

StorageTek Tape Analytics

Planning and Installation Guide

Version 1.0.2



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Summary of Changes

v1.0.2 Revision, April 2013

Document update ONLY — The STA 1.0.2 version of this document was revised with the following changes. These updates are flagged with change bars in the margin.

- Updates to [Chapter 2, “Pre-Installation Planning”](#):
 - [“Library Software Requirements”](#) — Updated [TABLE 2-4](#) to modify firmware versions primarily for HP LTO-6 drive support.
 - [“Tape Drive Requirements”](#) — Updated [TABLE 2-7](#) to add HP LTO-6 drives; updated firmware requirements for IBM LTO-4 (encryption), LTO-5, and LTO-6.
 - [“Service Request\(s\) for Libraries”](#) — Updated [Step 3](#) to state that an Oracle support representative must configure IBM LTO-3, LTO-4, LTO-5, and LTO-6 drive hardware or firmware for ADI mode.

v1.0.2, December 2012

The following sections were updated for this release.

- Updates to [Chapter 2, “Pre-Installation Planning”](#):
 - [“Library Software Requirements”](#) — Updated for firmware version changes.
 - [“Library Hardware Requirements” on page 15](#) — Added SL150.
 - [“Tape Drive Requirements”](#) — Updated for firmware version changes, addition of LTO-6 drives.

v1.0.1, July 2012

The following sections were updated for this release.

- Updates to [Chapter 2, “Pre-Installation Planning”](#):
 - [“Library Software Requirements”](#) — Updated for firmware version changes.
 - [“Tape Drive Requirements”](#) — Updated for firmware version changes and language concerning what TTI levels are recommended.

- “[Operating System Requirements](#)” — Updated to clarify supported Linux versions.
- “[Firewall Port Configuration](#)” — Updated to reorganize content.
- “[Additional Considerations](#)” — New section. Existing content moved to this section.
- Updates to [Chapter 4, “Installing STA”](#):
 - “[Before Installing STA](#)” — Section formerly called “Important Information”. Updated to add information about STA fresh installation.
 - “[STA Pre-Installation Checks](#)” — New section. Some existing content moved to this section.
 - “[Downloading and Preparing STA](#)” — Content reorganized.
 - “[Installing STA](#)” — Added reference to new “Upgrading, Reinstalling, and Downgrading STA” chapter in *STA Administration Reference Guide*.
 - “[Install Using the Console Installer](#)” — Added usage of command to force console mode installation (`-i console` option).

v1.0.0, April 2012

Initial release.

Preface

This document describes planning for installation of Oracle's StorageTek Tape Analytics (STA) product, followed by installation procedures for the Linux platform and the STA software.

STA Documentation

Document Title	Description
<i>StorageTek Tape Analytics Release Notes</i>	Read this document before installing and using STA. It contains important release information, including known issues.
<i>StorageTek Tape Analytics Planning and Installation Guide</i>	Use this book to plan for installation of STA, install the Linux platform, and install the STA software.
<i>StorageTek Tape Analytics Configuration Guide</i>	After installing the STA software, use this book to configure libraries, SNMP, email notification, services, identity management, and certificates.
<i>StorageTek Tape Analytics Administration Reference Guide</i>	Use this book to learn about STA administrative tasks, including server, services, and password administration.
<i>StorageTek Tape Analytics User Interface Guide</i>	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.
<i>StorageTek Tape Analytics Data Reference Guide</i>	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.
<i>StorageTek Tape Analytics Security Guide</i>	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)

STA Introduction

Overview

Oracle's StorageTek Tape Analytics (STA) is an intelligent monitoring application, available exclusively for Oracle's StorageTek Modular Tape Libraries. It simplifies tape storage management and allows you to make informed decisions about future tape storage investments based on the current health of your environment.

STA allows you to monitor globally dispersed libraries from a single, browser-based user interface. You can manage open systems, mixed-media, and mixed-drive environments across multiple library platforms.

STA allows you to increase the utilization and performance of your tape investments by performing detailed performance trending analyses. These analyses are based on a regularly updated database of library operations.

Supported Libraries and Devices

STA supports the following libraries and tape drives. See [Chapter 2, "Pre-Installation Planning"](#) for library and tape drive requirements.

StorageTek Modular Tape Libraries:

- SL150
- SL500
- SL3000
- SL8500

Drive and media types:

- StorageTek T10000A, T10000B, and T10000C
- StorageTek 9840C and 9840D
- HP LTO-3, LTO-4, LTO-5
- IBM¹ LTO-3, LTO-4, LTO-5, LTO-6

1. At time of STA 1.0.2 release, only basic (LDI mode) support for IBM LTO-5 and LTO-6 drives.

Pre-Installation Planning

This chapter contains the following topics:

- “STA Deployment Roadmap” on page 12
- “Library Minimum Requirements” on page 14
- “Server Minimum Requirements” on page 18
- “Additional Considerations” on page 20
- “Prepare Service Requests for Oracle Support” on page 21

STA Deployment Roadmap

- “STA Installation Process” on page 12
- “STA Configuration Process” on page 12
- “STA Administration” on page 13
- “Additional Documentation” on page 13

STA Installation Process

TABLE 2-1 highlights the major steps for planning for and installing STA.

TABLE 2-1 STA Planning and Installation Steps

Step	Description	Audience	Location
1	Review the planning and requirements information in this chapter.	Linux Admin STA Admin Library Admin/Oracle SE MVS System Programmer STA User	(This chapter)
2	Install Linux on the STA Server	Linux Admin	Chapter 3
3	Install the STA software ¹	STA Admin	Chapter 4

1. You can perform the installation yourself or purchase Oracle installation services.

STA Configuration Process

Once STA has been installed, use the *StorageTek Tape Analytics Configuration Guide* to configure your system for STA. TABLE 2-2 highlights the major configuration steps.

TABLE 2-2 STA Configuration Steps

Step	Description	Audience	Location
1	Configure the libraries for STA	Library Admin/Oracle SE	Config Guide
2	Configure SNMP on the STA Server	STA Admin STA User	Config Guide
3	Configure e-mail notifications	STA Admin STA User	Config Guide
4	Configure STA services — Backup Service and Resource Monitor Service	STA Admin	Config Guide
5	Configure STA identity management — local users and open LDAP	STA Admin	Config Guide
6	Configure STA identity management — RACF (for MVS mainframe only)	STA Admin MVS System Programmer	Config Guide
7	Configure certificates	STA Admin	Config Guide

STA Administration

Once STA has been installed and configured, consult the *StorageTek Tape Analytics Administration Reference Guide* for STA administrative topics. [TABLE 2-3](#) highlights these topics.

TABLE 2-3 STA Administration Topics

Description	Audience	Location
Logging	STA Admin STA User	Admin Guide
Server administration	STA Admin	Admin Guide
Database services administration	STA Admin	Admin Guide
Password administration	STA Admin	Admin Guide
Prevent Denial of Service (DoS) attacks	Linux Admin	Admin Guide
Upgrading, Reinstalling, and Downgrading STA	STA Admin	Admin Guide
Uninstalling STA	STA Admin	Admin Guide

Additional Documentation

In addition to the documents noted in the previous sections, consult the following documents to learn about the STA user interface and the data STA provides:

- For information about the STA user interface, see the *StorageTek Tape Analytics User Interface Guide*. It describes the layout of the screens and provides step-by-step instructions for modifying their display so you can tailor them to your needs.
- For information about using and interpreting the data displayed by STA, see the *StorageTek Tape Analytics Data Reference Guide*. 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.

Library Minimum Requirements

- “Library Software Requirements” on page 14
- “Library Hardware Requirements” on page 15
- “Tape Drive Requirements” on page 15

Note – Library and tape drive documentation can be found on the Oracle Technology Network website: <http://www.oracle.com/technetwork/documentation/tape-storage-curr-187744.html>

Library Software Requirements

TABLE 2-4 lists the library software requirements for STA.

Note – To check your library firmware version, see the “Verify the Library Firmware Version” section within the *StorageTek Tape Analytics Configuration Guide*. To check your SL Console version, click the About button within the SL Console. To download and install SL Console, see your library *User’s Guide*.

Note – For the latest StorageTek library firmware supported by STA, open a Service Request (SR) ticket with Oracle Support. Firmware versions are subject to change.

TABLE 2-4 Library Software Requirements

StorageTek Library/Component	Minimum Requirement	Recommended ¹
SL150	FRS 1.82	FRS 1.82
SL500	FRS 1466 FRS 1485 (with HP LTO-6 drives)	FRS 1483 FRS 1485 (with HP LTO-6 drives)
SL3000	FRS 3.61 FRS 4.00 (with HP LTO-6 drives)	FRS 4.00
SL8500	FRS 8.05	FRS 8.05

1. At time of document release.

Note – SL3000 FRS 4.00 requires SL Console 6.00. SL8500 FRS 8.05 requires SL Console 5.80. All other library firmware versions require SL Console 5.70.

Library Hardware Requirements

TABLE 2-5 lists the library hardware requirements for STA.

TABLE 2-5 Library Hardware Requirements

Library	Component	Requirement
SL8500	HBT card	High memory — For richer drive data to be sent to STA from StorageTek and LTO drives, the library must have a high-memory drive controller (HBT) card. To check the SL Console to determine your HBT card's level of memory, see the "Verify the Drive Controller Card Version" section of the <i>StorageTek Tape Analytics Configuration Guide</i> . Note: All SL3000 libraries ship with the high-memory card. From 2006 forward, all SL8500 libraries ship with the high-memory card.
SL150 SL500 SL3000 SL8500	Ethernet connection	Separate connection from STA to each library. Note: Each library in an SL8500 complex has its own SNMP agent. Therefore, STA must be able to connect to each library separately.

Tape Drive Requirements

The quality of analytics obtained by STA depends on drive capability and its firmware. Some drives can only provide basic information and some cannot provide any information.

LTO drives that support ADI, are configured appropriately, and have supporting firmware can provide STA with high quality data (for example, performance data for drives, and amount and rate of drive utilization).

Note – See "Drive ADI Interface" in the *StorageTek Tape Analytics Configuration Guide* for information on enabling ADI.

Use the following tables to locate your existing drives and determine whether you need to replace them or upgrade firmware for STA to obtain the best quality data.

Note – For the latest drive firmware supported by STA, open a Service Request (SR) ticket with Oracle Support. Firmware versions are subject to change.

- [TABLE 2-6: StorageTek Tape Drive Firmware — Minimum Versions for STA](#)
- [TABLE 2-7: Other Vendor Tape Drive Firmware — Minimum Versions for STA](#)

TABLE 2-6 StorageTek Tape Drive Firmware — Minimum Versions for STA

StorageTek Drive	Minimal/Low Quality Data TTI 5.10	Higher Quality Data TTI 5.20	Highest Quality Data TTI 5.30
T10000A	1.44.108	1.46.109	1.48.112
T10000B	1.44.208	1.46.209	1.48.212
T10000C	N/A	1.51.320	1.53.316
9840C	1.44.510	1.45.503	N/A
9840D	1.44.710	1.45.703	N/A

Note – TTI 5.20 is highly recommended for 9840 drives. TTI 5.30 is highly recommended for T10000 drives.

TABLE 2-7 Other Vendor Tape Drive Firmware — Minimum Versions for STA

Vendor	Drive	Supported Firmware	SL8500	SL3000	SL500	SL150	Comments
HP ¹	LTO 2 LVD SCSI	N/A			x		No support for ADI protocol
	LTO 2 FC 2Gb	N/A	x		x		No support for ADI protocol
	LTO 3 LVD SCSI	G69S			x		
	LTO 3 FC 2Gb	L6HS	x	x	x		
	LTO 3 FC 4Gb	M6BS	x	x	x		
	LTO 4 LVD SCSI	B57S			x		
	LTO 4 FC 4Gb	H58S	x	x	x		
	LTO 5 FH FC 8Gb	I3CS	x	x	x		
	LTO 5 FH SAS 6Gb	X3AS			x		Requires SL500 Bridged Base Unit
	LTO 5 HH FC 8Gb	Y5BS				x	
	LTO 5 HH SAS 6Gb	Z55S				x	
	LTO 6 FH FC 8Gb	J2DS	x	x	x		
	LTO 6 HH FC 8Gb	22GS				x	
	LTO 6 HH SAS 6Gb	32DS				x	
IBM ²	LTO 2 LVD SCSI	N/A			x		No support for ADI protocol
	LTO 2 FC 2Gb	N/A			x		No support for ADI protocol
	LTO 3 FC 2Gb	93G0	x	x	x		
	LTO 4 FC 2/4Gb	94D7	x	x	x		
	LTO 4 FC 2/4Gb Encryption	Contact Support	x	x	x		Requires Belisarius card with 4.x.x (minimum) firmware and compatible drive firmware for ADI support.
	LTO 5 FC 8Gb	Contact Support	x	x	x		Requires Belisarius card with 4.x.x (minimum) firmware and compatible drive firmware for ADI support.
	LTO 6 FC 8Gb	Contact Support	x	x			Requires Belisarius card with 4.x.x (minimum) firmware and compatible drive firmware for ADI support.
Quantum	SDLT 320 LVD SCSI	N/A			x		No support for ADI protocol
	SDLT 600 LVD and FC	N/A			x		No support for ADI protocol
	S4 LVD and FC	N/A			x		No support for ADI protocol

1. For HP LTO-6 drives, contact Oracle support to obtain the latest supported firmware version.

2. For IBM LTO-3 and LTO-4 drives, an Oracle support representative must configure the drive hardware for ADI mode. For IBM LTO-5 and LTO-6 drives, the drive firmware must be configured for ADI mode — contact Oracle support for assistance.

Server Minimum Requirements

- “Hardware Requirements” on page 18
- “Operating System Requirements” on page 18
- “Server IP Address Requirement” on page 18
- “Server Subnet Recommendation” on page 19
- “Firewall Port Configuration” on page 19
- “User Interface Requirements” on page 19
- “Authentication Requirements” on page 19

Hardware Requirements

STA requires a dedicated server with the minimum configuration listed in [TABLE 2-8](#).

TABLE 2-8 STA Minimum Hardware Requirements

Hardware	Configuration
Processor	Intel Xeon 5600 Series or equal AMD CPU
Memory	16 GB RAM
Operating System Disk	Dual HDD drives, 1 TB each
Connection	Gigabit Ethernet
Platform	All disk storage residing on single platform

Operating System Requirements

The Linux operating systems supported for STA are listed in [TABLE 2-9](#).

TABLE 2-9 Operating System Versions Supported for STA

Operating System	Supported Versions ^{1,2}
Oracle Enterprise Linux (OEL), 64-bit (Oracle kernel)	Release 5 Update 5 (5u5) (minimum)
Red Hat Enterprise Linux (RHEL), 64-bit (Red Hat kernel)	Release 5 Update 5 (5u5) (minimum)

1. Release 6 is not supported.

2. Version 5u6 includes the supported browser version for local STA access, Firefox 3.6.
For more information, see “[Ensure Local Browser Functionality](#)” on page 53.

Server IP Address Requirement

The server on which STA is installed must have a static IP address assigned. Dynamic addressing (DHCP) is not supported.

Server Subnet Recommendation

Oracle recommends that you place the server on which STA is installed on the same subnet as the library to improve SNMP UDP reliability.

If you want to configure STA to support dual TCP/IP on the library using two distinct subnets, the network must be configured to allow the delivery of SNMP packets on either subnet between the library and STA. Consult your network administrator and Oracle support representative for more information.

Firewall Port Configuration

For STA to retrieve and receive data, configure firewalls and routers to open the following ports in [TABLE 2-10](#).

TABLE 2-10 Ports Used by STA

Port ^{1,2}	Purpose
22	Secure Shell (SSH)
80, 8080	Unsecure HTTP communication between STA and browser
443	Secure HTTPS (over SSL/TLS) communication between STA and browser
161	Simple Network Management Protocol (SNMP)
162	Simple Network Management Protocol Trap (SNMPTRAP)
7001	WebLogic Admin Console login, HTTP
7002	WebLogic Admin Console login, HTTPS
7021	STA GUI login, HTTP
7022	STA GUI login, HTTPS

1. Ports 161 and 162 must be available and dedicated to STA. Make sure that you do not filter out these ports when configuring your firewall rules.
2. Ports 7001, 7002, 7021, and 7022 are defaulted, but can be changed during STA software installation. To ensure communication integrity of STA, once these port values are chosen during STA installation, they must NOT be manually changed at a later time.

