz
$WLHOME/config/fmconfig/*	$BACKUPS/YYYYCCC.fmconfig.zip	$RHOST:$RDIR/YYYYCCC.fmconfig.zip.gz

Where:

$STAHOME = /Oracle/StorageTek_Tape_Analytics

$WLHOME = /Oracle/Middleware/user_projects/domains/TBI

$BACKUPS = /dbdata/mysql/backups

$RHOST = Backup server IP address or name

$RDIR = Directory on backup server

Resource Monitor File Locations

There are two kinds of files involved in the monitoring operations:

- STA Services Daemon and ResMonAdm Logs
- STA Resource Monitor CSV File

STA Services Daemon and ResMonAdm Logs

These log the activities of the STA Services daemon and the Resource Monitor Administration utility, staresmonadm. These logs are collections of up to 10 log files, each up to 1.0 MB in size. The log file names are of the format "*.log.N," where "N" is the number of the log, for example, staservd.log.0, staresmonadm.log.0, staservd.log.1, and so forth.

The logs are circularly rotated such that log file #1 will be reused when staservd.log.9 has been filled up. The active log file is always #0 (that is, staservd.log.0). When log #0 fills up, it is renamed to log #1 and a new log #0 is started. By default the STA Services, STA ResMon, and STA ResMonAdm logs are all located at:

```
/var/log/tbi/db/backups
```

The location and log format (either simple ASCII text or XML markup) are controlled by the logging properties file staservd.log.props and staresmonadm.log.props located at:

```
$STAHOME/common/conf/staservd.log.props
$STAHOME/common/conf/staresmonadm.log.props
```

Where:

$STAHOME = /Oracle/StorageTek_Tape_Analytics

STA Resource Monitor CSV File

Each time ResMon scans the system, it writes the gathered values out to a comma-separated-value (CSV) file located, by default, at:

/var/log/tbi/db/staresmon.csv

Programs such as Excel and MySQL can load this data file and perform various analytic and graphing functions with its time-based values (for example, analysis of resource depletion trends).

> **Note –** The ResMon CSV file is neither purged nor rolled, nor is it backed up by the STA Backup Service.

Each record in staresmon.csv represents a scan of the system. The format of the 21 column record is:

COL	HEADER	DESCRIPTION	FORMAT
1	TIMESTAMP	Date and time of the scan	"YYYY-MM-DD HH:MM:SS"
2	TS_MB_MAX	Maximum tablespace	123
3	TS_MB_USED	Total database space used	123
4	TS_MB_AVAIL	Database space remaining	123
5	TS_PCT_USED	Database tablespace used as a percentage of the max	12.34%
6	TS_PCT_HWM	Database tablespace high water mark as a percentage of the max	12.34%
7	DBVOL_MB_MAX	Maximum available space on the volume containing the database	123
8	DBVOL_MB_USED	Total database disk volume space used	123
9	DBVOL_MB_AVAIL	Database volume disk space remaining	123
10	DBVOL_PCT_USED	Database volume disk space used as a percentage of the max	12.34%
11	DBVOL_PCT_HWM	Database volume high water mark as a percentage of the max	12.34%
12	LOGVOL_MB_MAX	Maximum available space on the volume containing the logs	123
13	LOGVOL_MB_USED	Total logging disk volume space used	123
14	LOGVOL_MB_AVAIL	Logging volume disk space remaining	123
15	LOGVOL_PCT_USED	Logging volume disk space used as a percentage of the max	12.34%
16	LOGVOL_PCT_HWM	Logging volume high water mark as a percentage of the max	12.34%
17	MEM_MB_MAX	Maximum installed physical RAM.	123
18	MEM_MB_USED	Total physical memory used	123
19	MEM_MB_AVAIL	Physical memory space remaining	123
20	MEM_PCT_USED	Physical memory space used as a percentage of the max	12.34%
21	MEM_PCT_HWM	Physical memory high water mark as a percentage of the max	12.34%

Logging Configuration Files

Logging for the STA Services daemon, the Backup Service, Backup Service Administration Utility, and STA Resource Monitor Utility is controlled by logging configuration files located at:

```
$STAHOME/common/conf/staservd.log.props
$STAHOME/common/conf/staservadm.log.props
$STAHOME/common/conf/staresmonadm.log.props
```

Where:

$STAHOME = /Oracle/StorageTek_Tape_Analytics

The logging file contents and format are initialized and controlled by the Java Log Manager configuration properties. These properties are read from the logging properties files noted above. The following information can be found at:

http://download.oracle.com/javase/1.4.2/docs/api/java/util/logging/FileHandler.html.

TABLE 3-3 Logging File Contents

Property	Description	StorageTek Tape Analytics Setting
java.util.logging.FileHandler.append	Specifies whether the FileHandler should append onto any existing files (defaults to false)	true
java.util.logging.FileHandler.count	Specifies how many output files to cycle through (defaults to 1).	10
java.util.logging.FileHandler.formatter	Specifies the name of a Formatter class to use (defaults to java.util.logging.XMLFormatter)	Java.util.logging.SimpleFormatter for human readability. The java.util.loggin.XMLFormatter is commented out and available
java.util.logging.FileHandler.level	Specifies the default level for the Handler (defaults to Level. ALL).	CONFIG

TABLE 3-3 Logging File Contents (Continued)

Property	Description	StorageTek Tape Analytics Setting
java.util.logging.FileHandler.limit	Specifies an approximate maximum amount to write (in bytes) to any one file. If this is zero, then there is no limit. (Defaults to no limit).	1000000 (1MB)
java.util.logging.FileHandler.pattern	Specifies a pattern for generating the output file name. See below for details. (Defaults to "%h/ java%u.log").	/var/log/tbi/db/backups/ staservd.log.%g /var/log/tbi/db/backups/ staservadm.log.%g
STA Services daemon properties		
oracle.tbi.server.level oracle.tbi.serveradm.level oracle.tbi.resmonadm.level	Specifies the log level for the server, server admin functions, or the resource monitor admin functions.	CONFIG CONFIG

STA Database Restoration

The STA Restore procedure consists of loading the most recent full dump and then replaying all the binary logs immediately following that dump.

There are distinct sets of backup files on the backup server directory. Assuming the directory on your backup server is located at /data/stabackups, when listed they will look like something like this:

```
# cd /data/stabackups
# ls -1
2011221.conf.zip.gz
2011221.fmwconfig.zip.gz
2011221.stadb-bin.000024.gz
2011221.stafullbackup.sql.gz
2011222.conf.zip.gz
2011222.fmwconfig.zip.gz
2011222.stadb-bin.000024.gz
2011222.stafullbackup.sql.gz
2011223.conf.zip.gz
2011223.fmwconfig.zip.gz
2011223.stadb-bin.000021.gz
2011223.stadb-bin.000022.gz
2011223.stadb-bin.000023.gz
2011223.stadb-bin.000024.gz
2011223.stafullbackup.sql.gz
```

The first set of numbers is the year, and second is the day of the year that the files apply to. If you took the full backup on August 11, 2011, the 223rd day of the year, then the date tag for the entire set is "2011223". All the binary logs having the same date tag will be replayed into the database after the full dump is loaded.

The following administration tasks are discussed here:

- "Copy Backup Files to the Server" on page 58
- "Restore the Configuration Directory Files" on page 59
- "Restore the Database" on page 60
- "Point-in-Time Restorations" on page 62

▼ Copy Backup Files to the Server

1. **Copy the whole set of one day's files back to the server on which STA is installed.**

   Oracle recommends copying everything to the /tmp directory. For example, assuming that STA is installed on the server sta.server.com, and you are currently logged onto the backup server.

```
# scp 2011223.* sta.server.com:/tmp/.
Password:
```

2. **Log on as root to sta.server.com, and ungzip the *.gz files.**

```
# cd /tmp
# gunzip 2011223.*.gz
```

▼ Restore the Configuration Directory Files

1. **Stop all STA processes. Then, restart only the MySQL server.**

```
# STA stop
# service mysql start
```

2. **Unzip the STAServer and STA Services Daemon configuration directories.**

   The zip files have been created with the full directory paths to allow you to restore and/or overwrite existing files. The **zip** command allows you to re-crown the root of the restore path with the **-d** option. Additional options allow more control, such as selective replace.

   For the purposes of a clean restore you want to completely replace the existing configuration directory, however, you should backup the original first.

```
# cd $WLSHOME
# zip -vr fmwconfig.orig.zip fmwconfig
# rm -rf fmwconfig
# cd /tmp
# unzip -X -d/ 211223.fmwconf.zip

# cd $STAHOME/common
# zip -vr conf.orig.zip conf
# rm -rf conf
# cd /tmp
# unzip -X -d/ 211223.conf.zip
```

Where:

$WLSHOME = /Oracle/Middleware/user_projects/domains/TBI/config

$STAHOME = /Oracle/StorageTek_Tape_Analytics

▼ Restore the Database

Perform the following commands as the MySQL root user:

Reload the Database

1. **Clean out any residual stadb database if it exists.**

```
# mysql -uroot -p -e 'drop database stadb;'
Password:
```

2. **Load the latest full dump. This creates the schema and installs all the data.**

```
# mysql -uroot -p -e 'source 2011223.stafullbackup.sql;'
Password:
```

Replay the Binlogs

3. **Run each of the incremental dumps (binlogs) from youngest to oldest.**

   If you have more than one binary log to execute on the MySQL server, the safest method is to process them all using a single connection to the server and a single mysql process to execute the contents of all of the binary logs.

   For example:

```
#  mysqlbinlog 2011223.sta-binlog.000021 \
> 2011223.sta-binlog.000022 \
> 2011223.sta-binlog.000023 \
> 2011223.sta-binlog.000024 | mysql -u root -p
```

   Another approach is to concatenate all the logs to a single file and then process the file:

```
# mysqlbinlog 2011223.sta-binlog.000021 >  /tmp/recoversta.sql
# mysqlbinlog 2011223.sta-binlog.000022 >>  /tmp/recoversta.sql
# mysqlbinlog 2011223.sta-binlog.000023 >>  /tmp/recoversta.sql
# mysqlbinlog 2011223.sta-binlog.000024 >>  /tmp/recoversta.sql
# mysql -u root -p -e 'source /tmp/recoversta.sql'
```

Note – If you do not supply a password on the command line, MySQL prompts you for it before proceeding.

Avoid Multiple Connections to the Server

Processing binary logs as shown in the example below may create multiple connections to the server. Multiple connections cause problems if the first log file contains a CREATE TEMPORARY TABLE statement, and the second log contains

a statement that uses that temporary table. When the first mysql process terminates, the server drops the temporary table. When the second mysql process attempts to use that table, the server reports "unknown table."

```
# mysqlbinlog binlog.000001 | mysql -u root -p #<=== DANGER!!
# mysqlbinlog binlog.000002 | mysql -u root -p #<=== DANGER!!
```

Restart All Services

4. As the Linux system root user, enter the following command:

```
# STA start
```

Point-in-Time Restorations

Another restoration method is "point-in-time," where binary logs can be replayed from a specific start point to a specific end point in time.

For example, after examining the contents of a binary log, it was discovered that an erroneous operation that resulted in dropping several tables occurred immediately following log entry # 6817916.

Therefore, after restoring the database from the full dump occurring the day before, and before restarting all the STA services, you can replay the most recent binary log from its initial log entry number "176" through entry number "6817916" with the commands shown in this procedure.