User Interface Requirements

Refer to the “Getting Started” chapter of the STA User Interface Guide.

Authentication Requirements

The following types of authentication can be used by STA:

- Local WebLogic users
- Open LDAP users
- RACF users (if using RACF for authentication)

To set up authentication, see the *StorageTek Tape Analytics Configuration Guide*.

Additional Considerations

- [“Duplicate Volume Serial Numbers” on page 20](#)
- [“Security Service Provider \(SSP\) Access” on page 20](#)
- [“Oracle Certificate Replacement” on page 20](#)

Duplicate Volume Serial Numbers

In the STA data store, media history is retained by volume serial number (VSN or volser). That is, all history for a particular piece of media is tied to its volser. For this reason, it is recommended that you avoid duplicate volsers in the tape environment monitored by STA. Volsers should be unique across all monitored libraries. Duplicate volsers will result in co-mingling of data for different pieces of media.

For more information on duplicate volsers, see the *StorageTek Tape Analytics Data Reference Guide*.

Security Service Provider (SSP) Access

You can give STA access to an external security service provider (SSP), if desired.

The STA installation creates two local WebLogic users, one with access to the WebLogic console and the other with access to the STA GUI. If the site requires another SSP, such as Open LDAP or RACF, you can configure the SSP after completing the installation.

Once the installation is complete, configure the data sources. Notification rules can be configured as you wish. See the “Configuring the Libraries for STA” and “Configuring SNMP in the STA Application” chapters within the *StorageTek Tape Analytics Configuration Guide*.

Oracle Certificate Replacement

The STA installation software automatically installs a self-generated certificate using the server name where STA is being installed. You can replace this with your own approved certificate from a selected certificate authority (for example, VeriSign).

For steps to replace the Oracle-supplied certificate, see the “Configuring Certificates” chapter of the *StorageTek Tape Analytics Configuration Guide*.

Prepare Service Requests for Oracle Support

- [“Service Request for Tape Drive Firmware” on page 21](#)
- [“Service Request\(s\) for Libraries” on page 21](#)

Service Request for Tape Drive Firmware

Tape drive firmware requirements are provided in [“Tape Drive Requirements” on page 15](#). However, for the latest drive firmware supported by STA, open a Service Request (SR) ticket with Oracle support, as firmware versions are subject to change.

Service Request(s) for Libraries

Use this procedure to provide your Oracle support representative with the information needed to prepare your library for monitoring by STA. Your specific requirements will vary depending on your library and drive configuration.

Note – You will need to prepare a service request for each library in a library complex. For example, if you have an SL8500 library complex containing four libraries, you will need to submit four separate service requests.

1. Verify the library firmware version.

If the library does not meet the minimum firmware requirements for STA, then your Oracle support representative must upgrade it.

See the following topics to determine whether you need your Oracle support representative to perform this activity:

- [“Library Software Requirements” on page 14](#)
- [“Verify the Library Firmware Version” section within the *StorageTek Tape Analytics Configuration Guide*.](#)

Note – For SL8500 libraries, your Oracle support representative needs to record the library network connection settings before performing the firmware upgrade. Depending on the library upgrade history, the network settings may need to be re-entered or updated after the firmware upgrade.

2. SL3000 and SL8500 only: Verify a high-memory library drive controller (HBT) card.

For SL3000 and SL8500 libraries to send rich drive data to STA, the library must have a high-memory HBT card. This is mainly a concern for older libraries (shipped before mid-2006), as newer units are shipped with a high-memory card.

See the [“Verify the Drive Controller Card Version” section within the *StorageTek Tape Analytics Configuration Guide*](#) to determine whether you need your Oracle support representative to perform this activity.

3. Enable ADI on IBM LTO-3, LTO-4, LTO-5, and LTO-6 drives.

For IBM LTO-3 and LTO-4 drives, an Oracle support representative must configure the drive hardware for ADI mode. For IBM LTO-5 and LTO-6 drives, the drive firmware must be configured for ADI mode using Virtual Operator Panel (VOP) — contact Oracle support for assistance.

See “Drive ADI Interface” in the *StorageTek Tape Analytics Configuration Guide* for additional information on enabling ADI mode.

4. SL8500 only: Set the library complex ID.

Complex IDs are used by both STA and the Oracle Service Delivery Platform (SDP). Your Oracle support representative should ensure that the IDs are set correctly for both applications.

See the following topics for additional information:

- “Library Complex IDs” section within the *StorageTek Tape Analytics Configuration Guide*.
- “Ensure the Correct Library Complex ID” section within the *StorageTek Tape Analytics Configuration Guide*.

5. Set the library date and time.

To ensure that data records sent to STA have the correct date/time stamps, the library clock must be set to the library’s current local time. Your Oracle support representative should ensure that this is set correctly.

6. Submit the service request(s) according to your established procedures.

Installing Linux on the Server

This chapter details the Linux installation process. Before proceeding, be sure to verify system requirements in [Chapter 2, “Pre-Installation Planning”](#).

You will use the following process to install Linux on the STA server:

Preparation Tasks

1. [“Review STA Filesystem Structure” on page 24](#)
2. [“Review Related Documentation” on page 24](#)
3. [“Download the Linux Installer Media Pack” on page 25](#)

Linux Installation Tasks

4. [“Before Installing Linux” on page 29](#)
5. [“Install Linux” on page 30](#)
6. [“Run the Linux Setup Agent” on page 42](#)
7. [“Verify Your Linux Release” on page 49](#)

Linux Post-Installation Tasks

8. [“Set Up the Network Proxy” on page 50](#)
9. [“Ensure Proper Setup of yum” on page 51](#)
10. [“Ensure Proper Setup of SSH” on page 52](#)
11. [“Ensure Availability of Expect” on page 52](#)
12. [“Ensure Availability of net-snmp-utils” on page 53](#)
13. [“Ensure Local Browser Functionality” on page 53](#)

Preparation Tasks

- [“Review STA Filesystem Structure” on page 24](#)
- [“Review Related Documentation” on page 24](#)
- [“Download the Linux Installer Media Pack” on page 25](#)

Review STA Filesystem Structure

TABLE 3-1 describes the recommended filesystem structure for the STA server. You can configure this during Linux installation.

TABLE 3-1 Recommended File System Structure

File System	Directories/ Mountpoints	Size	Comments
root	/	32 GB minimum	
STA Oracle	/Oracle	32 GB minimum	STA Middleware home. Note: This should be a separate file system. This is where the STA application is installed.
swap	None. Defined as memory.	2X RAM	
STA var	/var/log/tbi	16 GB minimum 50 – 100 GB optimum	The /var/log directory is used for syslog log files and other system logs. All STA logs write to the directory tree rooted at /var/log/tbi and its subdirectories. /var/log/tbi should be a separate volume at this mountpoint. Contents of /var tend to grow.
STA_DB	/dbdata	500 GB – 2 TB	Where STA database files are stored. If possible, place this directory on a volume separate from /root, /swap, and /var. For performance, backup, and maintainability, best practice is to use a separate set of drives for the STA database files. Storage should be mirrored or striped, depending on your specific disk drive configuration.

Review Related Documentation

Due to the wide variety of network configuration requirements and options, refer to the following documents for help with installing and configuring the hardware, software, and network. IPv4 and IPv6 network configuration are discussed in detail in these documents.

- Oracle Linux Installation Guides:
<http://www.oracle.com/technetwork/topics/linux/index-099698.html>
- RedHat Linux Documentation:
<http://docs.redhat.com/docs/en-US/index.html>

▼ Download the Linux Installer Media Pack

Use this procedure to download the Linux installer media pack from the Oracle Software Delivery Cloud website. The media pack is delivered as a compressed ISO image file, which you can extract and write to portable media of your choice.

Note – Before performing this task, you must obtain an Oracle Software Delivery Cloud user ID and password from your Oracle support representative.

Note – You must perform this procedure on a system that has network connectivity, a Web browser, and a method for writing to external media, such as a DVD burner or a USB port to connect a flash drive.

Note – You must only obtain Oracle Linux from the Oracle Software Delivery Cloud website.

1. Start a Web browser on the system and navigate to the Oracle Software Delivery Cloud website at the following URL:

<http://edelivery.oracle.com/linux>

2. Click Sign In/Register.



3. Enter the user ID and password provided by your Oracle support representative.
4. On the Terms & Restrictions screen:
 - a. Read the License Agreement and Export Restrictions.
 - b. Select the check boxes to indicate your acceptance.
 - c. Click Continue.

ORACLE®
Software Delivery Cloud - Oracle Linux and Oracle VM

Sign Out Cloud Portal (Oracle Linux/VM) ▾

Terms & Restrictions Search Download

Terms & Restrictions

By accessing the software on this Web site, you agree to accept the license terms for each program that you download. The Agreement terms for Oracle Linux, Oracle VM - Server and Oracle VM - Manager are below.

Agreement Terms [View printable version](#)

This Agreement includes license terms supporting the products available for download on this site - Oracle Linux, Oracle VM-Server, Oracle VM-Manager and other Oracle Programs. Please review the terms for the products you will download and/or install today.

Section A: Terms for Oracle Linux
Section B: Terms for Oracle VM - Server
Section C: Terms for Oracle VM - Manager
Section D: Terms for Use of Other Oracle Programs

☒ YES, I agree. I acknowledge that I have reviewed and understood the agreement and that
(i) the terms in Section A - Terms for Oracle Linux govern my use of the Oracle Linux program if I choose to download/install that program;
(ii) the terms in Section B - Terms for Oracle VM - Server govern my use of the Oracle VM - Server program if I choose to download/install that program and
(iii) the terms in Section C - Terms for Oracle VM - Manager govern my use of the Oracle VM - Manager program if I choose to download/install that program.
(iv) the terms in Section D - Terms for use of Other Oracle Programs governs my use of any other Oracle programs if I choose to download/install those programs.

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You agree that U.S. export control laws and other applicable export and import laws govern your use of the programs, including technical data; additional information can be found on Oracle®'s [Global Trade Compliance Web site](#).

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☒ YES, I accept these Export Restrictions

[Continue](#)

5. On the Media Pack Search screen:

- a. In the Select a Product Pack menu, select Oracle Linux.
- b. In the Platform menu, select x86 64 bit.

Note – STA requires the 64-bit Linux version. During STA installation, the installer will check for this requirement.

- c. Click Go.

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Terms & Restrictions Search Download

Media Pack Search

Select the Product Pack and Platform and click "Go".

Select a Product Pack

Platform

Go

Results

Select	Description	Release	Part Number	Updated	# Parts / Size
*** No search conducted ***					

Continue

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6. Select the version of Linux you want to download, and then click Continue.

Note – For Linux version requirements, see “Operating System Requirements” on page 18.

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Terms & Restrictions Search Download

Media Pack Search

Select the Product Pack and Platform and click "Go".

Select a Product Pack

Platform

Go

Results

Select	Description	Release	Part Number	Updated	# Parts / Size
<input type="radio"/>	Oracle Linux Release 6 Update 1 Media Pack for x86_64 (64 bit)	6.1.0.0.0	B63849-01	JUN-07-2011	4 / 7.9G
<input type="radio"/>	Oracle Linux Release 6 Media Pack for x86_64 (64 bit)	6.0.0.0.0	B62520-01	FEB-11-2011	3 / 7.6G
<input type="radio"/>	Oracle Linux Release 5 Update 7 Media Pack for x86_64 (64 bit)	5.7.0.0.0	B64448-01	AUG-05-2011	2 / 6.5G
<input checked="" type="radio"/>	Oracle Linux Release 5 Update 6 Media Pack for x86_64 (64 bit)	5.6.0.0.0	B62317-01	JAN-28-2011	2 / 6.4G
<input type="radio"/>	Oracle Linux Release 5 Update 5 Media Pack for x86_64 (64 bit)	5.5.0.0.0	B58775-01	SEP-23-2010	13 / 12G
<input type="radio"/>	Oracle Linux Release 5 Update 4 Media Pack for x86_64 (64 bit)	5.4.0.0.0	B56198-01	SEP-23-2010	13 / 11G

7. Click Download for the 64-bit option.

ORACLE
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Sign Out Cloud Portal (Oracle Linux/VM)

Terms & Restrictions Search **Download**

Oracle Linux Release 5 Update 6 Media Pack for x86_64 (64 bit)

Search Again

☒ **TIP** View the Readme file(s) to help decide which files you need to download.

Print this page with the list of downloadable files. It contains a list of the part numbers and their corresponding description that you may need to reference during the installation process.

Oracle Linux Release 5 Update 6 Media Pack v1 for x86_64 (64 bit)

Readme View Digest

Select	Name	Part Number	Size (Bytes)
Download	Oracle Linux Release 5 Update 6 for x86_64 (64 Bit)	V24479-01	3.5G
Download	Oracle Linux Release 5 Update 6 source	V24480-01	2.9G

Total: 2

8. Save the media pack .zip file to the location of your choice.

Depending on network speed, this may take around an hour.

9. Use any unzip tool to extract the ISO image file from the .zip file.

10. Use the media writing software of your choice to write the ISO image file to the media of your choice.

You will use the media to install Linux on the STA server.

11. Proceed to “Linux Installation Tasks” on page 29.

Linux Installation Tasks

- “Before Installing Linux” on page 29
- “Install Linux” on page 30
- “Run the Linux Setup Agent” on page 42
- “Verify Your Linux Release” on page 49

Before Installing Linux

Use the following procedure to install Linux on the STA server.

Note – These instructions assume you are installing from DVD/CD-ROM. If you are using a different installation method, the first few steps may vary.

Note – The examples in the following procedure use the graphical installer for Oracle Enterprise Linux (OEL), version 5u6. If you are installing a different version of Linux or if you are using console mode, the exact steps will vary.

Note – The graphical installer requires the kdelibs package, which is included in the Linux Installer Media Pack.

Before starting this procedure, check with your IT system administrator to obtain the following information:

- Hostname and IP address for the STA server
- Gateway IP address and netmask for your network
- IP address of the NTP (network time protocol) servers you will be using
- Network proxy information, if applicable

In this procedure, you will install key software components, including the following:

- GNOME desktop environment
- Internet support
- Editors, graphical Internet and text-based Internet
- X Windows
- Resource Package Manager (RPM), Yellowdog Updater, Modified (yum), and Tcl Expect
- Java

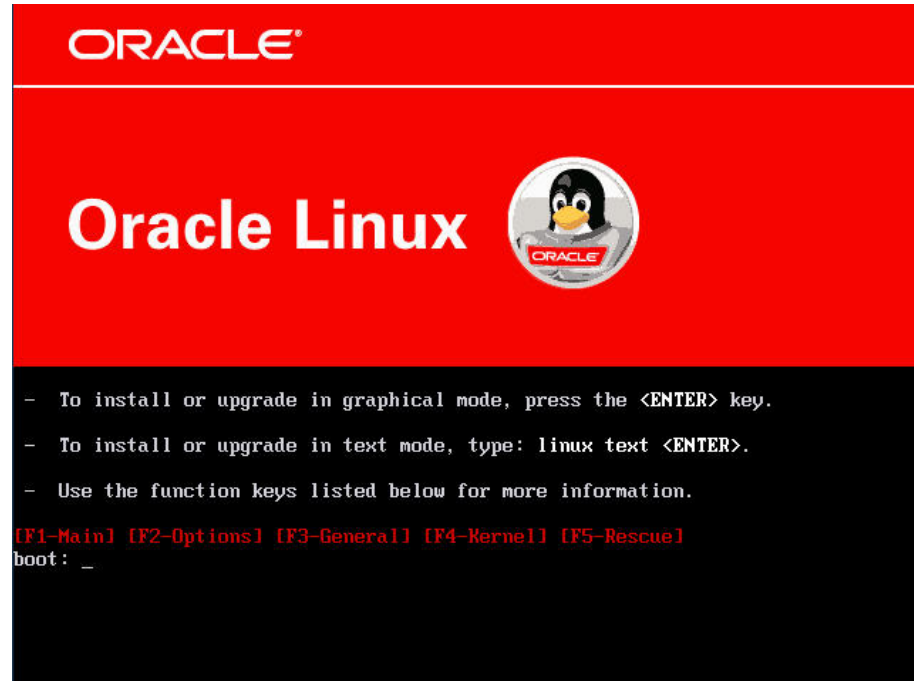
Be sure you do NOT install or enable the following:

- Web server
- Database
- Dial-up network support

▼ Install Linux

1. Attach the media you created in [“Download the Linux Installer Media Pack” on page 25](#) to the STA server.
2. To initiate the Linux installer, follow the instructions in the README file on the media.
3. Press the Enter key to install in graphical mode.

You will see a series of messages as the installer probes your system. This process may take a minute or two.

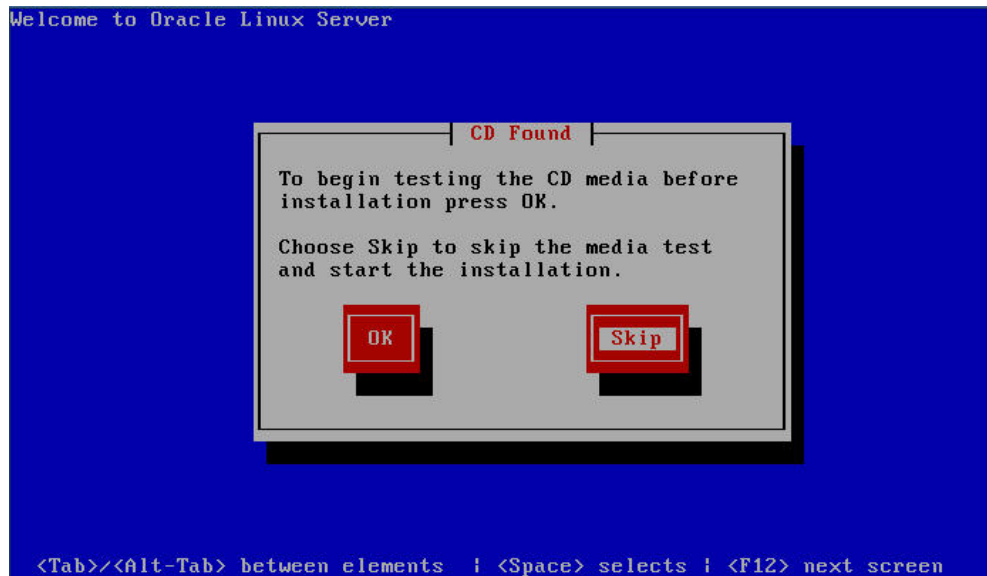


```
md: bitmap version 4.39
TCP bic registered
Initializing IPsec netlink socket
NET: Registered protocol family 1
NET: Registered protocol family 17
Using IPI No-Shortcut mode
ACPI: (supports S0 S1 S4 S5<6>)Time: tsc clocksource has been installed.
)
Initializing network drop monitor service
Freeing unused kernel memory: 228k freed
Write protecting the kernel read-only data: 413k

Greetings.
anaconda installer init version 11.1.2.224 starting
mounting /proc filesystem... done
creating /dev filesystem... done
mounting /dev/pts (unix98 pty) filesystem... done
mounting /sys filesystem... done
input: AT Translated Set 2 keyboard as /class/input/input0
input: ImPS/2 Generic Wheel Mouse as /class/input/input1
trying to remount root filesystem read write... done
mounting /tmp as ramfs... done
running install...
running /sbin/loader
```

4. If you are installing from DVD/CD-ROM, the CD Found screen appears. You can perform a test of the DVD/CD-ROM media, but this is not required and can be time-consuming. To skip the media test, perform the following steps:
 - a. Press Tab to highlight the Skip option.
 - b. Press Enter or Spacebar.

An information screen appears as the installer starts up. This process may take a minute or two.



5. On the Welcome screen, click Next.

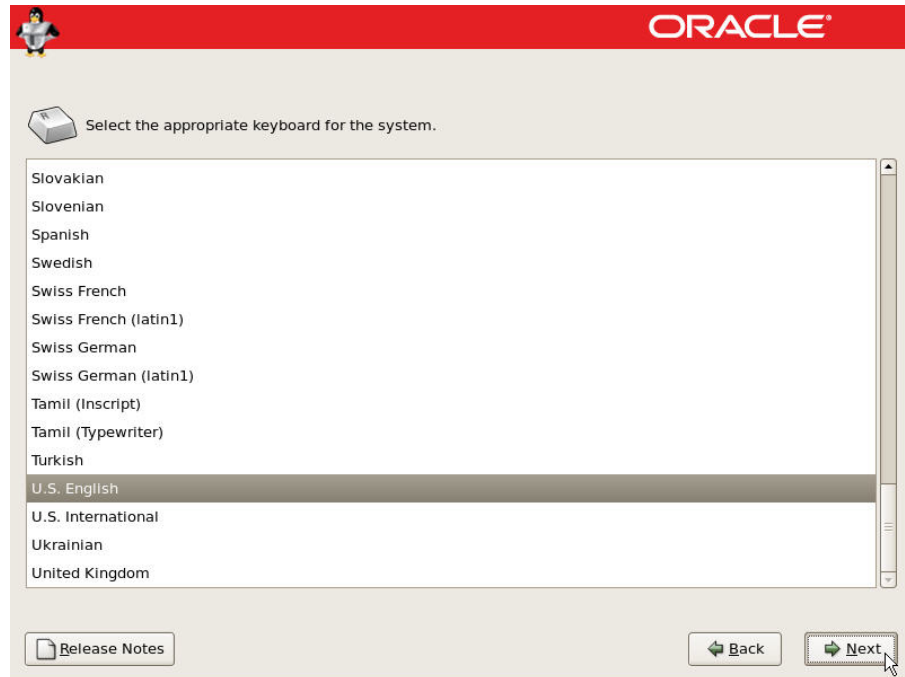
Note – You can view the Linux release notes by clicking the Release Notes button.



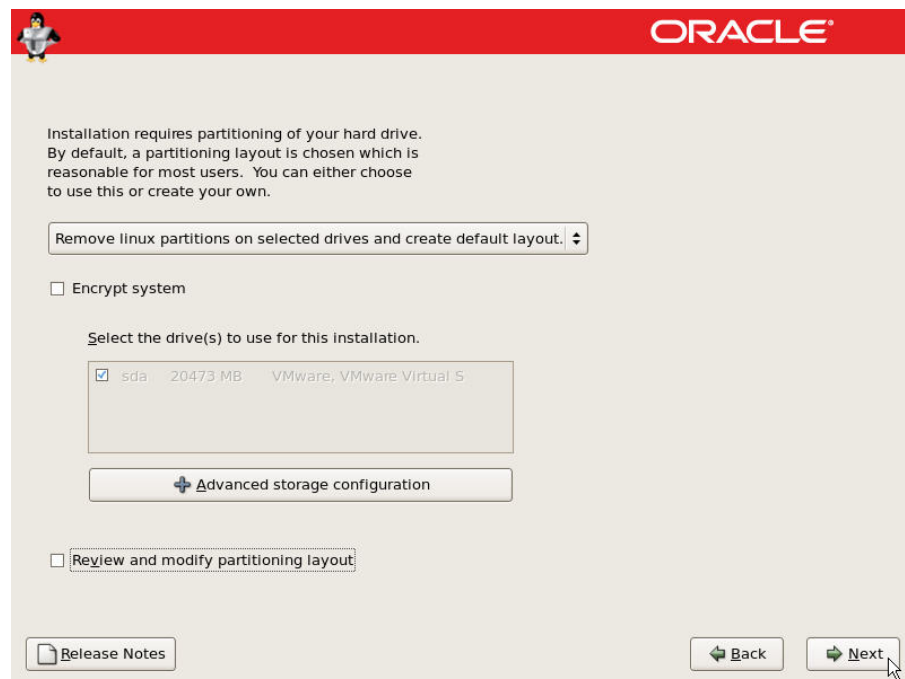
6. Select a language, and then click Next.



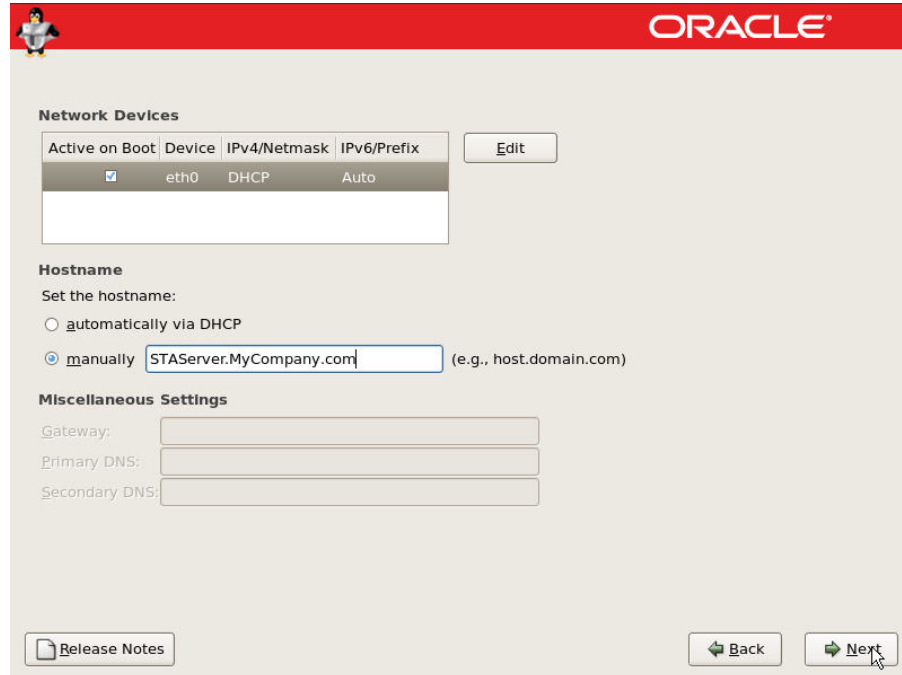
7. Select a keyboard layout, and then click Next.



8. Identify a partitioning layout to use on the server. You can choose the default layout or define a custom one. See [“Review STA Filesystem Structure” on page 24](#) for the recommended layout. To use the default, do the following:
 - a. In the menu, select “Remove linux partitions on selected drives and create default layout.”
 - b. Deselect the “Review and modify partitioning layout” check box. Click Next.



9. Perform the following steps in the Network screen. Your specific settings will vary depending on your requirements.
 - a. Under Network Devices, click Edit. In the dialog box, specify a static IP address for the STA server (DHCP is not supported), and then click OK.
 - b. Under Set the hostname, select “manually” and specify the server name in the field. Click Next.



Network Devices

Active on Boot	Device	IPv4/Netmask	IPv6/Prefix
<input checked="" type="checkbox"/>	eth0	DHCP	Auto

[Edit](#)

Hostname

Set the hostname:


☐ automatically via DHCP
☒ manually (e.g., host.domain.com)

Miscellaneous Settings

Gateway:
 Primary DNS:
 Secondary DNS:

[Release Notes](#) [Back](#) [Next](#)

10. On the time zone screen, select the STA server's time zone, select the “System clock uses UTC” check box, and then click Next.



Please click into the map to choose a region:



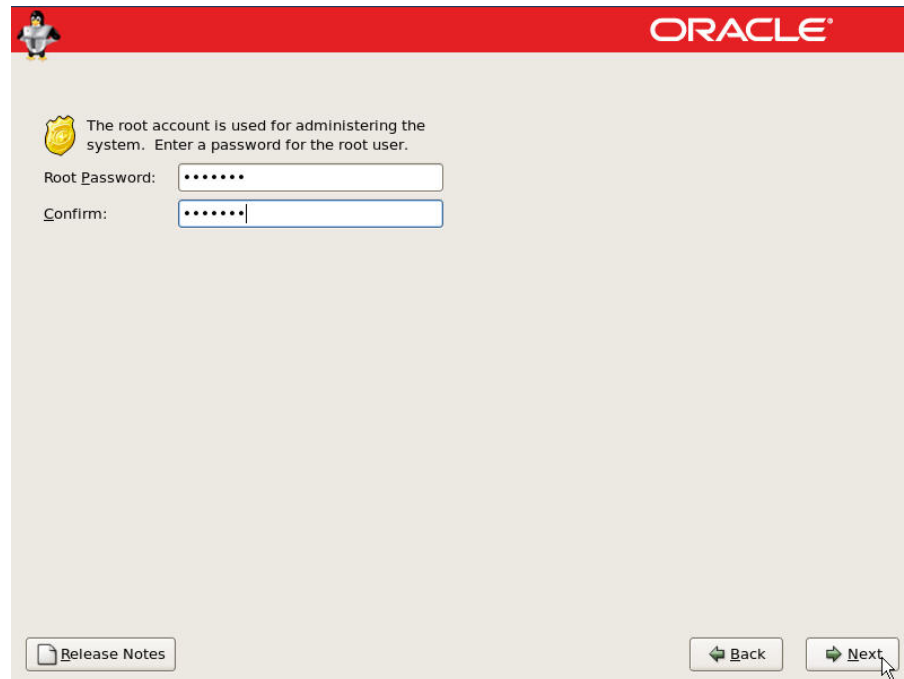
America/New_York Eastern Time

☒ System clock uses UTC

[Release Notes](#) [Back](#) [Next](#)

11. On the password screen, enter and confirm your chosen root password for the server, then click Next.

Note – The root user has complete access to the STA server.



The screenshot shows the Oracle Linux Server password setup screen. At the top, there is a red header with the Oracle logo and a Tux penguin icon. Below the header, a yellow shield icon is next to the text: "The root account is used for administering the system. Enter a password for the root user." There are two input fields: "Root Password:" and "Confirm:", both containing masked characters (dots). At the bottom, there is a "Release Notes" button on the left and "Back" and "Next" buttons on the right. A mouse cursor is pointing at the "Next" button.

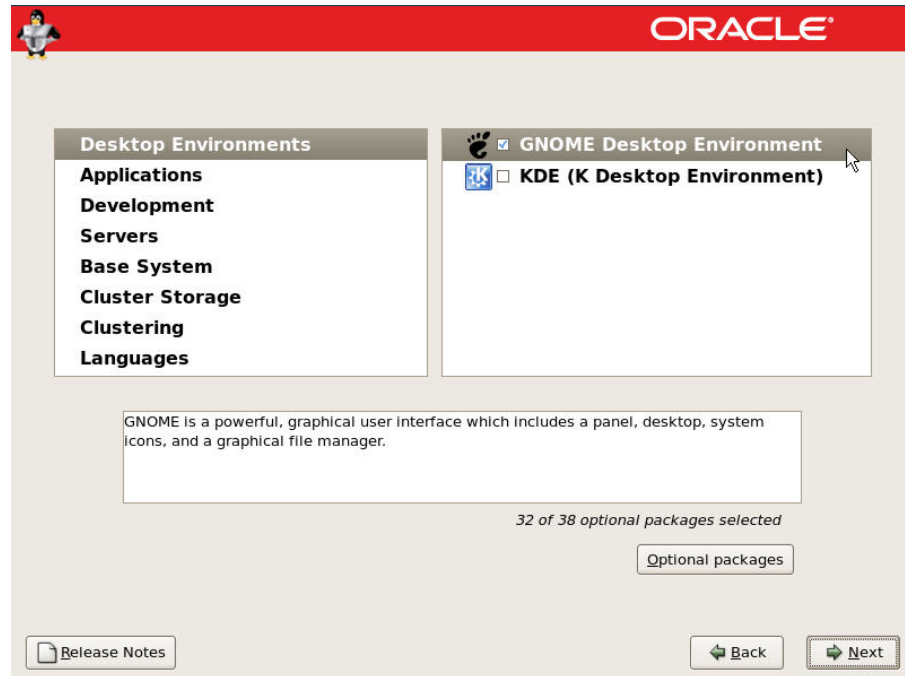
12. On the software selections screen, deselect all check boxes, select "Customize now", then click Next.