▼ Restore from a Range of Log Numbers

1. **Make sure all the STA processes are shut down and only the MySQL server is running:**

```
# STA stop
# service mysql start
```

2. **As the MySQL root user, extract the valid operations:**

```
# mysqlbinlog --start-position=176 --stop-position=6817916
/var/log/tbi/db/stadb-bin.000007 > ./recover.sql
```

3. **Apply them to the database:**

```
# mysql -uroot -p -e 'source ./recover.sql'
Password:
```

4. **As the Linux system root user, restart the STA application and STA Services Daemon:**

```
# STA start
```

For more information on point-in-time or incremental recovery operations refer to the MySQL Manual:

http://dev.mysql.com/doc/refman/5.5/en/point-in-time-recovery.html

4

Password Administration

This chapter describes administration tasks for resetting various STA account and service passwords.

This chapter includes the following topics:

Reset the STA GUI Login Password

The STA GUI Login password must be changed through the WebLogic configuration console by the WebLogic Administration user.

> **Note –** The STA GUI Login password is NOT changed in the MySQL database; GUI usernames are defined and managed only at the WebLogic/server level.

> **Note –** In the following procedure, the example STA GUI Login username is "sta_user".

1. **Point your browser to the WebLogic console login screen.**

   http://*yourHostName*:7001/console/

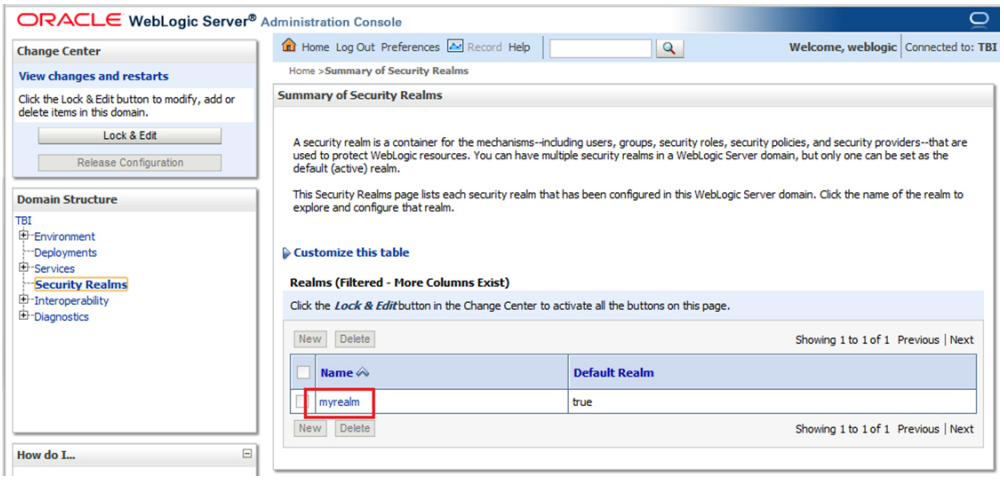
   or

   https://*yourHostName*:7002/console/

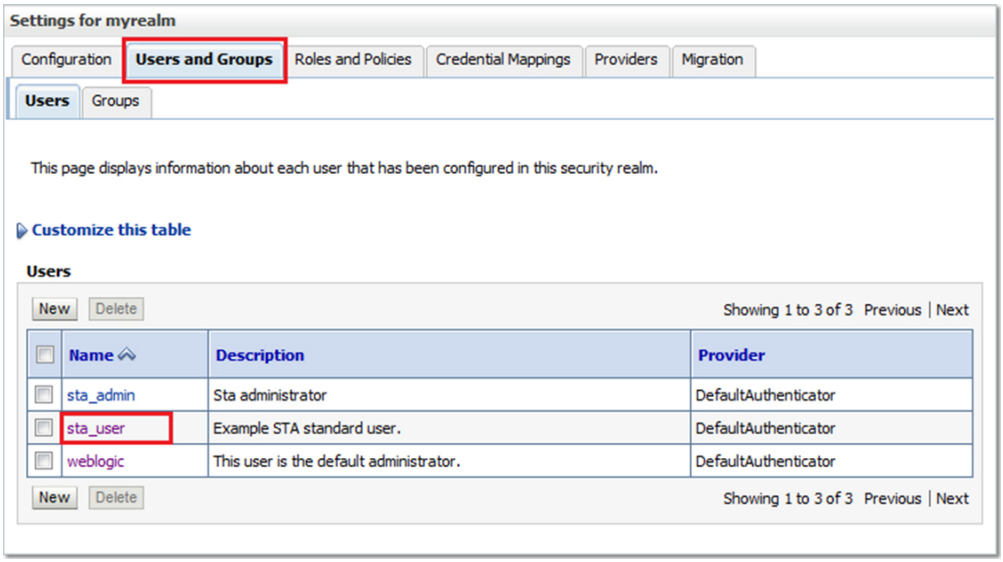
   > **Note –** Use the HTTP or HTTPS port number you selected during STA installation.

2. **Log in using the WebLogic Admin Console username and password you defined during STA installation.**

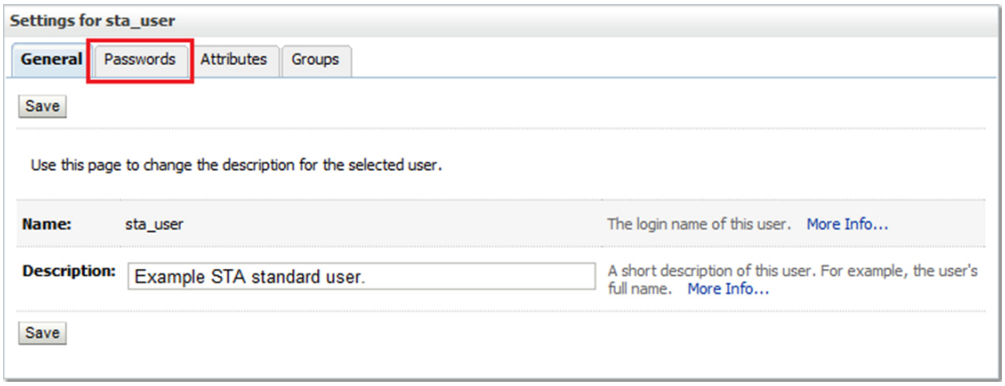
3. **Navigate to the Security Realms work area, then click the myrealm link in the Realms table.**



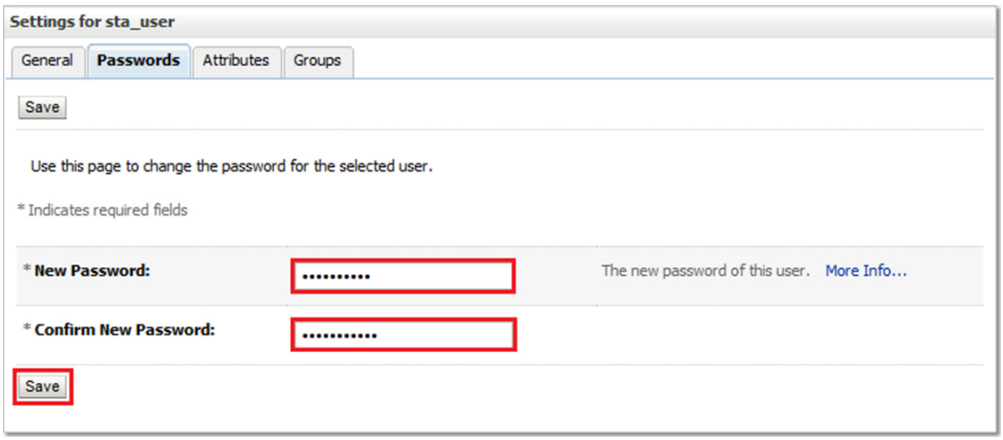
4. **Click on the Users and Groups tab, and then click the STA GUI Login username (in this example, sta_user).**



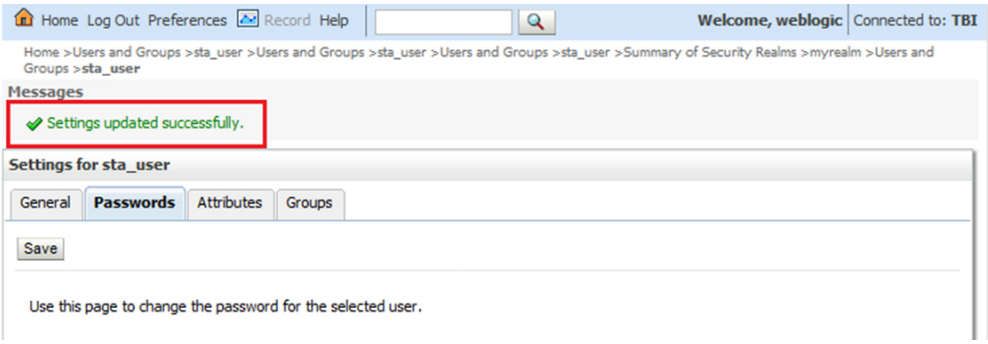
5. **Click the Passwords tab.**



6. **Enter a new password, confirm it, and then click the Save button at the bottom of the panel.**



7. **Check if the Messages window displays "Settings updated successfully."**



8. **Log out of the WebLogic Administration Console.**
9. **Verify that the new password is operational by logging into the STA application GUI.**

Reset the STA Database Root, Reports, or DBA Account Password

Follow this procedure to reset any of the following STA database accounts:

- STA Database Root Account
- STA Database Reports Account
- STA Database DBA Account

Caution – Do NOT use this procedure to reset the STA Database Application Account password. See the separate procedure, "Reset the STA Database Application Account Password" on page 69.

Note – The STA Database Root Account password should be changed by the MySQL database administrator.

1. **Log in to the MySQL client as root user.**

```
# mysql -uroot  -p
Password: root-password
```

2. **Enter the `use mysql` command.**

```
mysql> use mysql;
```

3. **Retrieve the list of STA database usernames.**

```
mysql> select distinct(user) from user order by user;
+---------+
| user    |
+---------+
|         |
| root    |
| staapp  |
| stadba  |
| starpts |
+---------+
5 rows in set (0.00 sec)
```

4. **Take note of the STA database root, reports, or DBA account username for which you want to change the password.**

5. **Issue the following commands to change the password of the chosen username.**

Note – Replace *new-password* with the actual new password. Replace *user-ID* with the actual STA database root, reports, or DBA account username. Use single quotes around these variables.

```
mysql> update user set password=PASSWORD('new-password') where
user='user-ID';
mysql> commit;
mysql> flush privileges;
```

Caution – Be sure to make a note of the password you just entered.

6. **Exit out of the MySQL client.**

```
mysql> quit;
```

7. **If you changed the password of the STA database DBA account, see** **"Reset the STA Backup Service Password" on page 76** **and** **"Reset the STA Resource Monitor Password" on page 77****.**

Reset the STA Database Application Account Password

Follow these procedures to reset the STA Database Application Account password.

> **Caution –** The STA Database Application Account username and password MUST be synchronized on both STAServer/WebLogic and the MySQL database.
>
> **Note –** In the following procedures, the example STA Database Application Account username is "staapp".