The screenshot shows the Oracle Linux Server software selection screen. At the top, there is a red header with the Oracle logo and a Tux penguin icon. Below the header, the text reads: "The default installation of Oracle Linux Server includes a set of software applicable for general internet usage. What additional tasks would you like your system to include support for?" There is a list of software options with checkboxes: "Software Development", "Web server", "Clustering", and "Storage Clustering". All checkboxes are currently unchecked. Below the list, there is a text box stating: "You can further customize the software selection now, or after install via the software management application." There are two radio buttons: "Customize later" and "Customize now". The "Customize now" radio button is selected. At the bottom, there is a "Release Notes" button on the left and "Back" and "Next" buttons on the right. A mouse cursor is pointing at the "Next" button.

13. In the left panel, select **Desktop Environments**. In the right panel, select the check box for **GNOME Desktop Environment**. Do NOT click Next.

Note – If you accidentally click Next after this and the next few steps, click Back after the software completes a dependency check.



14. In the left panel, select **Applications**. In the right panel, do the following:
- Select the **Editors**, **Graphical Internet**, and **Text-based Internet** check boxes.
 - Deselect all other check boxes. Do NOT click Next.



15. In the left panel, select **Development**. In the right panel, do the following:

- a. Select the **Development Libraries** and **Development Tools** check boxes.

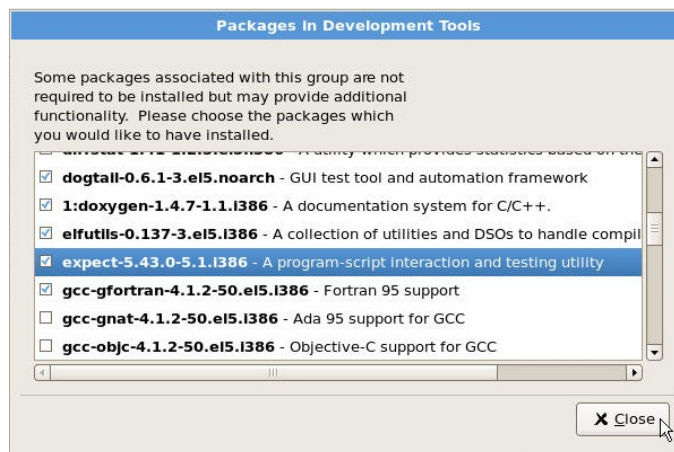
Note – The STA installer will check for the glibc-devel package (part of the Development Libraries group) and the rpm-build package (part of the Development Tools group). If these are not present, STA installation will fail.

- b. Deselect all other check boxes. Do NOT click Next.
- c. With **Development Tools** checked and highlighted, click the **Optional packages** button.



16. In the **Packages in Development Tools** window, do the following:

- a. Scroll to and select the check box for the “expect-x.xx.x” package.
- b. Leave all other packages as-is, and then click **Close**.



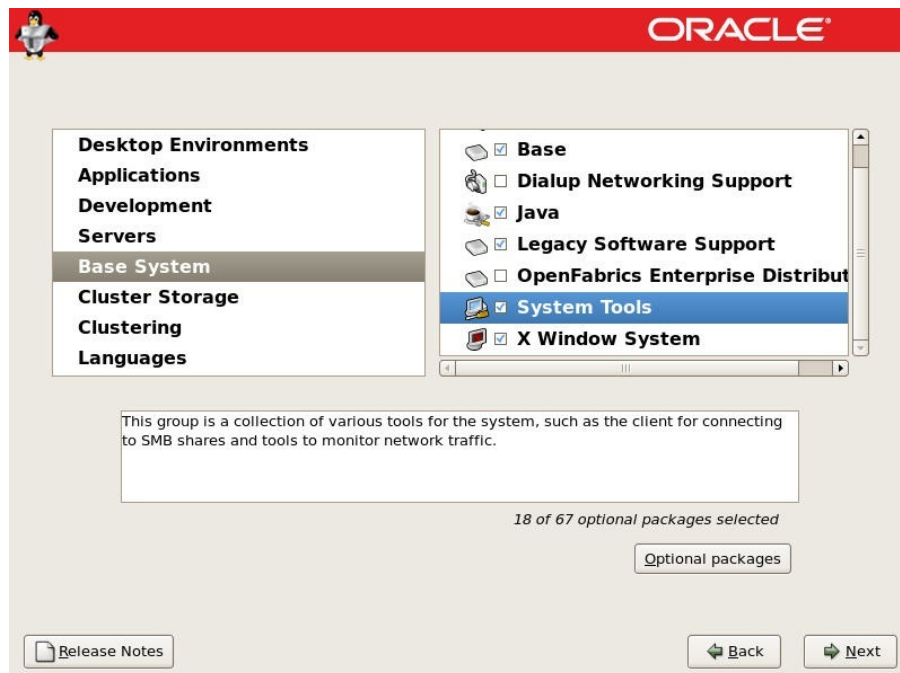
17. In the left panel, select Servers. In the right panel, do the following:

- Deselect Printing Support.
- Leave all other check boxes as-is. Do NOT click Next.

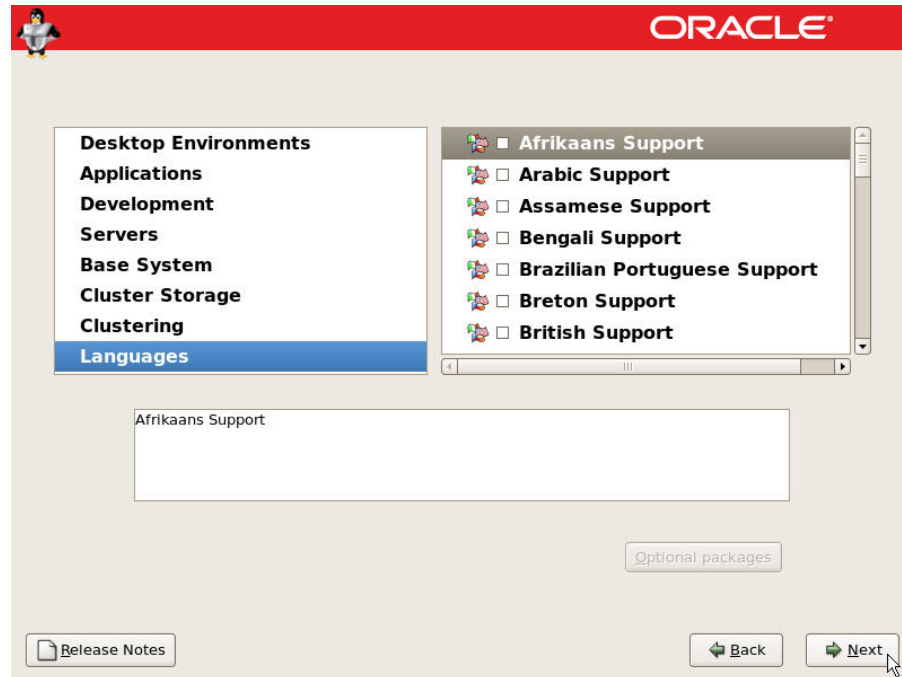


18. In the left panel, select Base System. In the right panel, do the following:

- Select the Administration Tools, Base, Java, Legacy Software Support, System Tools, and X Window System check boxes.
- Deselect the Dialup Networking Support check box. Do NOT click Next.

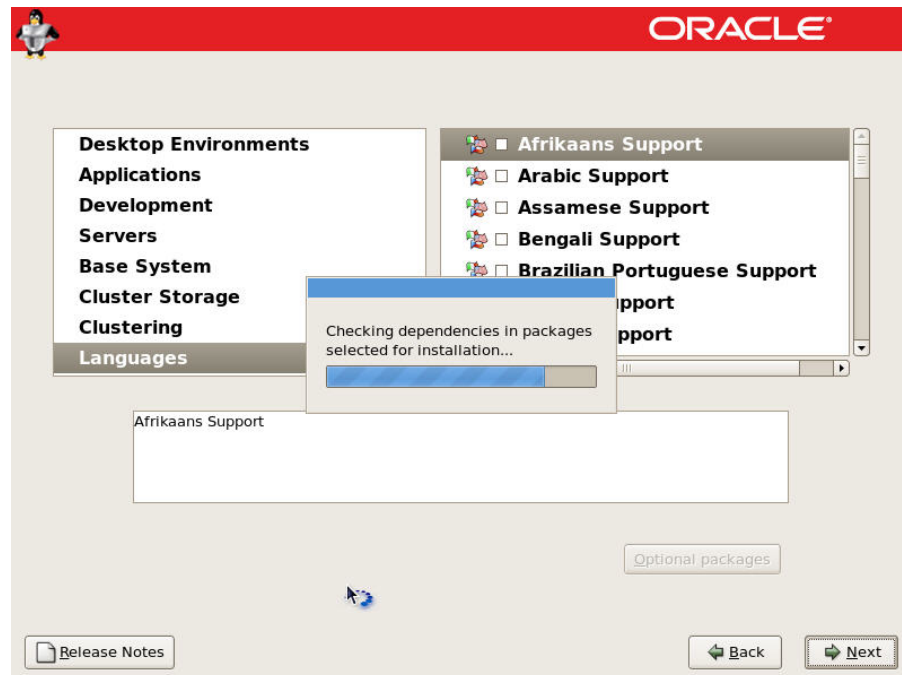


19. If you want Linux on the STA server to use a language other than US English, in the left panel, select Languages. In the right panel, select your language.



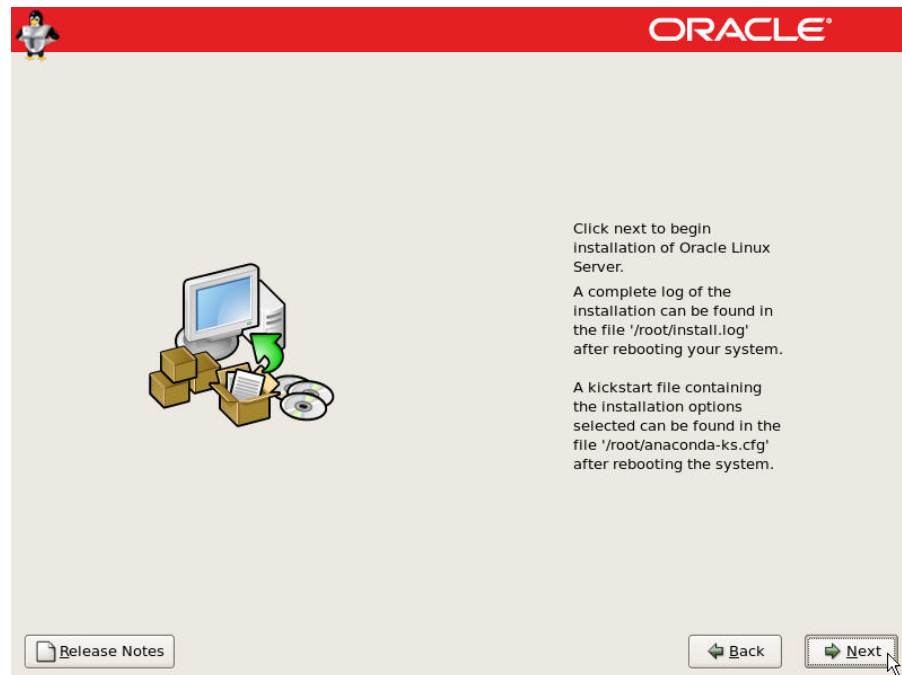
20. In the left panel, do NOT select Cluster Storage, Clustering, or Virtualization. These are not needed for the STA server.
21. Click Next.

The installer checks for package installation dependencies.



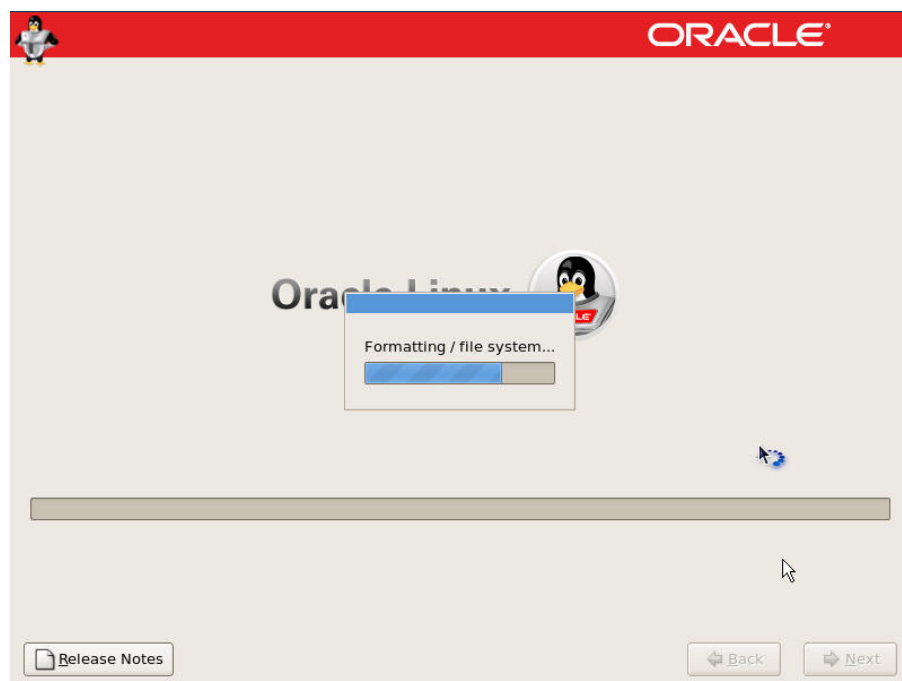
22. Verify that you are ready to begin the installation, and then click Next.

If you need to make any changes, click Back.



23. Wait while the installation proceeds.

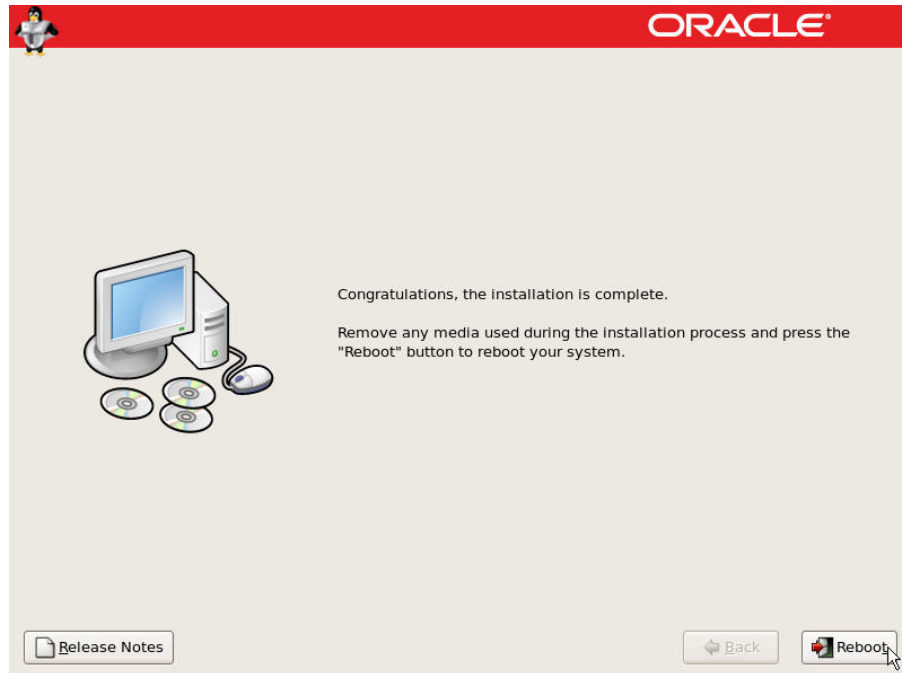
Depending on your specific server configuration, installation may take around 30 minutes.



24. When the Congratulations screen appears, remove the installation media, and then click Reboot.

The graphical installer terminates, and the server reboots.

Note – Once the server reboots, you can view a complete log of your installation in `/root/install.log`.