1. "Change the WebLogic Data Source Connection Password" on page 69
2. "Click the Connection Pool tab." on page 70
3. "Stop and Restart all STA Processes" on page 73
4. "Verify STA Session Connectivity" on page 74

▼ Change the WebLogic Data Source Connection Password

1. **Point your browser to the WebLogic console login screen.**

   http://*yourHostName*:7001/console/

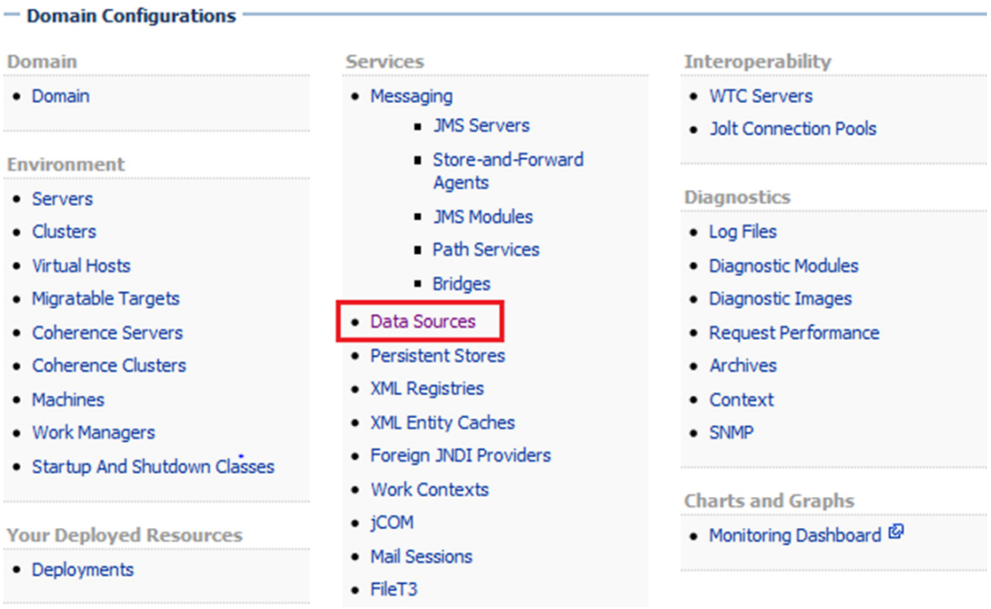
   or

   https://*yourHostName*:7002/console/

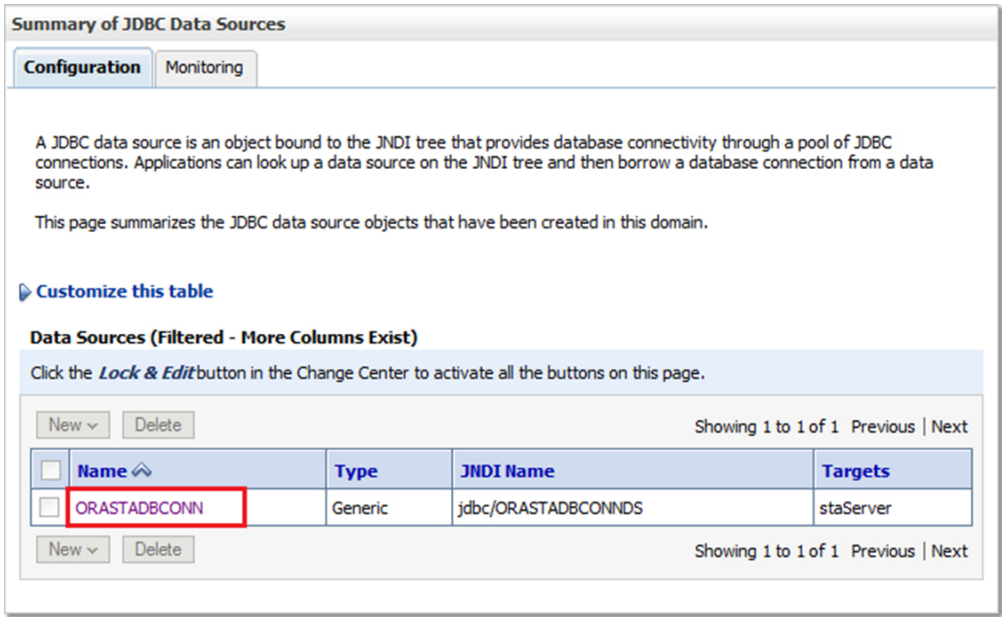
   > **Note –** Use the HTTP or HTTPS port number you selected during STA installation.

2. **Log in using the WebLogic Admin Console username and password you defined during STA installation.**

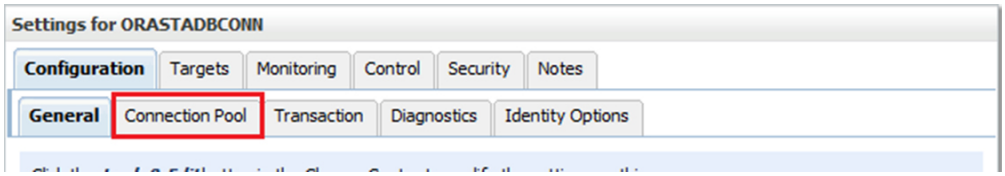
3. **Select Data Sources in the center of the page.**



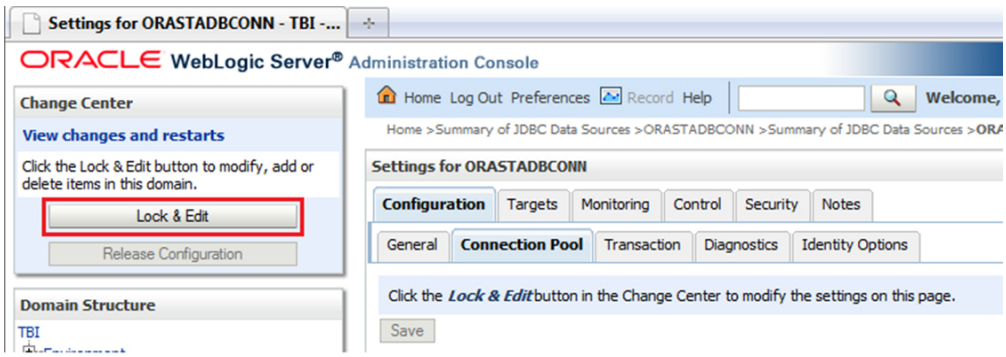
4. **Click on the ORASTADBCONN data source name.**



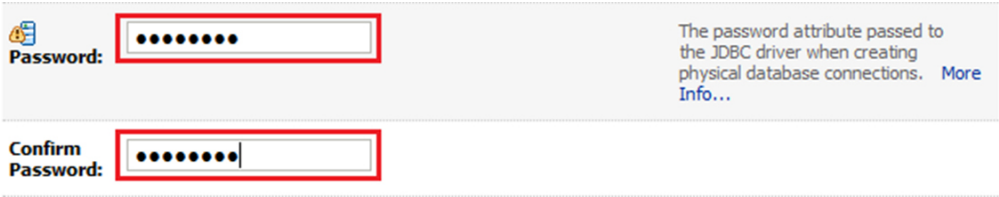
5. **Click the Connection Pool tab.**



6. **In the upper left-hand corner, click the Lock & Edit button.**

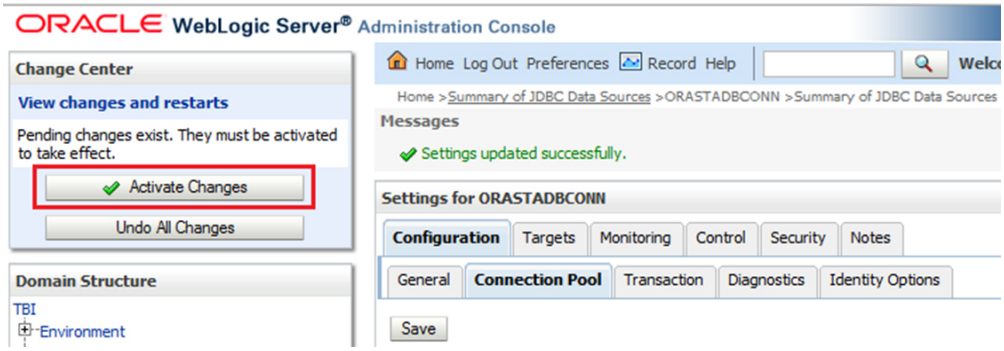


7. **Scroll down, and then enter and confirm the new password.**

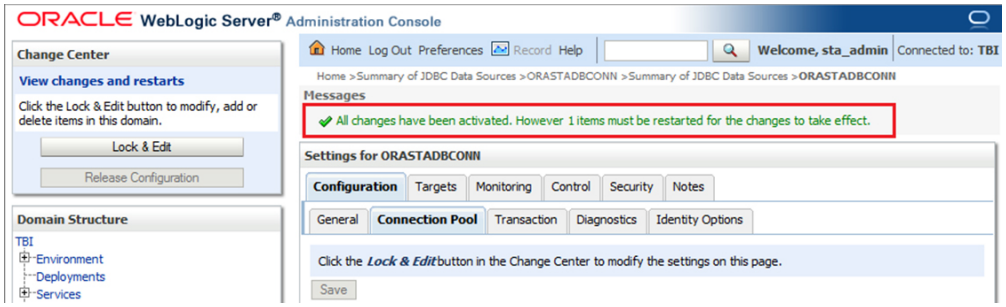


8. **Click Save at the TOP of the page.**

9. **Click the Activate Changes button in the upper left-hand corner of the screen.**



10. **Wait until the changes are activated, as indicated by the "All changes have been activated..." message.**



11. Log out of the WebLogic Administration Console.

▼ Change the MySQL STA Database Application Account Password

1. Log in to the MySQL client as root user.

```
# mysql -uroot  -p
Password: root-password
```

2. Enter the `use mysql` command.

```
mysql> use mysql;
```

3. Retrieve the list of STA database usernames.

```
mysql> select distinct(user) from user order by user;
+---------+
| user    |
+---------+
|         |
| root    |
| staapp  |
| stadba  |
| starpts |
+---------+
5 rows in set (0.00 sec)
```

4. Take note of the STA Database Application Account username (for example, staapp).
5. Issue the following commands to change the password of the Database Application Account username.

Note – Replace *new-password* with the actual new password. Replace *user-ID* with the actual STA Database Application Account username. Use single quotes around these variables.

```
mysql> update user set password=PASSWORD('new-password') where
user='user-ID';
mysql> commit;
mysql> flush privileges;
```

Caution – Be sure to make a note of the password you just entered.

6. **Exit out of the MySQL client.**

```
mysql> quit;
```

▼ Stop and Restart all STA Processes

1. **As `root` on the server on which STA is installed, stop STA processes.**

```
# STA stop
Stopping the WebLogic staServer....
Successfully stopped the WebLogic staServer
Stopping the WebLogic Administration Server....
Successfully stopped the WebLogic Administration Server
Stopping the STA Services Daemon (staservd)....
Successfully stopped the STA Services Daemon (staservd)
Stopping the STA database Server....
Successfully stopped the STA Database Server
```

2. **Start STA processes.**

```
# STA start
Starting STA Database....
Successfully started the STA Database
Starting STA Services Daemon (staservd)....
Successfully started the STA Services Daemon (staservd)
Starting WebLogic Administration Server....
Successfully started the WebLogic Administration Server
Starting WebLogic staServer....
Successfully started the WebLogic staServer
```

Note – It may take 5-7 minutes for the WebLogic staServer to start up.

▼ Verify STA Session Connectivity

1. **Point your browser to the STA GUI login screen.**

   http://*yourHostName*:7021/STA/

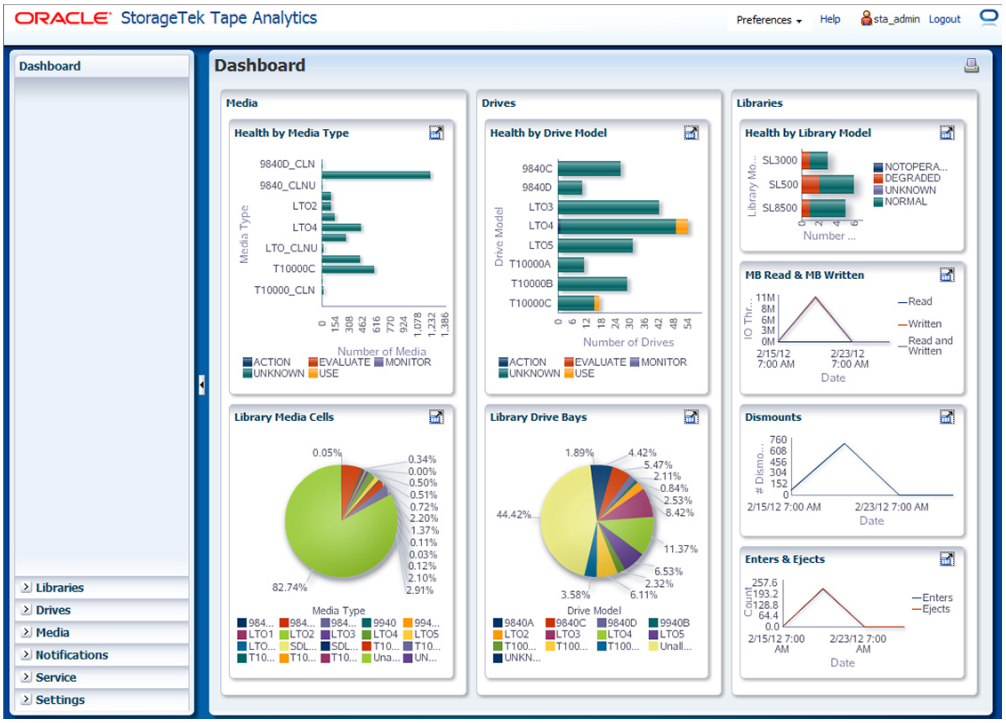
   or

   https://*yourHostName*:7022/STA/

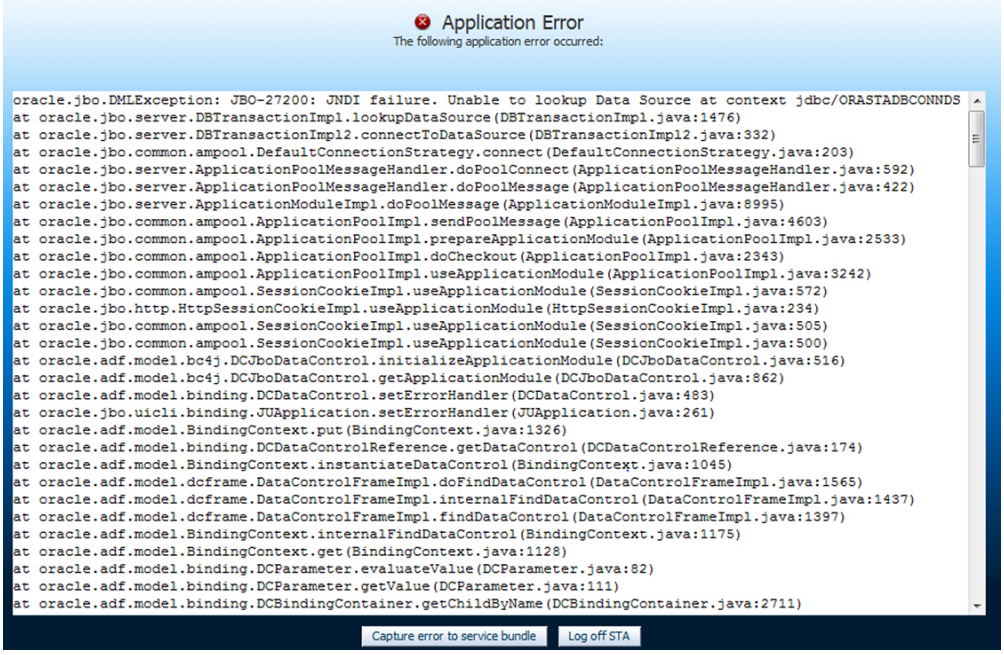
   Note – Use the HTTP or HTTPS port number you selected during STA installation.

2. **Log in using the STA GUI Login username and password you defined during STA installation.**

3. **If you see a fully-populated Dashboard screen (example below), you have successfully reset the STA Database Application Account password on both the WebLogic server and the MySQL database. If you see an error screen, go to Step 4.**



4. **If you see an error screen (example below), then the password you defined for the WebLogic database connector does not match that of the STA database application account in the MySQL database. In such case, repeat the preceding procedures paying close attention to typing the passwords EXACTLY the same in the WebLogic Administration Console and MySQL client.**


Application Error
The following application error occurred:
oracle.jbo.DMLException: JBO-27200: JNDI failure. Unable to lookup Data Source at context jdbc/ORASTADBCONNDS
at oracle.jbo.server.DBTransactionImpl.lookupDataSource(DBTransactionImpl.java:1476)
at oracle.jbo.server.DBTransactionImpl2.connectToDataSource(DBTransactionImpl2.java:332)
at oracle.jbo.common.ampool.DefaultConnectionStrategy.connect(DefaultConnectionStrategy.java:203)
at oracle.jbo.server.ApplicationPoolMessageHandler.doPoolConnect(ApplicationPoolMessageHandler.java:592)
at oracle.jbo.server.ApplicationPoolMessageHandler.doPoolMessage(ApplicationPoolMessageHandler.java:422)
at oracle.jbo.server.ApplicationModuleImpl.doPoolMessage(ApplicationModuleImpl.java:8995)
at oracle.jbo.common.ampool.ApplicationPoolImpl.sendPoolMessage(ApplicationPoolImpl.java:4603)
at oracle.jbo.common.ampool.ApplicationPoolImpl.prepareApplicationModule(ApplicationPoolImpl.java:2533)
at oracle.jbo.common.ampool.ApplicationPoolImpl.doCheckout(ApplicationPoolImpl.java:2343)
at oracle.jbo.common.ampool.ApplicationPoolImpl.useApplicationModule(ApplicationPoolImpl.java:3242)
at oracle.jbo.common.ampool.SessionCookieImpl.useApplicationModule(SessionCookieImpl.java:572)
at oracle.jbo.http.HttpSessionCookieImpl.useApplicationModule(HttpSessionCookieImpl.java:234)
at oracle.jbo.common.ampool.SessionCookieImpl.useApplicationModule(SessionCookieImpl.java:505)
at oracle.jbo.common.ampool.SessionCookieImpl.useApplicationModule(SessionCookieImpl.java:500)
at oracle.adf.model.bc4j.DCJboDataControl.initializeApplicationModule(DCJboDataControl.java:516)
at oracle.adf.model.bc4j.DCJboDataControl.getApplicationModule(DCJboDataControl.java:862)
at oracle.adf.model.binding.DCDataControl.setErrorHandler(DCDataControl.java:483)
at oracle.jbo.uicli.binding.JUApplication.setErrorHandler(JUApplication.java:261)
at oracle.adf.model.BindingContext.put(BindingContext.java:1326)
at oracle.adf.model.binding.DCDataControlReference.getDataControl(DCDataControlReference.java:174)
at oracle.adf.model.BindingContext.instantiateDataControl(BindingContext.java:1045)
at oracle.adf.model.dcframe.DataControlFrameImpl.doFindDataControl(DataControlFrameImpl.java:1565)
at oracle.adf.model.dcframe.DataControlFrameImpl.internalFindDataControl(DataControlFrameImpl.java:1437)
at oracle.adf.model.dcframe.DataControlFrameImpl.findDataControl(DataControlFrameImpl.java:1397)
at oracle.adf.model.BindingContext.internalFindDataControl(BindingContext.java:1175)
at oracle.adf.model.BindingContext.get(BindingContext.java:1128)
at oracle.adf.model.binding.DCParameter.evaluateValue(DCParameter.java:82)
at oracle.adf.model.binding.DCParameter.getValue(DCParameter.java:111)
at oracle.adf.model.binding.DCBindingContainer.getChildByName(DCBindingContainer.java:2711)
Capture error to service bundle
Log off STA

Reset the STA Backup Service Password

Note – For additional Backup Service administration information, see "STA Backup Service" on page 37.

1. **Change directories.**

```
# cd /Oracle/StorageTek_Tape_Analytics/common/bin
```

2. **Ensure the server is online.**

```
# ./staservadm -Q
Contacting daemon...connected.
Querying Preferences.
 Current STA Backup Service Preferences:
   Configured            [yes]
.
.
.
   Database Username  -U [stadba]
   Database Password  -P [*****]
 ========================================
```

3. **Reset the STA Backup service password.**

   For example, assume the STA database administrator username you entered during installation was "**stadba**" and your new password is "**new-password**."

   As the system **root** user, enter the following commands from the Linux command line.

```
# ./staservadm -U stadba -P new-password
```

   Optionally, if you don't want to enter the password on the command line, leave the value of the **-P** option blank and the system will prompt you to enter the new password without echoing.

```
# ./staservadm -U stadba -P
Enter database password:
```

Reset the STA Resource Monitor Password

Note – For additional Resource Monitor administration information, see "Reset the STA Backup Service Password" on page 41.

1. **Change directories.**

```
# cd /Oracle/StorageTek_Tape_Analytics/common/bin
```

2. **Ensure the STA Resource Monitor service is online.**

```
# ./staresmonadm -Q
Contacting daemon...connected.
Querying Preferences.
 Current STA Resource Monitor Service Settings:
   Configured              [yes]
.
.
.
   DB Username          -U [stadba]
   DB Password          -P [******]
   .
   .
   .
 ====================================================
```

3. **Reset the STA Resource Monitor service password.**

   For example, assume the STA database administrator username you entered during installation was "**stadba**" and your new password is "**new-password**."

   As the system **root** user, enter the following commands from the Linux command line.

```
# ./staresmonadm -U stadba -P new-password
```

   Optionally, if you don't want to enter the password on the command line, leave the value of the **-P** option blank and the system will prompt you to enter the new password without echoing.

```
# ./staresmonadm -U stadba -P
Enter database password:
```

5

Prevent Denial of Service Attacks

This chapter describes a method to prevent Denial of Service (DoS) attacks on the server on which STA is installed.

> **Note –** The following procedure is optional, and is provided for informational purposes only. Site security remains the responsibility of the customer.
>
> **Note –** Follow this procedure only after the initial library configuration is successful. After configuring IPTables, you should ensure that STA is still successfully monitoring your libraries.