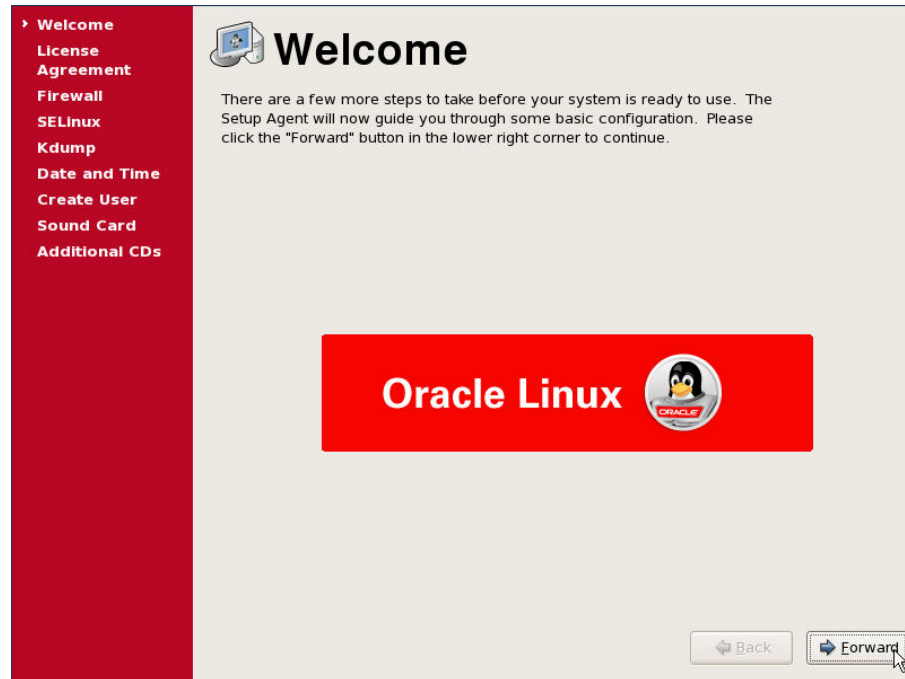
25. Proceed to [“Run the Linux Setup Agent”](#) on page 42.

▼ Run the Linux Setup Agent

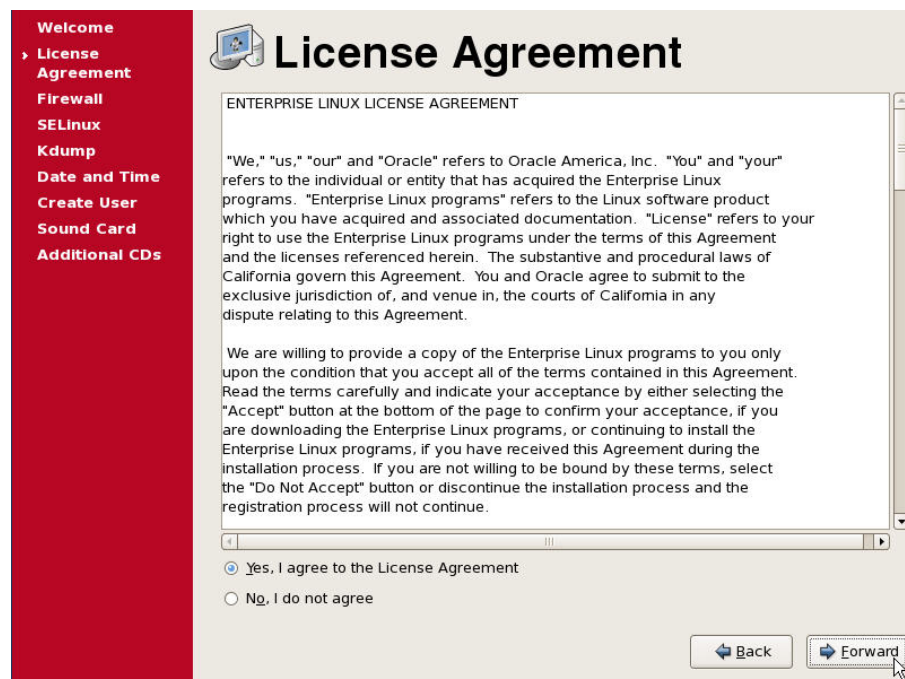
The Linux Setup Agent starts automatically when you reboot the Linux server.

Note – The examples in this procedure use the graphical setup agent for OEL 5u6. If you are installing a different version of Linux or if you are using console mode, the exact steps may vary.

1. On the Welcome screen, click Forward.

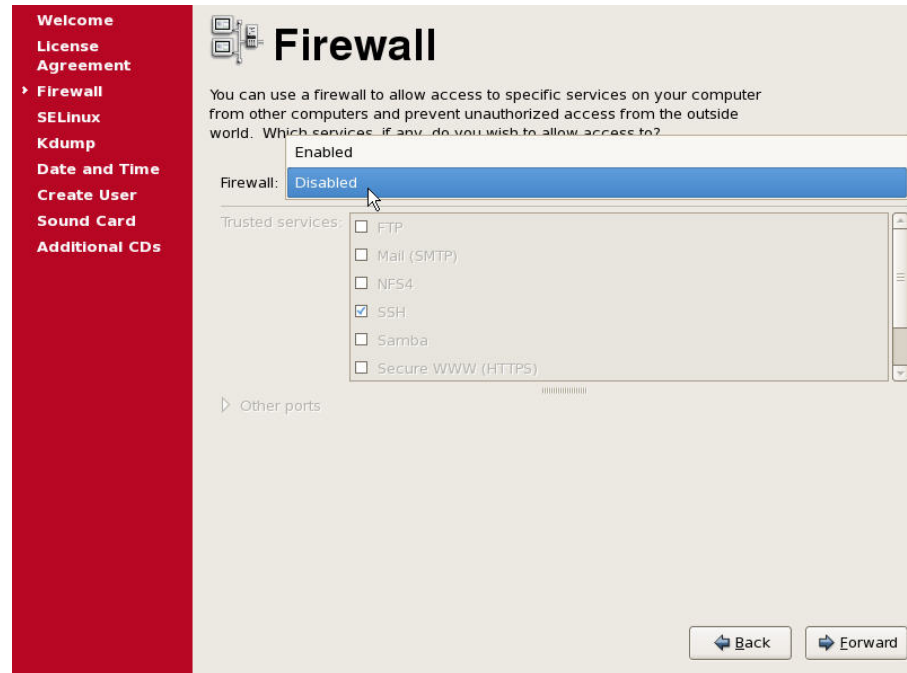


2. Read the License Agreement, select "Yes, I agree...", and then click Forward.

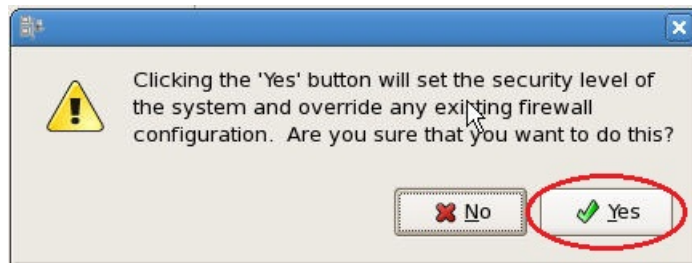


3. On the Firewall screen, select Disabled, and then click Forward.

Note – This is the recommended setting for the STA server. However, you may choose to enable and configure a firewall depending on the requirements at your site.

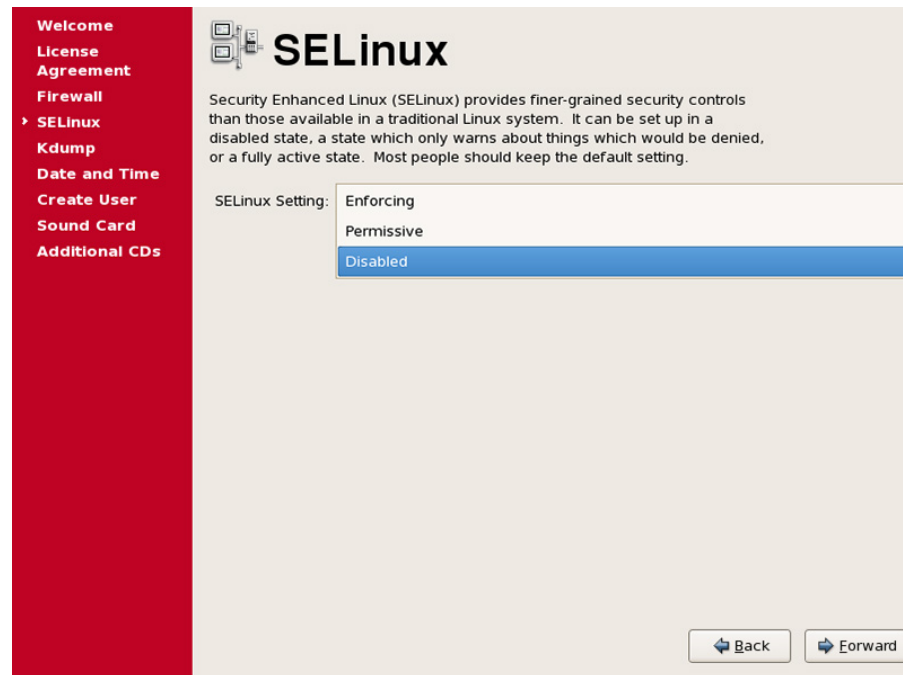


4. In the confirmation dialog box, click Yes.

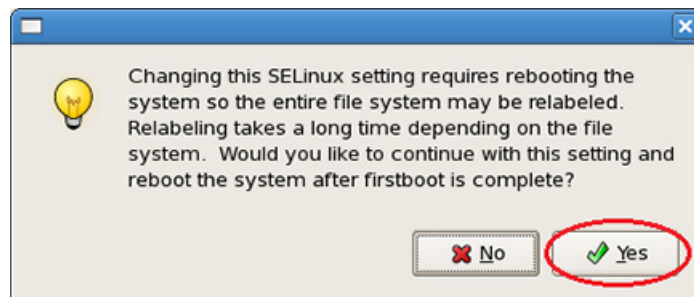


5. On the SELinux screen, select Disabled, and then click Forward.

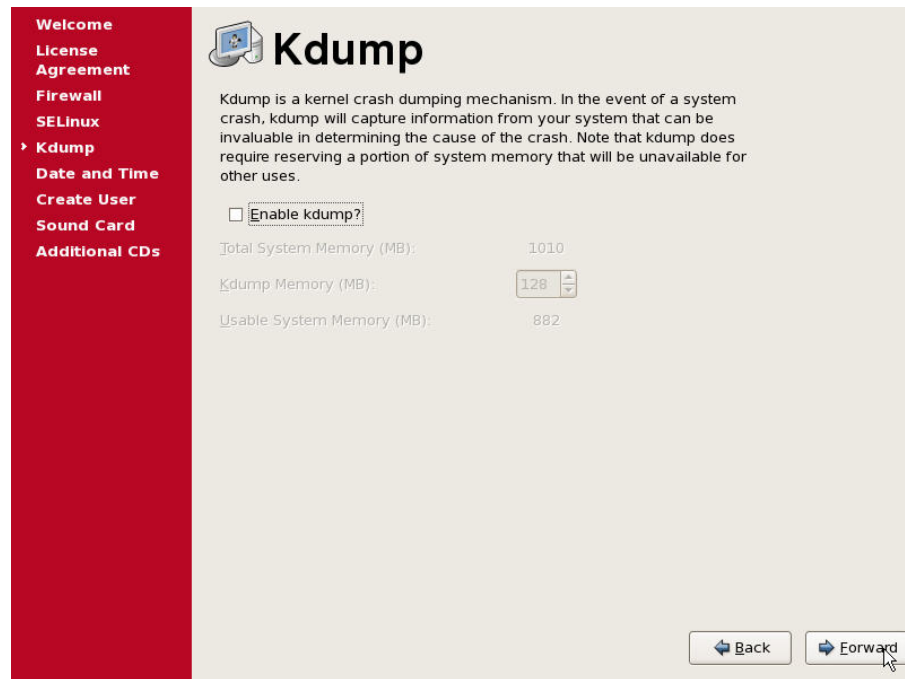
Note – This is the recommended setting for the STA server.



6. In the confirmation dialog box, click Yes.

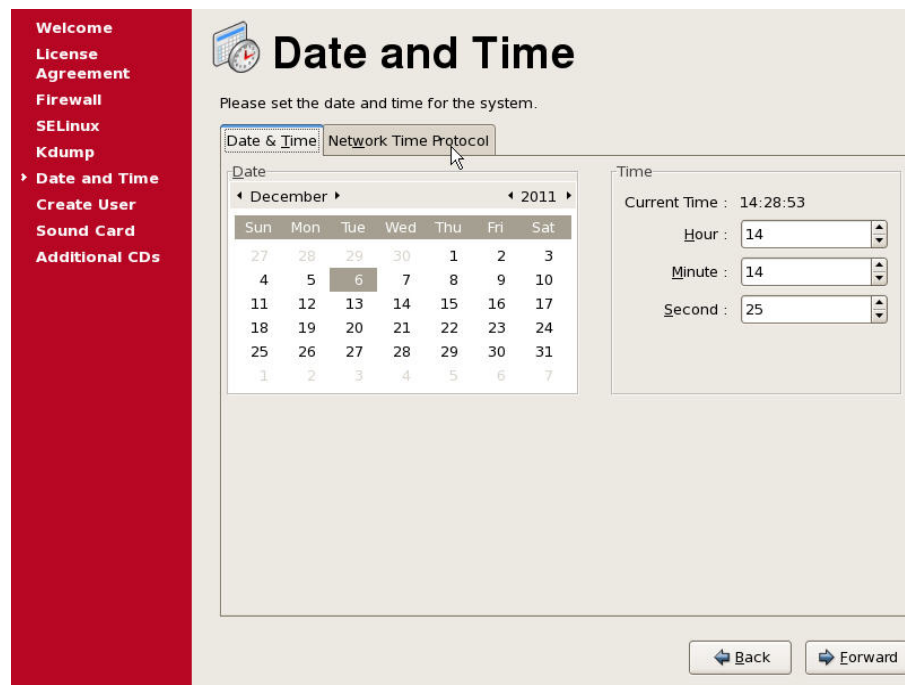


7. On the Kdump screen, do NOT select Enable kdump?, and then click Forward.



8. Set the current date and time, then click the Network Time Protocol tab.

Note – To ensure that STA data and log files are correct, the date and time on the STA server must be correct. Additionally, any library connected to STA must also have the correct time.



9. On the Network Time Protocol tab, select the Enable Network Time Protocol check box, and then enter the NTP server information obtained from your IT administrator. Click Forward.

Welcome
License Agreement
Firewall
SELinux
Kdump
► **Date and Time**
Create User
Sound Card
Additional CDs

Date and Time

Please set the date and time for the system.

Date & Time **Network Time Protocol**

Your computer can synchronize its clock with a remote time server using the Network Time Protocol

☒ Enable Network Time Protocol

NTP Servers

- 0.rhel.pool.ntp.org
- 1.rhel.pool.ntp.org
- 2.rhel.pool.ntp.org

[Add](#) [Edit](#) [Delete](#)

► [Show advanced options](#)

[Back](#) [Forward](#)

10. On the Create User screen, leave the fields blank, and then click Forward.

The STA server does not require a non-administrative user. If you want to add one, you can do so at a later time.

Welcome
License Agreement
Firewall
SELinux
Kdump
► **Date and Time**
Create User
Sound Card
Additional CDs

Create User

It is recommended that you create a 'username' for regular (non-administrative) use of your system. To create a system 'username,' please provide the information requested below.

Username:

Full Name:

Password:

Confirm Password:

If you need to use network authentication, such as Kerberos or NIS, please click the Use Network Login button.

[Use Network Login...](#)

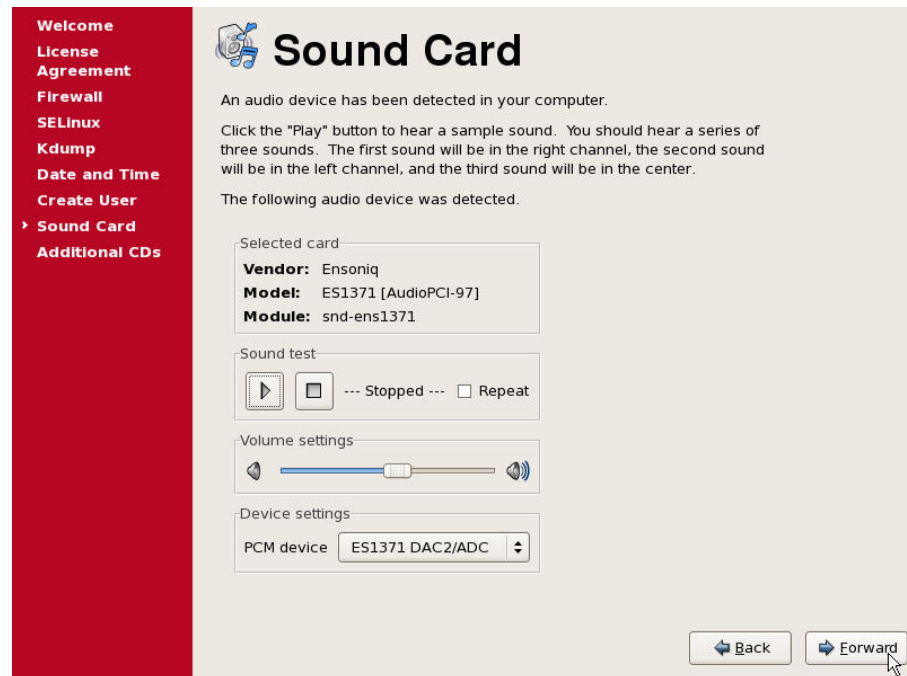
[Back](#) [Forward](#)

11. In the dialog box, click **Continue**.

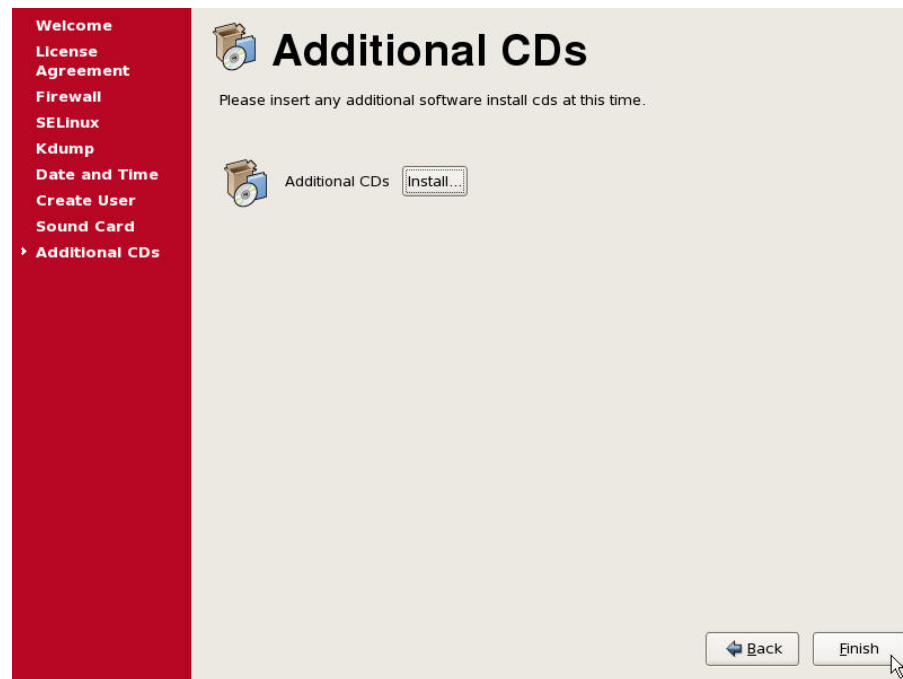


12. On the Sound Card screen, leave all settings as-is, then click **Forward**.

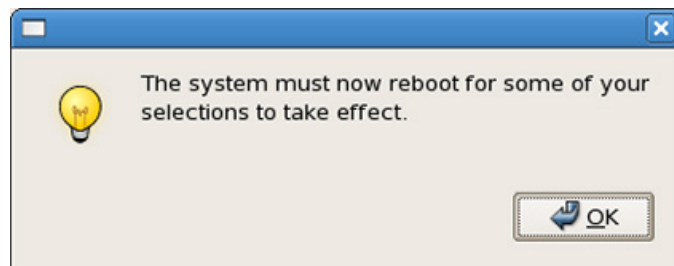
STA does not require sound.



13. On the Additional CDs screen, click **Finish**.



14. In the dialog box, click OK to reboot the system.



15. After the system reboots, log in as the root user.



16. Proceed to “Verify Your Linux Release” on page 49.

▼ Verify Your Linux Release

For informational purposes, use this procedure to confirm the release and update level of Linux installed on the STA server.

Note – For this procedure, you must be logged in as the root user.

1. Open a terminal window on the STA server, and display the Linux release file.

- For Oracle Enterprise Linux:

```
# more /etc/enterprise-release
Enterprise Linux Enterprise Linux Server release 5.6
(Carthage)
```

- For Red Hat Enterprise Linux:

```
# more /etc/redhat-release
Red Hat Enterprise Linux Server release 5.6 (Tikanga)
```

2. Proceed to [“Linux Post-Installation Tasks” on page 50.](#)

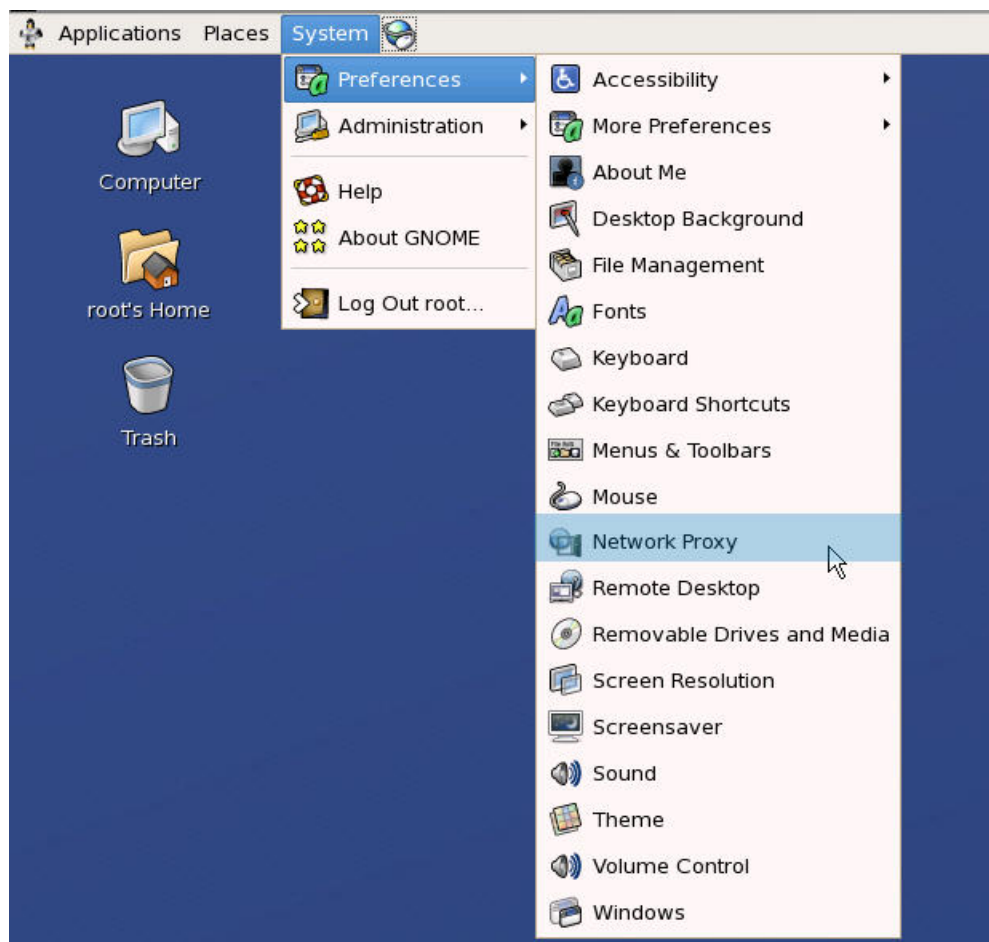
Linux Post-Installation Tasks

- “Set Up the Network Proxy” on page 50
- “Ensure Proper Setup of yum” on page 51
- “Ensure Proper Setup of SSH” on page 52
- “Ensure Availability of Expect” on page 52
- “Ensure Availability of net-snmp-utils” on page 53
- “Ensure Local Browser Functionality” on page 53

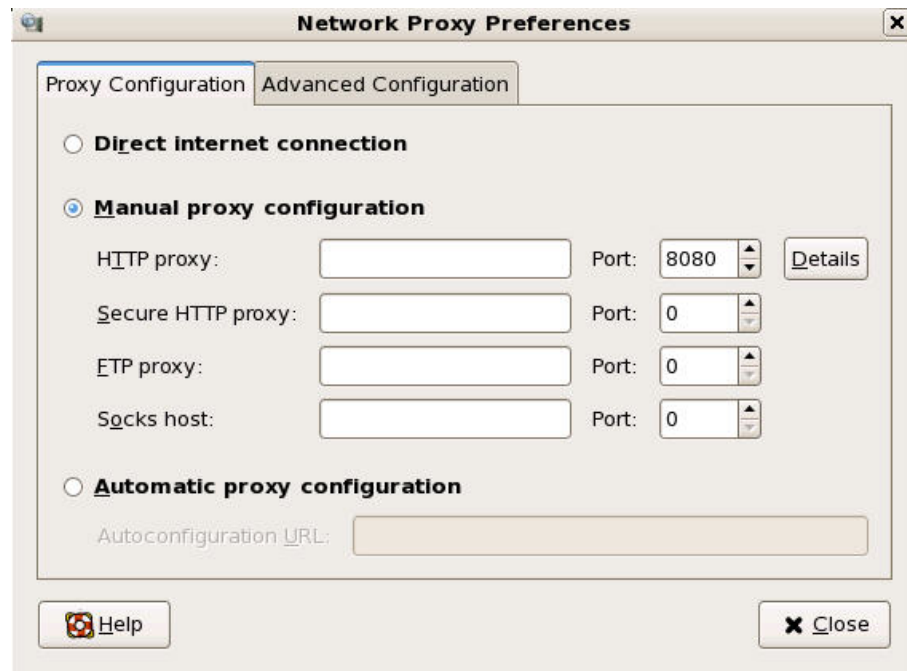
▼ Set Up the Network Proxy

You can configure the server on which STA is installed to connect to the network directly or through a proxy server. The following procedure demonstrates configuring the network proxy settings with the GNOME windowing environment.

1. From the GNOME desktop environment, select **System > Preferences > Network Proxy**.



2. In the Network Proxy Preferences dialog box, specify the appropriate Proxy Configuration. Your specific settings will vary depending on your site requirements.



3. Click Close.
4. Proceed to [“Ensure Proper Setup of yum” on page 51](#).

▼ Ensure Proper Setup of yum

Use this procedure to ensure that yum (Yellowdog Updater, Modified) is configured correctly on the STA server. Yum is used for managing software package updates.

1. Change to the yum repository directory.

```
# cd /etc/yum.repos.d
```

2. Download the latest yum repository file from the yum Website.

```
# wget http://public-yum.oracle.com/public-yum-el5.repo
```

Note – In the above command, the “l” in “el5” is lowercase L.

Note – Each time you run this command, any existing repository files are copied with an extension added to their filenames. Yum always uses the public-yum-el5.repo file with no extension.

3. Open the repository file with a text editor.

```
# vi public-yum-el5.repo
```

4. In the file, locate the entry that matches your Linux version, and enable it by setting `enabled=1`. Disable all other entries by setting `enabled=0`.

For example (OEL, version 5u6):

```
[ol5_u6_base]
name=Oracle Linux $releasever - U6 - $basearch - base
baseurl=http://public-
yum.oracle.com/repo/OracleLinux/OL5/6/base/$basearch/
gpgkey=http://public-yum.oracle.com/RPM-GPG-KEY-oracle-el5
gpgcheck=1
enabled=1
```

5. Save and exit the file.
6. Proceed to [“Ensure Proper Setup of SSH” on page 52.](#)

▼ Ensure Proper Setup of SSH

Use this procedure to ensure that SSH (secure shell) is set up correctly on the STA server. This will speed up transfers of STA database backups to a remote host.

1. Open the SSH configuration file with a text editor.

```
# vi /etc/ssh/sshd_config
```

2. Search for the AddressFamily and UseDNS entries. Modify them so they are NOT preceded with the comment character and their values are as follows:

```
AddressFamily inet
UseDNS no
```

3. Save and exit the file.
4. Restart the sshd daemon.

```
# service sshd restart
```

5. Proceed to [“Ensure Availability of Expect” on page 52.](#)

▼ Ensure Availability of Expect

Use this procedure to install or update the Tcp Expect utilities on the STA server. The Expect utilities are required for the STA database backup and restore utilities. The Expect utilities are part of the standard Linux installation, so they should be available on the server as uninstalled packages.

1. Use yum to check that the Tcl Expect utility packages are available on the server.

```
# yum search expect | grep -i ^expect
```

A listing of expect packages should appear.

2. Install the Expect packages.

```
# yum install expect
```

Follow the prompts to install the packages.

Note – If you receive a message indicating that the expect package is already installed and at the latest version, no further action is necessary.

3. Proceed to [“Ensure Availability of net-snmp-utils” on page 53.](#)

▼ Ensure Availability of net-snmp-utils

The net-snmp-utils package contains a utility (snmpget) useful for troubleshooting library SNMP connections. Use the following procedure to install this package.

Note – SNMP connection troubleshooting is described in the *StorageTek Tape Analytics Configuration Guide*.

1. Use yum to check that the net-snmp-utils package is available on the server.

```
# yum search net-snmp-utils | grep -i ^net-snmp-utils
```

The package should be listed.

2. Install the net-snmp-utils package.

```
# yum install net-snmp-utils
```

Follow the prompts to install the package.

Note – If you receive a message indicating that the net-snmp-utils package is already installed and at the latest version, no further action is necessary.

3. Proceed to “[Ensure Local Browser Functionality](#)” on page 53.

▼ Ensure Local Browser Functionality

The following is optional. If you would like to run the STA application locally on the server, read the information in the following sections.

Note – Oracle does not recommend local access to the STA application due to server performance degradation.

Firefox and Adobe Flash Requirements

To access the STA application locally, you need to ensure you have the following installed:

- Firefox 3.6
- Flash 10 (minimum)

The recommended version of Oracle Enterprise Linux (5u6) already includes Firefox 3.6, but does not include Flash.

To install and verify Flash, see below.

▼ Install Flash

1. Open Firefox.
2. Go to:
<http://get.adobe.com/flashplayer>.
3. Select “.rpm for other Linux”.
4. Click Download Now.
5. Choose to open the file with Software Installer (default).

6. Follow the prompts to install Flash.
7. Restart Firefox.
8. In the address line, enter the following URL:

about:plugins

The displayed plugin list should include Shockwave Flash.

Installing STA

This chapter details the STA installation process. The following topics are discussed:

- “Before Installing STA” on page 56
- “STA User Accounts” on page 59
- “Username and Password Worksheet” on page 60
- “Downloading and Preparing STA” on page 61

Before Installing STA

Before installing STA, take note of the following:

- **STA fresh installation is assumed**

The information in this chapter assumes you are installing the STA software for the first time. If you have already installed STA, and you intend to either upgrade, reinstall, or downgrade the software, you must consult the “Upgrading, Reinstalling, and Downgrading STA” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.

Note – Oracle recommends you install (or upgrade to) the latest version of STA.

- **A dedicated server is required**

Oracle will provide support only if STA is installed on a server dedicated to STA. Do not proceed with installation if you do not intend the server to be dedicated to STA.

- **Existing software must be removed**

You will be prompted to permanently remove all existing software located in the /Oracle/Middleware directory, if found. If the installer detects this directory, allow the installer to remove and reinstall it. If the installer detects an existing MySQL installation, allow the installer to remove it. If you are prompted to overwrite existing files, allow the installer to do so.

Caution – Before choosing to permanently remove or replace existing software, back up files as needed.

STA Pre-Installation Checks

The following STA requirements and recommendations are checked by the installer prior to beginning the installation process.

- **64-bit Linux installed**

The installer will check for 64-bit Linux. Contact your Linux Administrator if you do not have 64-bit Linux installed. See [“Operating System Requirements” on page 18](#) for more information.