The following topics are discussed:

Overview

To protect the server from DoS attacks, configure the Linux **`iptables`** software to establish rules that filter ports and/or IP addresses. Based on the configuration of STA, Oracle recommends you attach rules to UDP 162 and the port values the STA web servers are running on.

> **Note –** The STA web server default port values are 7001, 7002, 7021, and 7022, but different values may have been selected during STA installation.

The iptables Sample Script can be used to define an input rule on the server to block hosts that attempt to connect, based on these criteria:

- A specific Ethernet interface
- A specific port
- A specific protocol
- The number of requests within a specified time period.

If the host connection count is exceeded within that time period, that host is blocked from further connections for the remainder of the time period.

▼ Configure iptables Rules

1. **Copy the source of the iptables Sample Script into a text editor.**
2. **Modify the following variables to suit your environment:**
   - **`INTERFACE`**

     Defines the ethernet interface to watch for attacks
   - **`PORT`**

     Defines the port number to watch for attacks
   - **`PROTO`**

     Defines the protocol (tcp or udp)
   - **`HITS`** and **`TIME`**

     Decide what are reasonable values for the number of requests (HITS) within a given time period in seconds (TIME) to block a server.
3. **Save the script to your system and execute it.**

   The new rules are added to iptables and take effect immediately.

iptables Sample Script

```
# The name of the iptable chain
CHAIN=INPUT

# The ethernet interface to watch for attacks
INTERFACE=eth0

# The port number to watch for attacks
PORT=80

# The protocol (tcp or udp)
PROTO=tcp

# A server that sends HITS number of requests within TIME seconds will be
blocked
HITS=8
TIME=60

# Log filtered IPs to file
touch /var/log/iptables.log
grep iptables /etc/syslog.conf  1>/dev/null 2>&1
if [ $? -ne 0 ] ; then
        echo kern.warning /var/log/iptables.log >>
        /etc/syslog.conf
        echo touch /var/log/iptables.log >> /etc/syslog.conf
        /etc/init.d/syslog restart
fi

# Undo any previous chaining for this combination of chain, proto, hits, and
time
/sbin/iptables -L $CHAIN | grep $PROTO | grep $HITS | grep $TIME  1>/dev/null
2>&1
if [ $? -eq 0 ] ; then
        R=0
        while [ $R -eq 0 ]; do
                /sbin/iptables -D $CHAIN 1 1>/dev/null 2>&1
                R=$?
        done
fi

# Logging rule
/sbin/iptables --append $CHAIN --jump LOG --log-level 4

# Interface rule
/sbin/iptables --insert $CHAIN --proto $PROTO --dport $PORT --in-interface
$INTERFACE --match state --state NEW --match recent --set

# Blocking rule
/sbin/iptables --insert $CHAIN --proto $PROTO --dport $PORT --in-interface
$INTERFACE --match state --state NEW --match recent --update --seconds $TIME
--hitcount $HITS --jump DROP
```

6

Upgrading, Reinstalling, and Downgrading STA

This chapter details upgrading, reinstalling, and downgrading STA. The following topics are discussed:

> **Caution –** Before performing the following operations, Oracle highly recommends you back up STA database data. To configure the STA Backup Service, see the "Configuring STA Services" chapter of the *StorageTek Tape Analytics Configuration Guide*. To administer the STA Backup Service, see Chapter 3, "Database Services Administration".

> **Caution –** If you have upgraded the library firmware, you may need to update the library engine ID in STA, and also in the library SNMP configuration (if necessary). For details and instructions, see the "Managing Library SNMP Connections" chapter within the *STA Data Reference Guide*.

Upgrading STA

Upgrade Paths

You may upgrade STA only from the previous two released versions of STA. Any other version is not upgradable. The following upgrade paths are supported:

- STA 1.0.0.99 to 1.0.2.x
- STA 1.0.1.133 to 1.0.2.x
- STA 1.0.0.99 to 1.0.1.133 to 1.0.2.x

Before Upgrading STA

Before upgrading STA, take note of the following:

- It is not necessary to uninstall the current version of STA before upgrading to a new version. The installer package for the new version will update the appropriate files automatically.
- After the upgrade, STA will process new data according to the upgraded version's schema. Historical data is not impacted by the upgrade.
- Oracle highly recommends you back up the STA database before and after performing the upgrade. To configure the STA Backup Service, see the "Configuring STA Services" chapter of the *StorageTek Tape Analytics Configuration Guide*. To administer the STA Backup Service, see Chapter 3, "Database Services Administration".

  Caution – Database backups created with the STA Backup Service will no longer be valid after upgrading to a new STA version. If you desire to keep existing backups, you should move them to another location before upgrading.

- During the upgrade process, the installer creates a .tar file that contains backup copies of the following directories:

  /Oracle/StorageTek_Tape_Analytics
  /Oracle/StorageTek_Tape_Analytics/install

  After the upgrade is complete and you are certain the upgrade was a success, you may delete this file. The file is located in:

  /Oracle/StorageTek_Tape_Analytics/backup_*x.x.x.xx*

where *x.x.x.xx* is the previous STA version number.

Upgrade Worksheet

The STA installer will prompt you for the following information during the upgrade process. Gather this information and fill in TABLE 6-1.

> **Note –** Username and password information should already be recorded in the "Username and Password Worksheet" section of the *StorageTek Tape Analytics Planning and Installation Guide*.

TABLE 6-1 Required Information for STA Upgrade

Required Information	Value
WebLogic Admin Console login username	
WebLogic Admin Console login password	
WebLogic Admin Console port number (HTTP or HTTPS)	
STA Database (MySQL) Root Account password	

▼ Prepare for STA Upgrade

1. **Download the latest version of STA, as described in the "Download STA" section of the** *StorageTek Tape Analytics Planning and Installation Guide***.**
2. **Use an unzip tool to extract the STA files from the .zip file:**
   - Release notes .pdf — Read this document before installing and using STA.
   - STA application .tar file
3. **Copy or move the STA .tar file to any location on the target system (for example, root).**
4. **Remove the existing Disk1 folder from the target system.**

   ```
   # rm -rf Disk1
   ```

   The Disk1 folder was created when STA was originally installed, and should be removed before performing the next step.
5. **Untar the .tar archive using the following command:**

   # tar xvf *STA_filename***.tar**
6. **Proceed to one of the following sections:**
   - "Upgrade STA Using the Graphical Installer (Recommended)" on page 87
   - "Upgrade STA Using the Console Installer" on page 93.

▼ Upgrade STA Using the Graphical Installer (Recommended)

1. **Set your DISPLAY environment variable (if currently not set).**

   # export DISPLAY=*hostname***:0.0**

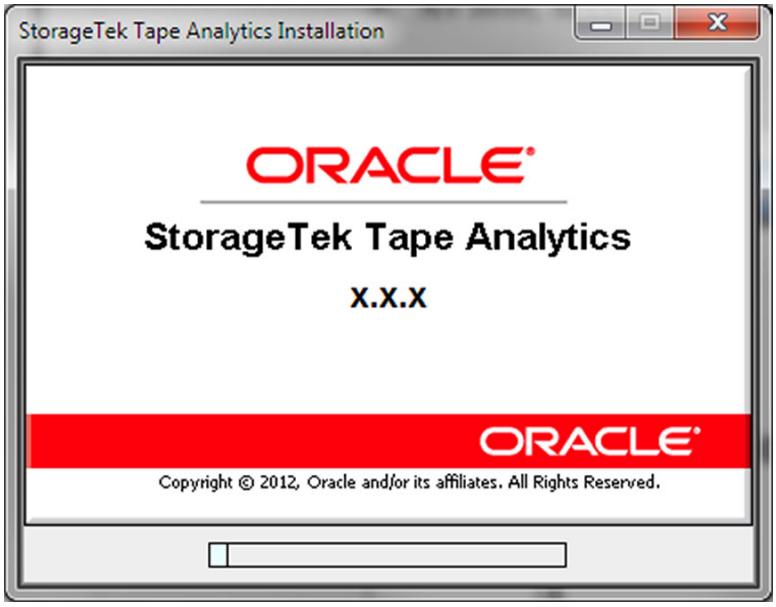
   Note – If you used `ssh -X` or `ssh -Y` to connect to the server, your DISPLAY variable should already be set.

2. **Change the directory to Disk1:**

   ```
   # cd Disk1
   ```

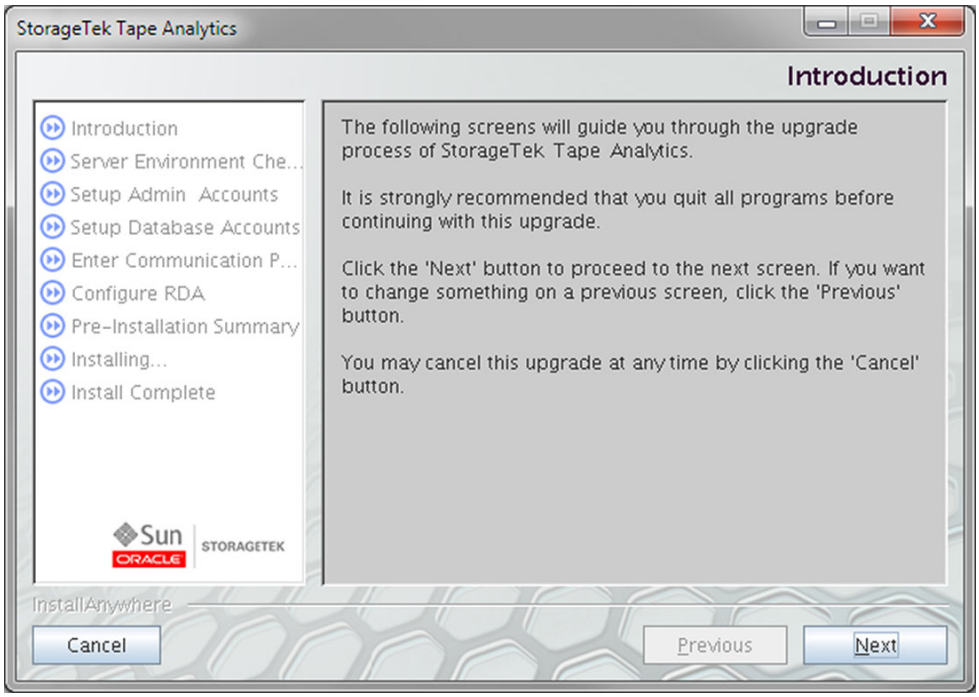
3. **As root, launch the installer:**

   ```
   # ./install
   ```



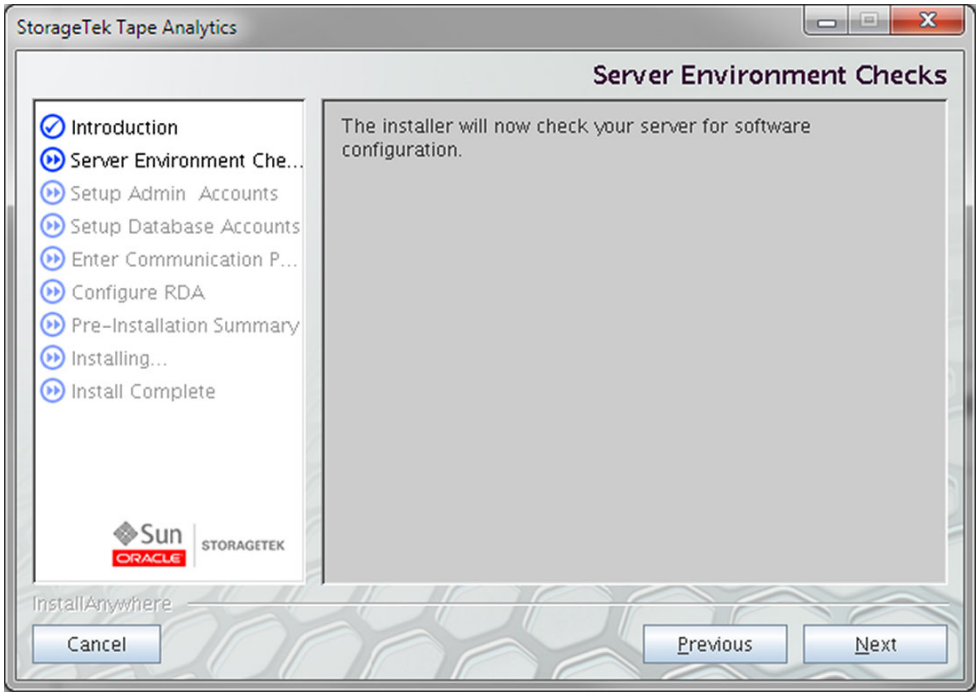
4. **Read the text in the Upgrade Path window, then click OK.**

5. **Read the text on the Introduction screen, then click Next.**

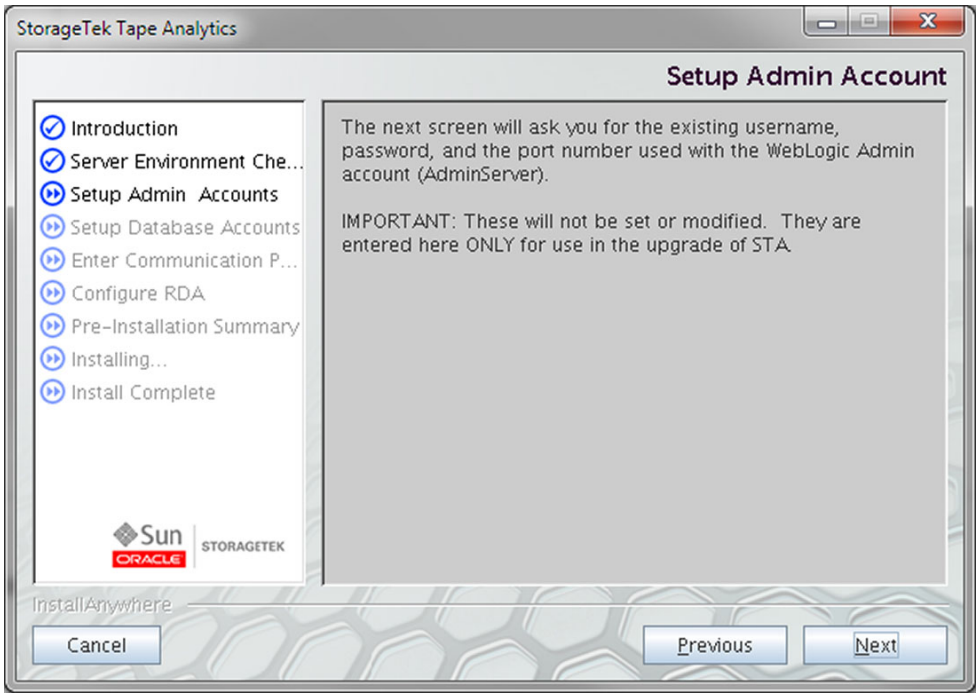


6. **Click Next on the Environment Checks screen. The STA installer will check your environment for existing software and settings.**

   Note – If you receive any messages relating to your environment, see the "STA Pre-Installation Checks" section of the *StorageTek Tape Analytics Planning and Installation Guide* before proceeding.

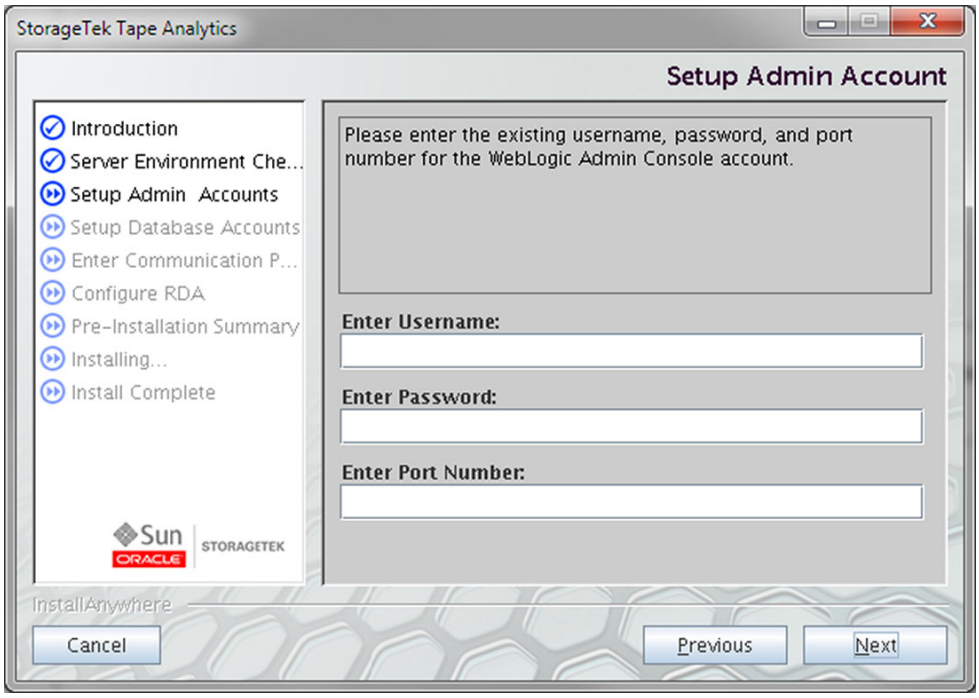


7. **Read the text on the Enter Username and Password for WebLogic screen, then click Next.**

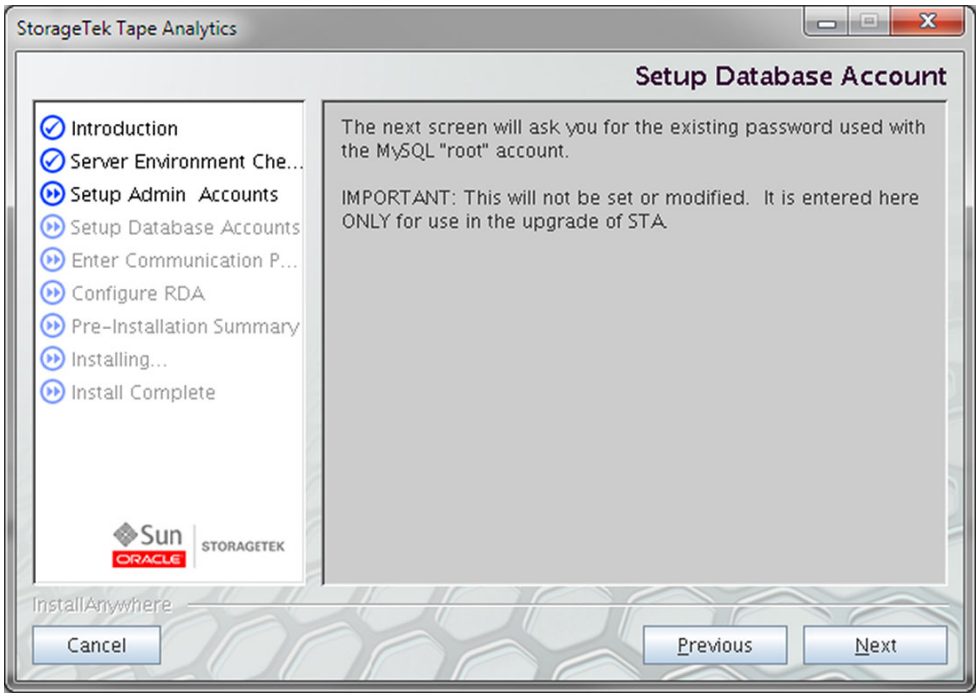


8. **Enter the username, password, and port number for the WebLogic Admin Console login. Then, click Next.**

   The installer will test the supplied information.

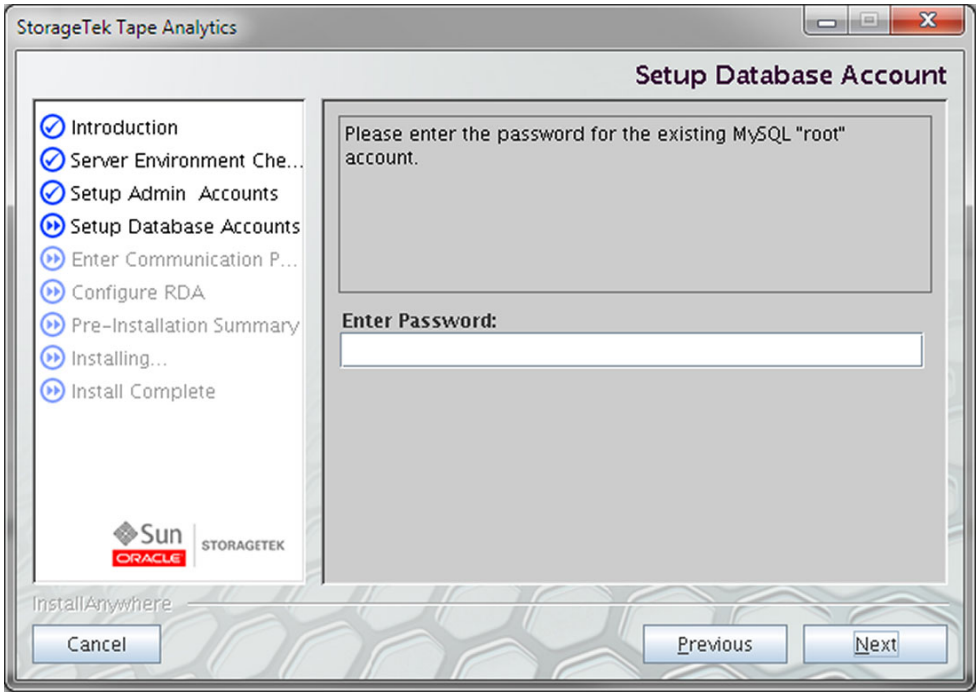


9. **Read the text on the Enter Password for MySQL root screen, then click Next.**



10. **Enter the password for the STA Database (MySQL) Root Account, then click Next.**

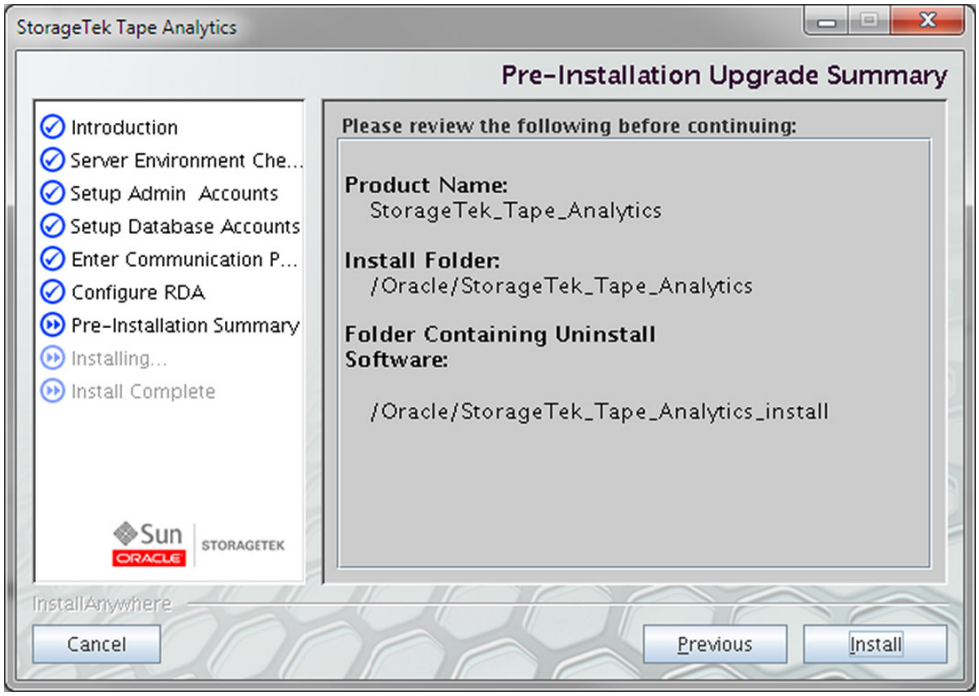
    The installer will test the supplied information.