- **glibc-devel and rpm-build Linux packages installed**

The installer will check for the glibc-devel package (part of the Development Libraries group) and the rpm-build package (part of the Development Tools group). These should have been installed as per the instructions in [“Installing Linux on the Server” on page 23](#). If these are not installed, contact your Linux Administrator to have them installed before STA installation. For example, the yum installer can be used to install these groups:

```
# yum groupinstall "Development Tools"
# yum groupinstall "Development Libraries"
```


- **SELinux disabled**

The installer will check to see if SELinux is disabled. Oracle highly recommends you disable SELinux before installing STA. If Linux was installed as instructed and recommended in [“Installing Linux on the Server” on page 23](#), SELinux should already be disabled. Contact your Linux Administrator for details.

- **IPTables stopped**

The installer will check to see if IPTables is running on your system. If Linux was installed as instructed in [“Installing Linux on the Server” on page 23](#), by default, IPTables should already be stopped. Contact your Linux Administrator for details.

Note – If IPTables is already running per your site policy, Oracle highly recommends you to stop IPTables before installing STA. Once you have installed STA, configured the libraries, and confirmed STA is monitoring the libraries successfully, you can then re-enable IPTables. You should then test the system again to ensure STA is successfully monitoring the libraries.

You can use the following commands to administer IPTables:

Check IPTables status:

```
# service iptables status
```

If IPTables is running, stop IPTables:

```
# service iptables stop
```

Restart IPTables after STA installation:

```
# service iptables start
```

- **SNMP services deconfigured and stopped**

To avoid network port collisions and other issues, the STA platform must not run other SNMP services.

- The installer will check to see if `snmpd` and `snmptrapd` are running on your system. Oracle highly recommends you stop these services before installing STA.
- The installer will also check to ensure that UDP ports 161 (SNMP) and 162 (SNMPTRAP) are available. If they are not, the installer will quit.

To check the status of, deconfigure, and stop typical SNMP daemon and SNMP trap daemon services, you can issue the following commands:

Check the status of SNMP services:

```
# service snmpd status
# service snmptrapd status
# chkconfig --list snmpd
# chkconfig --list snmptrapd
```

Deconfigure SNMP services:

```
# chkconfig snmpd off
# chkconfig snmptrapd off
```

Stop SNMP services:

```
# service snmptrapd stop  
# service snmpd stop
```

Note – If you receive a “FAILED” error when executing the “service stop” commands, these SNMP services may already be stopped.

STA User Accounts

STA uses the following accounts, which are established during STA installation:

WebLogic accounts (TABLE 4-1) — These two accounts are used to access either the WebLogic console or the STA application GUI via a web browser.

Database accounts (TABLE 4-2) — These four accounts are used to access and manage the STA database.

Note – These account usernames are NOT Linux/Unix users.

TABLE 4-1 WebLogic Accounts

Account/Login	Type	Description
WebLogic Admin Console Login	WebLogic	Used for logging in to the WebLogic console and for making changes to the WebLogic environment. For example, use this account for actions such as connecting WebLogic to a LDAP/RACF server or creating STA GUI users in the WebLogic console.
STA GUI Login	WebLogic	Used for logging in to the STA application.

TABLE 4-2 Database Accounts

Account/Login	Type	Example Username ¹	Description
STA Database Root Account	Database	root	The MySQL root account. Owns the database and is used to create the root DB installation. The pre-set username is root and cannot be changed.
STA Database Application Account	Database	staapp	A user-defined MySQL username that the STA application uses to connect to the database. Used by the STA application. Required to create, update, delete, and read privileges on the STA data tables.
STA Database Reports Account	Database	starpts	A user-defined MySQL username that non-STA and third-party applications may use to connect to the database. Has read-only access to certain STA database tables.
STA Database DBA Account	Database	stadba	A user-defined MySQL username that STA application, administration, and monitoring utilities use to connect to the database for running scheduled backups and configuring for backups. It has all DBA privileges except the “grant option” on all STA tables. This account is used primarily for STA database management activities (for example, backup and restoration).

1. These are example usernames only. Except for the pre-set Database Root Account username (root), select your own usernames during installation.

Username and Password Worksheet

You will be prompted to enter the following usernames and passwords during the STA installation process. These accounts are detailed in the previous section, “[STA User Accounts](#)” on page 59.

Fill out [TABLE 4-3](#) before beginning installation, and then retain this information in a secure location.

Caution – You must make a note of these usernames and passwords. If you lose the WebLogic Admin Console username or password, then STA must be re-installed. The STA Database Root Account password is not retrievable in any way from STA.

Username requirements:

- Must be at least one character long and cannot be a blank

Password requirements:

- Must contain more than seven characters and less than 32 characters
- Cannot contain spaces
- Must contain at least one number or special character, with the exception of:

& () < > ? { } * \ ` " ' , ; : \ /

TABLE 4-3 STA Usernames and Passwords

Description	Type	Username	Password
WebLogic Admin Console Login	WebLogic		
STA GUI Login	WebLogic		
STA Database (MySQL) Root Account	Database	root ¹	
STA Database Application Account	Database		
STA Database Reports Account	Database		
STA Database DBA Account	Database		

1. The STA database root account username is pre-set to root and cannot be changed.

Downloading and Preparing STA

- “Download STA” on page 61
- “Prepare STA for Installation” on page 61

▼ Download STA

1. Start a web browser on the system and access the Oracle Software Delivery Cloud website at the following URL:
<http://edelivery.oracle.com/>
2. Click Sign In/Register.
3. Enter the user ID and password provided by your Oracle support representative.
4. On the Terms & Restrictions screen, make the following entries:
 - a. Read the License Agreement and Export Restrictions, and select the check boxes to indicate your acceptance.
 - b. Click Continue.
5. Perform the following steps on the Media Pack Search screen:
 - a. In the Select a Product Pack menu, select Oracle StorageTek Products.
 - b. In the Platform menu, select Generic Platform.
 - c. Click Go.
6. Oracle StorageTek Tape Analytics will be shown in the list. Select it and click Continue.
7. Click the Download button.
8. Save the media pack .zip file to the location of your choice.
9. Proceed to “[Prepare STA for Installation](#)” on page 61.

▼ Prepare STA for Installation

1. 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
2. Copy or move the STA .tar file to any location on the target system (for example, root).
3. Untar the .tar archive using the following command:


```
# tar xvf STA_filename.tar
```
4. Proceed to “[Installing STA](#)” on page 62.

Installing STA

You can install STA with the graphical installer or console installer:

- “Install Using the Graphical Installer (Recommended)” on page 62
- “Install Using the Console Installer” on page 72

Note – If you are upgrading, reinstalling, or downgrading STA, see the “Upgrading, Reinstalling, and Downgrading STA” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.

▼ Install 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:

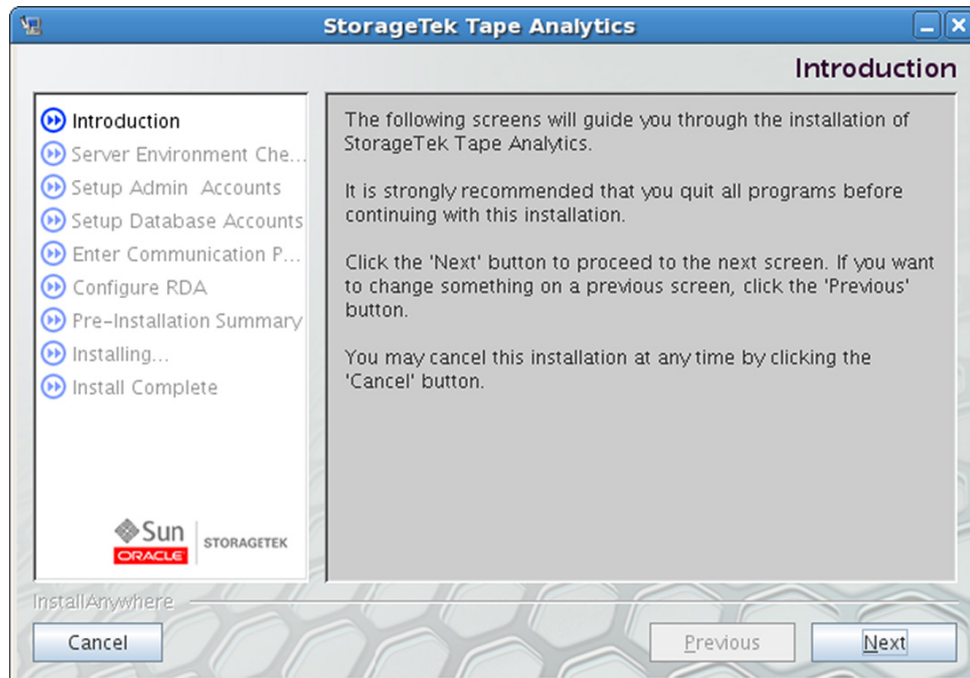
```
# cd Disk1
```

3. As root, launch the installer:

```
# ./install
```

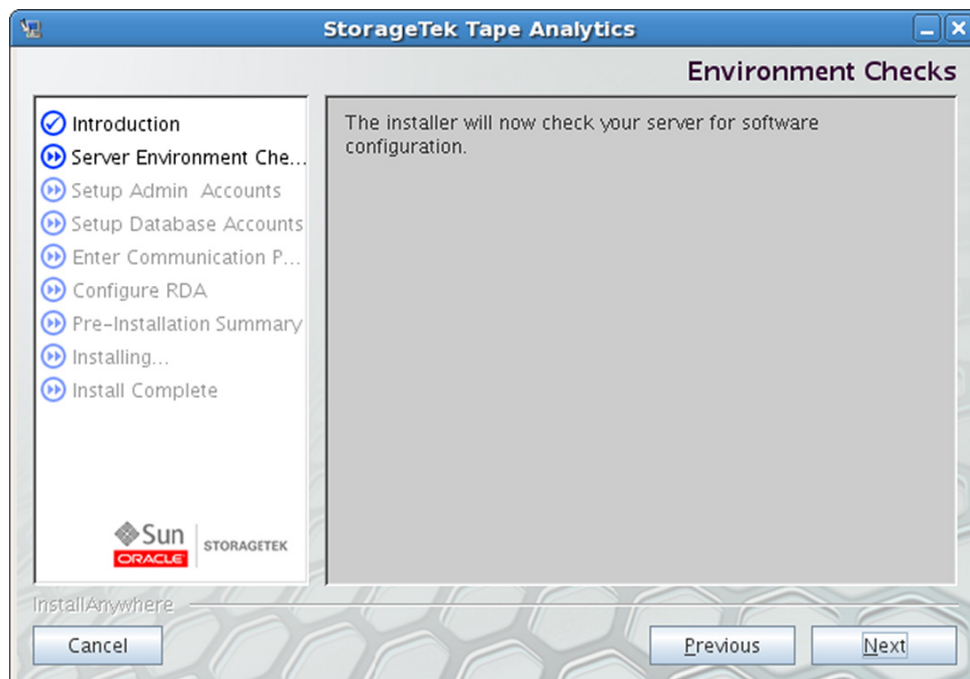


4. Read the text on the Introduction screen, then click Next.



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

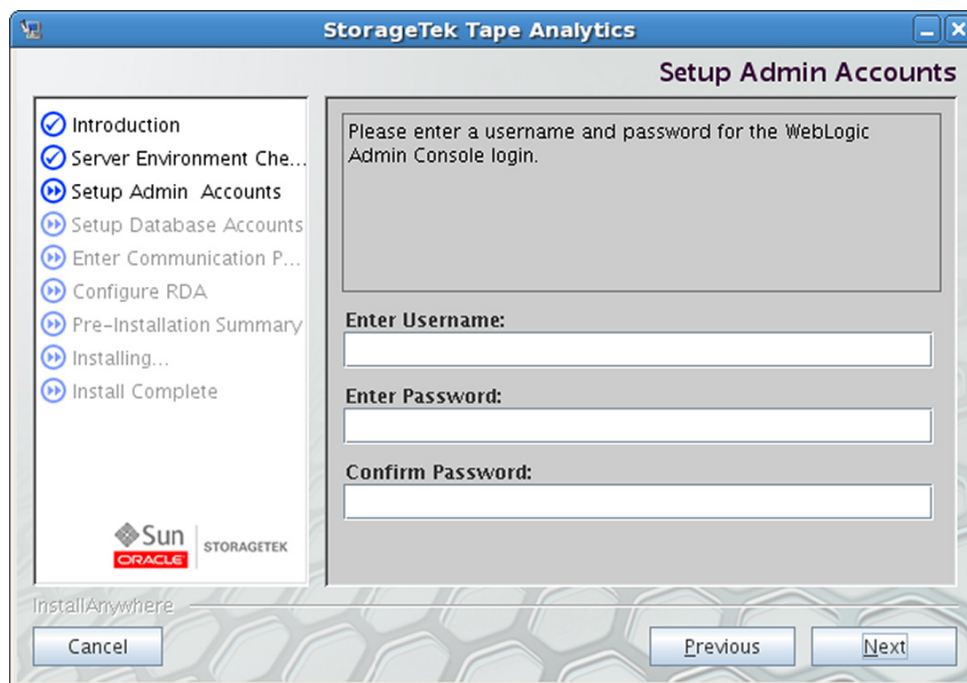
Caution – If the installer detects existing software (/Oracle/Middleware directory or MySQL), or you receive any other messages relating to your environment, see [“Before Installing STA”](#) on page 56 before proceeding.



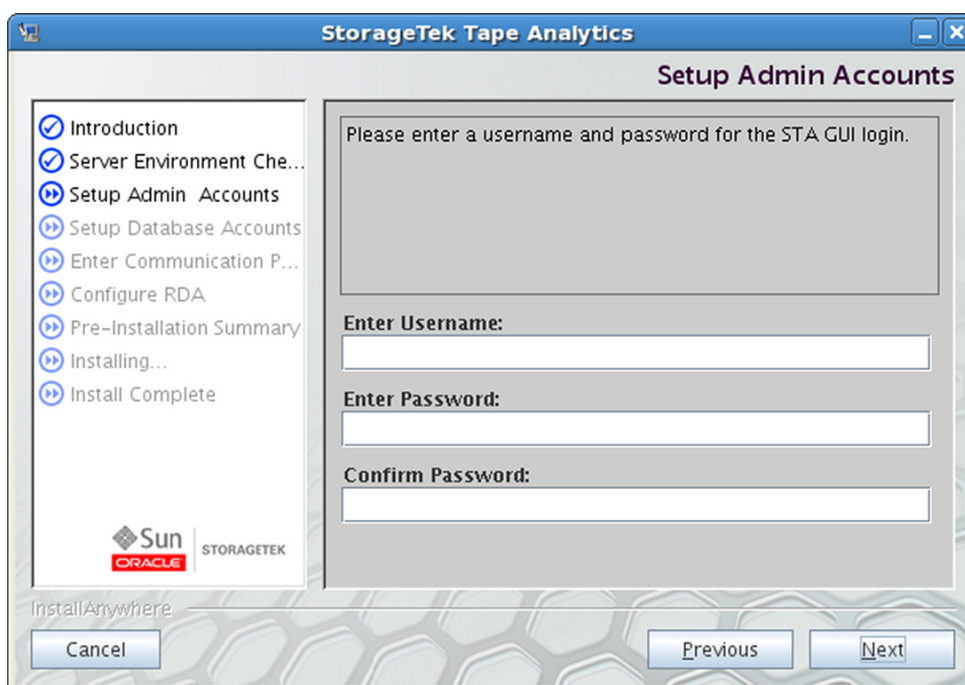
6. Read the text on the **Setup Admin Accounts** screen, then click **Next**.