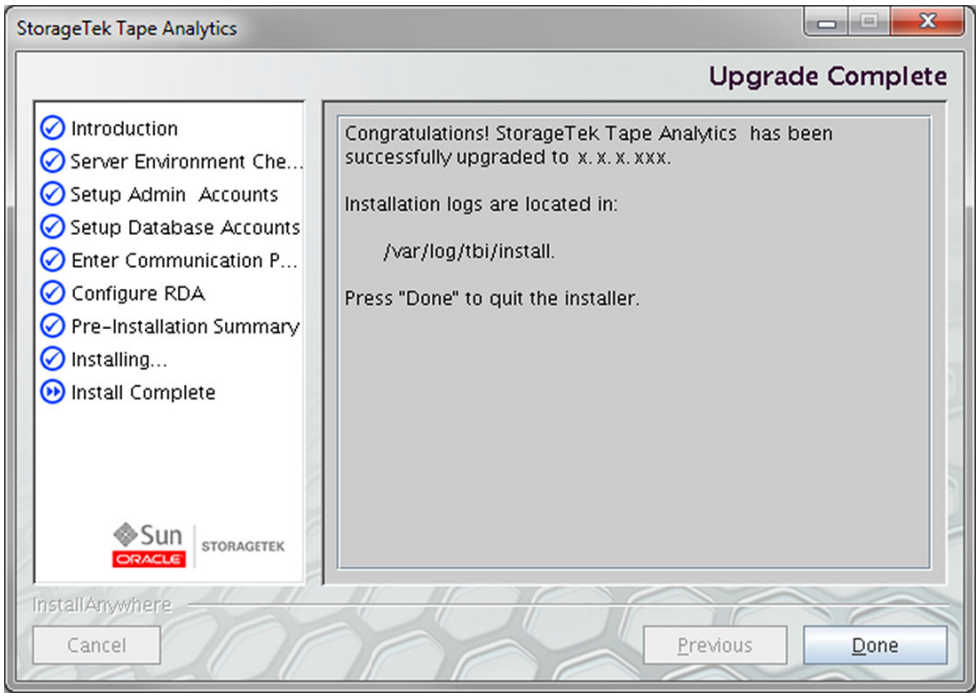
11. **Review the Pre-Installation Summary screen. When ready, click Install.**

    You'll see notices indicating the progress of the STA upgrade.

Note – Depending on the size and type of data in the STA database, the upgrade process can take as long as 30-60 minutes.



12. **Click Done on the Install Complete screen.**



13. **Ensure all services are running using the STA status command.**

Note – For more information about the **`STA`** command, see "Server Administration" on page 27.

```
# STA status
STA Database server is running
STA Database Services Daemon (staservd) is running
Weblogic Domain Administration Server is running
WebLogic staServer is running
```

14. **Proceed to** **"Verify the STA Version" on page 99****.**

▼ Upgrade STA Using the Console Installer

1. **Change the directory to Disk1:**

```
# cd Disk1
```

2. **As root, launch the installer in console mode:**

```
# ./install -i console
```

```
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer
archive...
Configuring the installer for this system's environment...
Launching installer...
Preparing CONSOLE Mode Installation...
===============================================================
StorageTek_Tape_Analytics (created with InstallAnywhere)
---------------------------------------------------------------
```

3. **Read the Upgrade Path information. Enter 1 to continue.**

```
===============================================================
Upgrade Path
------------

The STA installer has determined that this is an upgrade.

If this is correct, select the "Continue" option.  If this is
not correct, select the "Exit" option to quit.  Then either
uninstall the previous version of STA and try again, or contact
Oracle Support.

  ->1- Continue
    2- Exit

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO
ACCEPT THE
   DEFAULT: 1
```

4. **Read the Introduction information, then press Enter.**

```
================================================================
Introduction
------------

This installation program will guide you through the upgrade of
StorageTek Tape Analytics.

It is strongly recommended that you quit all programs before
continuing with this upgrade.

Respond to each prompt to proceed to the next step in the
upgrade.

Type 'back' at any prompt to return to the previous step.
Type 'quit' at any prompt to cancel this upgrade.

NOTE:  For security, password input will never appear on the
screen.


PRESS <ENTER> TO CONTINUE:
```

5. **Press Enter to start the server environment check.**

   Note – If you receive any messages relating to your environment, see the "STA Pre-Installation Checks" section of the *StorageTek Tape Analytics Planning and Installation Guide* before proceeding.

```
================================================================
Server Environment Checks
-------------------------

The installer will now check your server for software
configuration.

This check will take several minutes.

PRESS <ENTER> TO CONTINUE:
```

6. **Read the Setup Admin Account information, then press Enter.**

```
==============================================================
Setup Admin Account
-------------------

The next screen will ask you for the existing username,
password, and the port number used with the WebLogic Admin
account (AdminServer).

IMPORTANT: These will not be set or modified.  They are entered
here ONLY for use in the upgrade of STA.

PRESS <ENTER> TO CONTINUE:
```

7. **Enter the existing WebLogic Administration Console account username, then press Enter.**

   Note – In this and the following steps, if the supplied Admin Console username, password, and port information is incorrect, the installer will exit. Ensure the information is accurate before pressing Enter.

```
==============================================================
Enter Username
--------------

Please enter the username for the existing WebLogic Admin
Console account.

Enter Username (DEFAULT: <User Input Required>): <username>
```

8. **Enter the password for the WebLogic Administration Console account, then press Enter.**

```
==============================================================
Enter Password
--------------

Please enter the password for the existing WebLogic Admin
Console account.

Please Enter the Password:
```

9. **Enter either the HTTP or HTTPS port number for the WebLogic Administration Console account, then press Enter.**

The Admin Console username, password, and port number information will be tested.

```
=================================================================
Enter Port Number
-----------------

Please enter the port number for the existing WebLogic Admin
Console account.

Enter Port Number (DEFAULT: <User Input Required>): <port_number>
```

10. **Read the Setup Database Account information, then press Enter.**

```
=================================================================
Setup Database Account
----------------------

The next screen will ask you for the existing password used with
the MySQL "root" account.

IMPORTANT: This will not be set or modified.  It is entered here
ONLY for use in the upgrade of STA.

PRESS <ENTER> TO CONTINUE:
```

11. **Enter the password for the MySQL root user account, then press Enter.**

    The supplied information will be tested.

```
=================================================================
Enter Password
--------------

Please enter the password for the existing MySQL "root" user
account.

Please Enter the Password:
```

12. **Read the Pre-Installation Upgrade Summary, then press Enter to begin the upgrade process.**

    Note – Depending on the size and type of data in the STA database, the upgrade process can take as long as 30-60 minutes.

```
================================================================
Pre-Installation Upgrade Summary
--------------------------------

Please review the following before continuing:

Product Name:
    StorageTek_Tape_Analytics

Install Folder:
    /Oracle/StorageTek_Tape_Analytics

Folder Containing Uninstall Software:
    /Oracle/StorageTek_Tape_Analytics_install

NOTE:
    The installation process can take as long as 30 minutes

Disk Space Information (for Installation Target):
    Required:  x,xxx,xxx,xxx bytes
    Available: xx,xxx,xxx,xxx bytes

PRESS <ENTER> TO CONTINUE:

================================================================
Installing...
-------------

 [==================|==================|==================|
 [------------------|------------------|------------------|
```

13. **Press Enter following the Upgrade Complete information..**

```
================================================================
Upgrade Complete
----------------

Congratulations! StorageTek Tape Analytics has been
successfully upgraded.

Installation logs are located in:

/var/log/tbi/install

PRESS <ENTER> TO EXIT THE INSTALLER:
```

14. Ensure all services are running using the STA status command.

> **Note –** For more information about the **STA** command, see "Server Administration" on page 27.

```
# STA status
STA Database server is running
STA Database Services Daemon (staservd) is running
Weblogic Domain Administration Server is running
WebLogic staServer is running
```

15. Proceed to "Verify the STA Version" on page 99.

Verify the STA Version

After upgrading, you can verify the STA version by performing the following steps.

1. **Point your browser to the STA GUI login screen.**

   http://*yourHostName*:7021/STA/

   or

   https://*yourHostName*:7022/STA/

   Note – Use the HTTP or HTTPS port number you selected during STA installation.

2. **Log in using the STA GUI Login username and password you defined during STA installation.**

3. **In the lower-right corner of the STA Dashboard screen, click the About link.**

   The STA software version will be shown.

Reinstalling STA

If you wish to reinstall STA (for example, to repair a current installation), you must first uninstall STA.

> **Note –** The STA installer package cannot be used to reinstall/ overwrite a current installation.

To uninstall STA, see "Uninstalling STA" on page 101.

Downgrading STA

Downgrading of STA is not supported. However, if you choose to downgrade to a previous version, you must first uninstall STA, then install the older version.

> **Note –** The STA installer package cannot be used to automatically downgrade a current installation.

> **Caution –** Database data created with a newer version of STA will be lost when installing an older version of STA. Do not downgrade if you do not intend to start with a fresh STA database.

To uninstall STA, see "Uninstalling STA" on page 101.

7

Uninstalling STA

This chapter details the STA uninstallation process.

You can uninstall STA using either the graphical uninstaller or the console:

- Graphical uninstaller (recommended)
  "Uninstall Using the Graphical Uninstaller" on page 102
- Console uninstaller.
  "Uninstall Using the Console" on page 105

Uninstall Using the Graphical Uninstaller

Caution – All STA database data will be removed during the uninstall process. If you would like to keep this data, as in the case of reinstalling STA on a different server, be sure to perform a backup before uninstalling.

Caution – The following directories are removed during the uninstall process:

```
/Oracle/Middleware
/Oracle/StorageTek_Tape_Analytics
/var/log/tbi
```

1. **Stop all STA services by entering the following command:**

   ```
   # STA stop
   ```

2. **Set your DISPLAY environment variable (if currently not set).**

   ```
   # export DISPLAY=hostname:0.0
   ```

   Note – If you used `ssh -X` or `ssh -Y` to connect to the server, your DISPLAY variable should already be set.

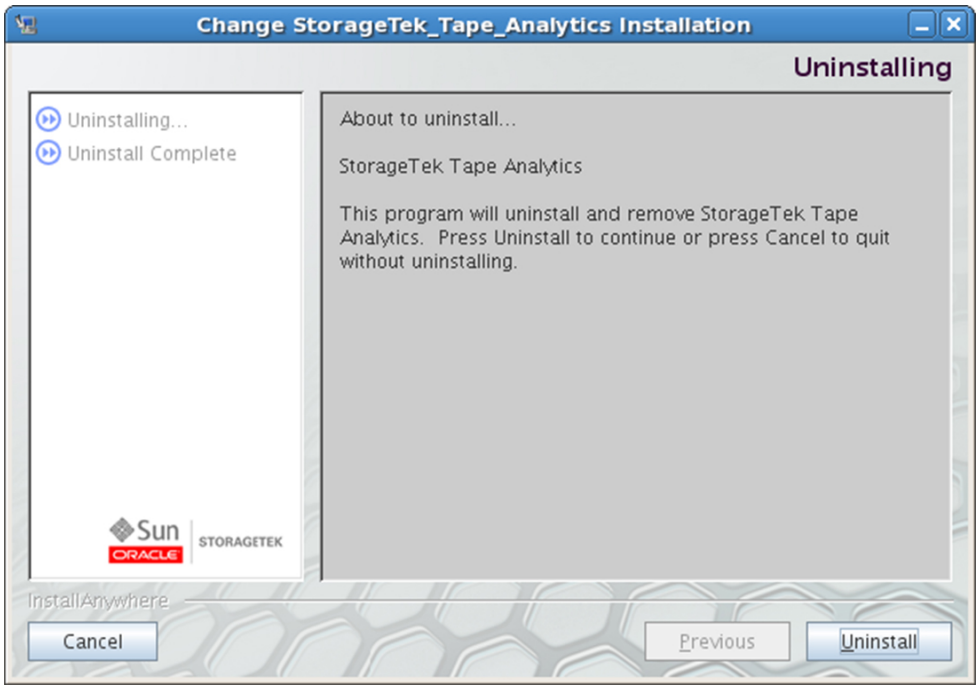
3. **Change to the STA install directory:**

   ```
   # cd /Oracle/StorageTek_Tape_Analytics_install
   ```

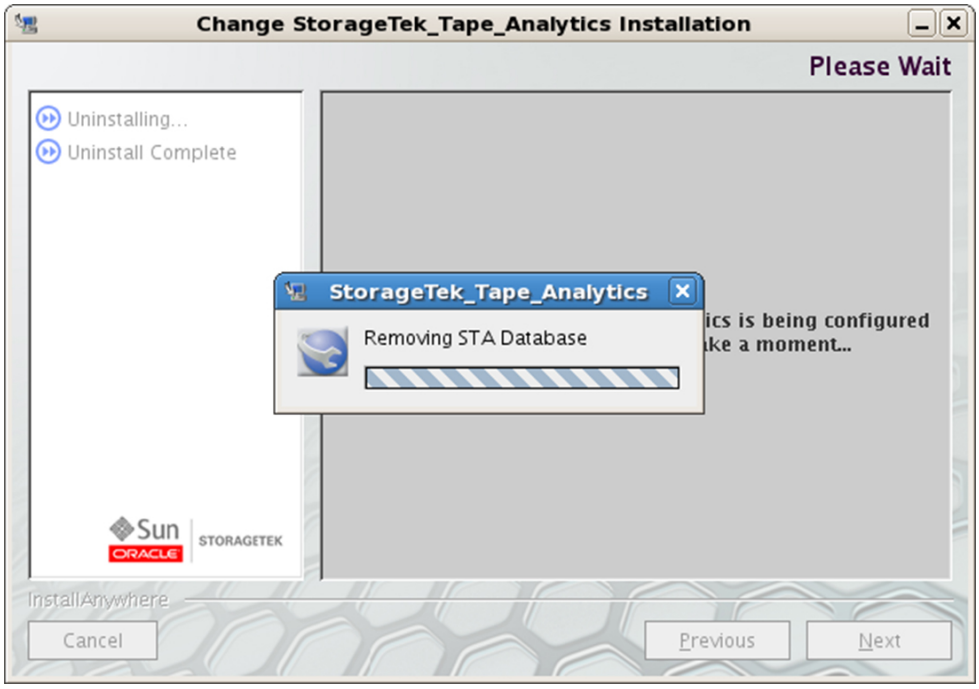
4. **Execute "Uninstall_StorageTek_Tape_Analytics".**

   ```
   # ./Uninstall_StorageTek_Tape_Analytics
   ```

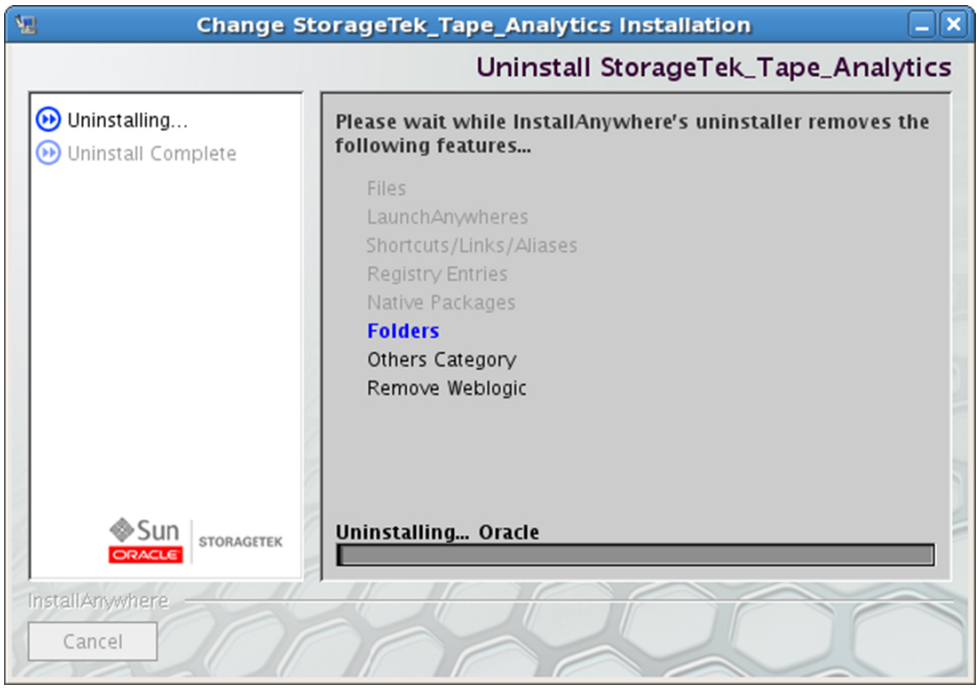
5. **Click Uninstall on the Uninstalling screen.**



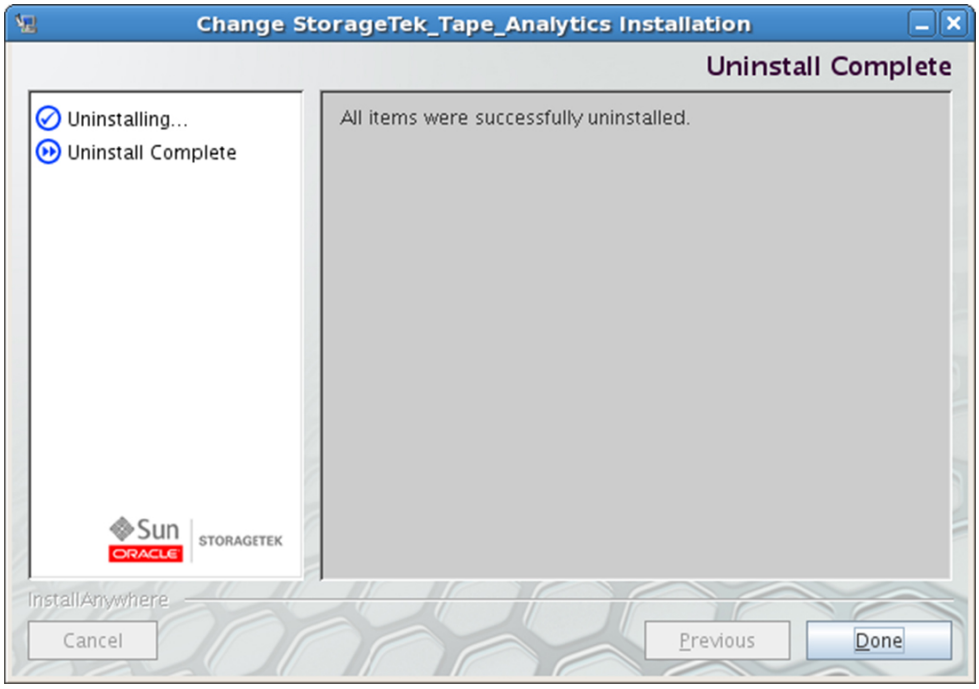
6. **The Please Wait screen is displayed as the uninstall process begins.**



7. **The Uninstall StorageTek_Tape_Analytics screen is displayed as STA features are removed. You will see notices showing the uninstallation progress.**



8. **Click Done on the Uninstall Complete screen.**


Change StorageTek_Tape_Analytics Installation
Uninstall Complete
Uninstalling...
Uninstall Complete
All items were successfully uninstalled.
Sun
ORACLE
STORAGETEK
InstallAnywhere
Cancel
Previous
Done

Uninstall Using the Console

Caution – All STA database data will be removed during the uninstall process. If you would like to keep this data, as in the case of reinstalling STA on a different server, be sure to perform a backup before uninstalling.

Caution – The following directories are removed during the uninstall process:

```
/Oracle/Middleware
/Oracle/StorageTek_Tape_Analytics
/var/log/tbi
```

1. **Stop all STA services by entering the following command:**

   ```
   # STA stop
   ```

2. **Change to the directory /Oracle/StorageTek_Tape_Analytics_install.**

   ```
   # cd /Oracle/StorageTek_Tape_Analytics_install
   ```

3. **Enter the following at the command line:**

   ```
   # ./Uninstall_StorageTek_Tape_Analytics -i console
   ```

4. **The Preparing CONSOLE Mode Uninstallation dialog box is displayed. Press Enter.**

```
Preparing CONSOLE Mode Uninstallation...
==============================================================
StorageTek_Tape_Analytics (created with InstallAnywhere)
--------------------------------------------------------------
============================================================
Uninstall StorageTek_Tape_Analytics
-----------------------------------
About to uninstall StorageTek Tape Analytics.....
This will uninstall and remove StorageTek Tape Analytics from
your system.
PRESS <ENTER> TO CONTINUE:
```

5. **The Uninstalling dialog box is displayed as uninstallation begins.**

```
==============================================================
Uninstalling...
---------------
...*
*
*************************
*************************
*************************
************************
...*
```

6. **The Uninstall Complete dialog box is displayed, signaling that STA has been successfully uninstalled.**

```
==============================================================
Uninstall Complete
------------------
All items were successfully uninstalled.
```

Index

S

U

W