7. Enter a username and password for the WebLogic Admin Console login. Click Next.

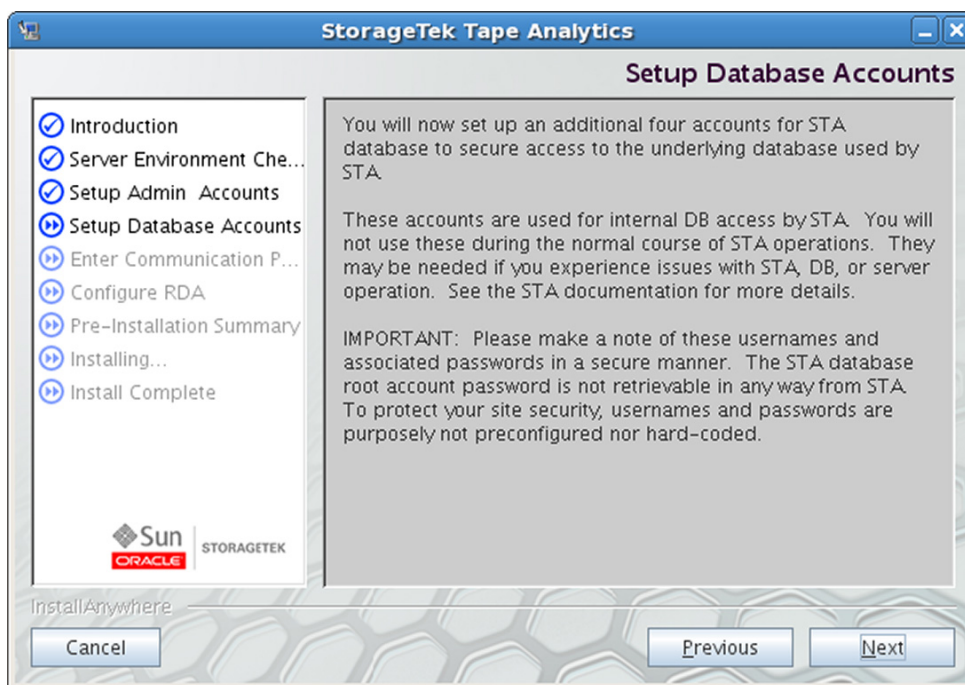


8. Enter a username and password for the STA GUI login. Click Next.

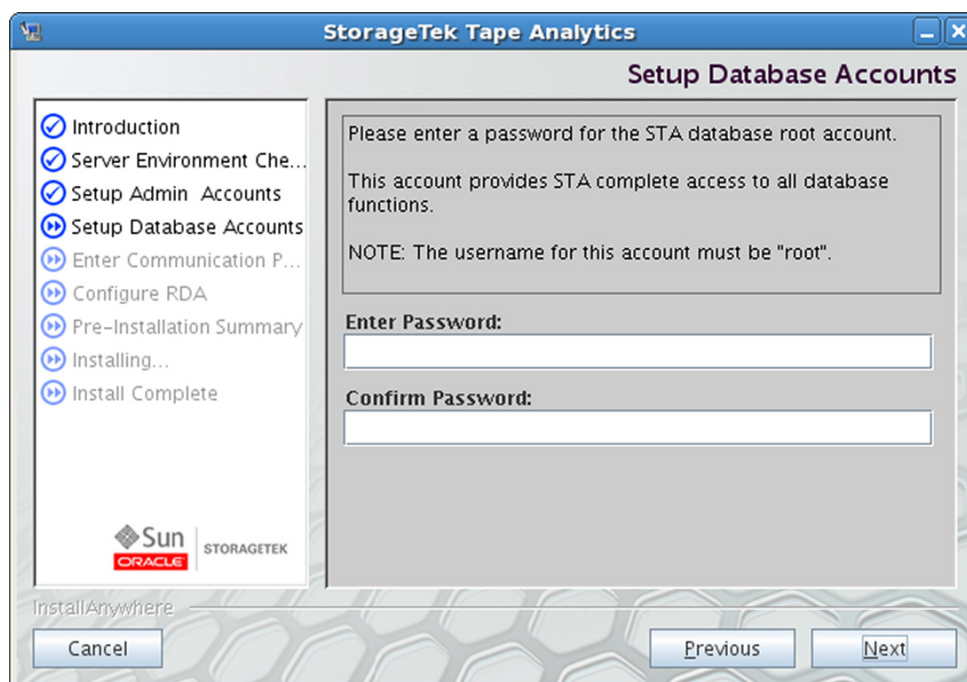


9. Read the text on the Setup Database Accounts screen, and then click Next.

Note – If you ever need to change the database account passwords you establish in the following steps, see the “Password Administration” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.



10. Enter a password for the STA database root account. Click Next.



The screenshot shows the 'StorageTek Tape Analytics' window with the 'Setup Database Accounts' tab selected. On the left, a list of installation steps includes 'Setup Database Accounts' which is highlighted. The main area contains instructions to enter a password for the STA database root account, noting that the username must be 'root'. There are two input fields: 'Enter Password:' and 'Confirm Password:'. At the bottom, there are 'Cancel', 'Previous', and 'Next' buttons.

StorageTek Tape Analytics

Setup Database Accounts

Please enter a password for the STA database root account.

This account provides STA complete access to all database functions.

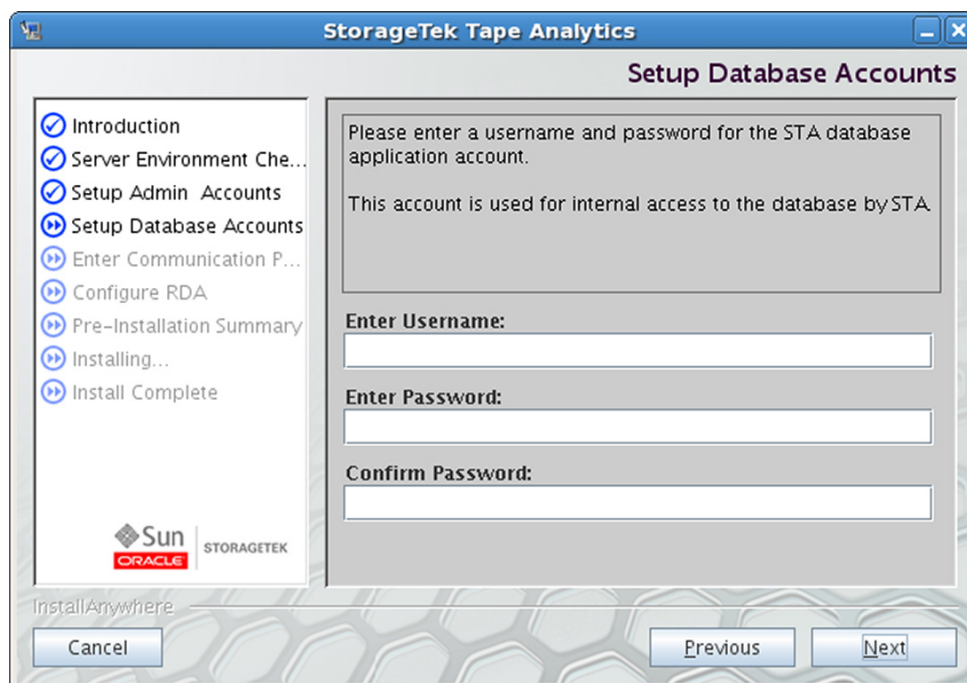
NOTE: The username for this account must be "root".

Enter Password:

Confirm Password:

Cancel Previous Next

11. Enter a username and password for the STA database application account. Click Next.



The screenshot shows the 'StorageTek Tape Analytics' window with the 'Setup Database Accounts' tab selected. The left-hand list of steps is the same as in the previous window. The main area now prompts the user to enter a username and password for the STA database application account, stating it is for internal access. There are three input fields: 'Enter Username:', 'Enter Password:', and 'Confirm Password:'. The 'Next' button is highlighted. At the bottom, there are 'Cancel', 'Previous', and 'Next' buttons.

StorageTek Tape Analytics

Setup Database Accounts

Please enter a username and password for the STA database application account.

This account is used for internal access to the database by STA.

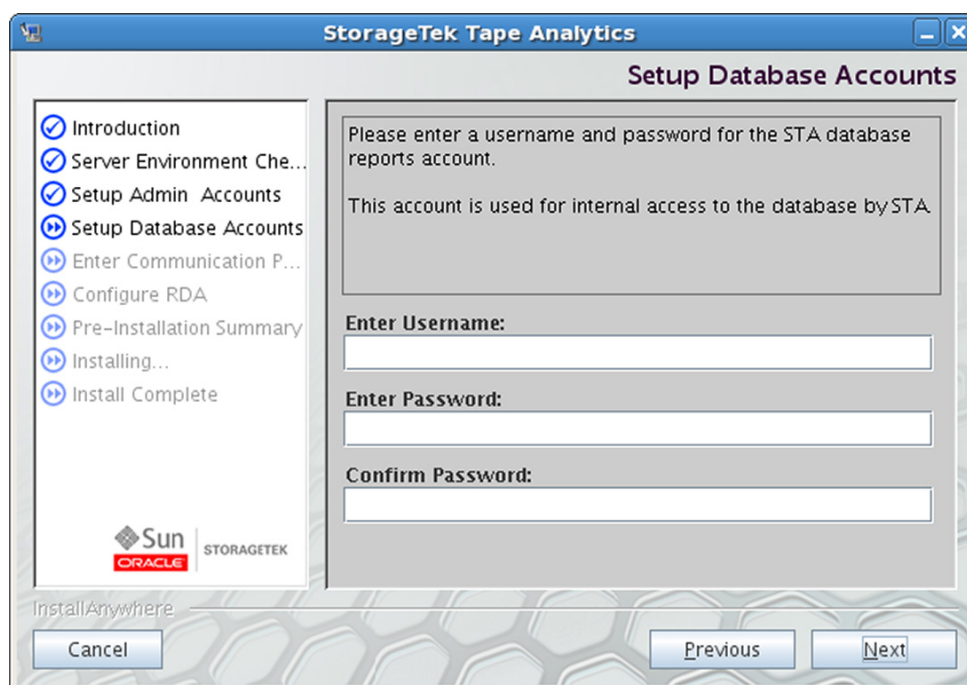
Enter Username:

Enter Password:

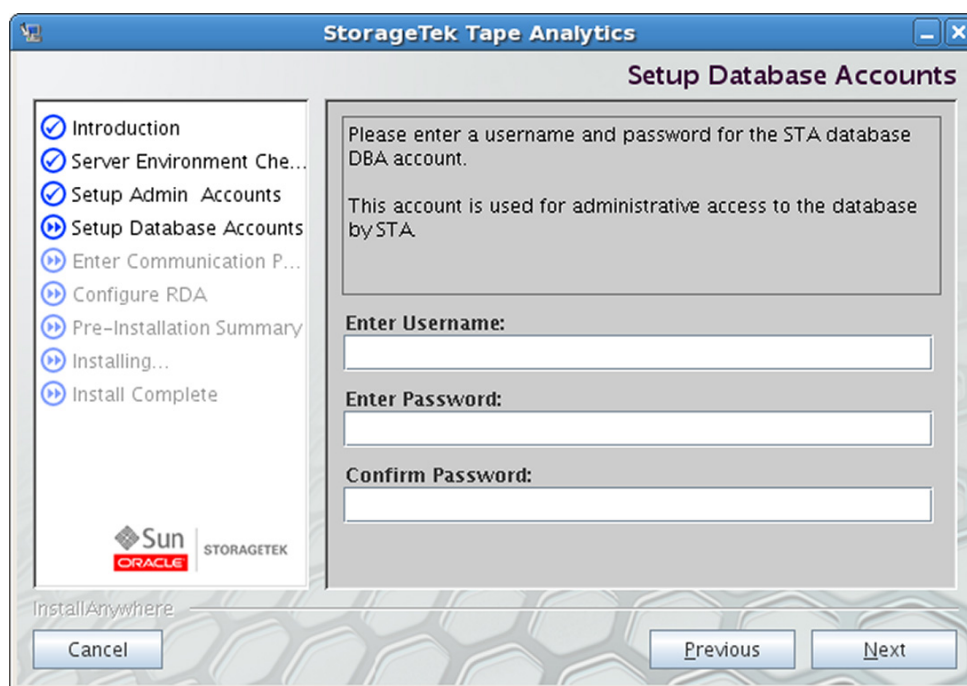
Confirm Password:

Cancel Previous Next

12. Enter a username and password for the STA database reports account. Click Next.



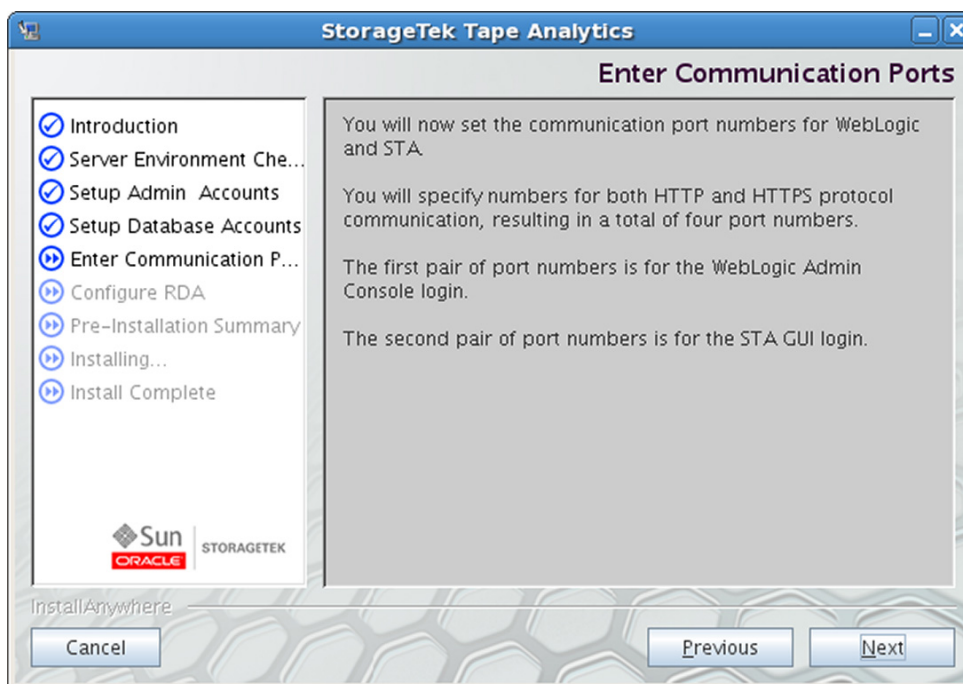
13. Enter a username and password for the STA database DBA account. Click Next.



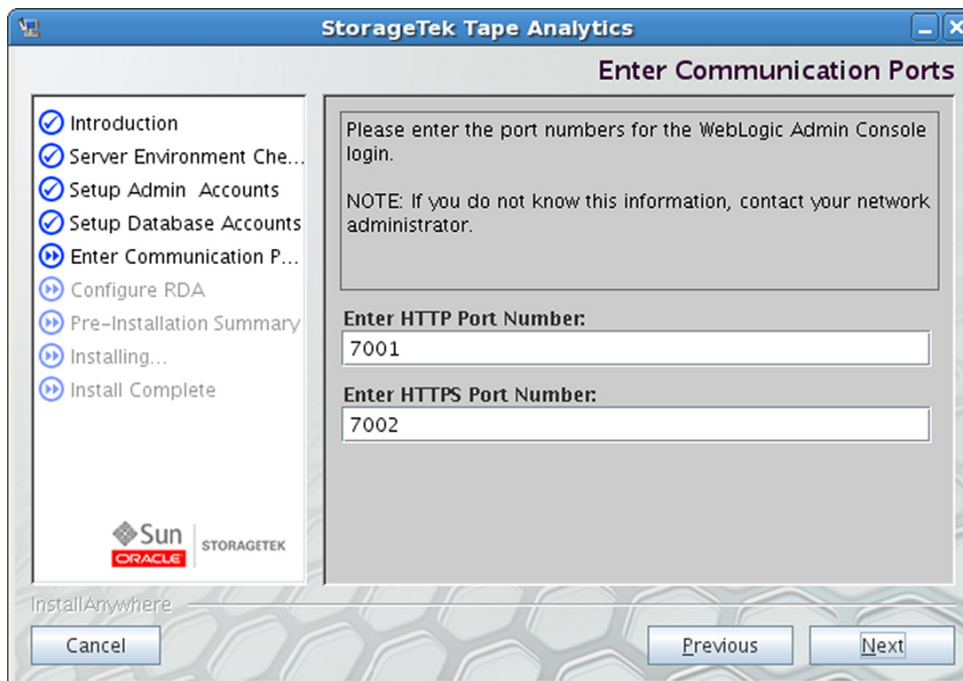
14. Read the text on the Enter Communication Ports screen, and then click Next.

Note – If you are unsure about what port numbers to choose, contact your network administrator before proceeding.

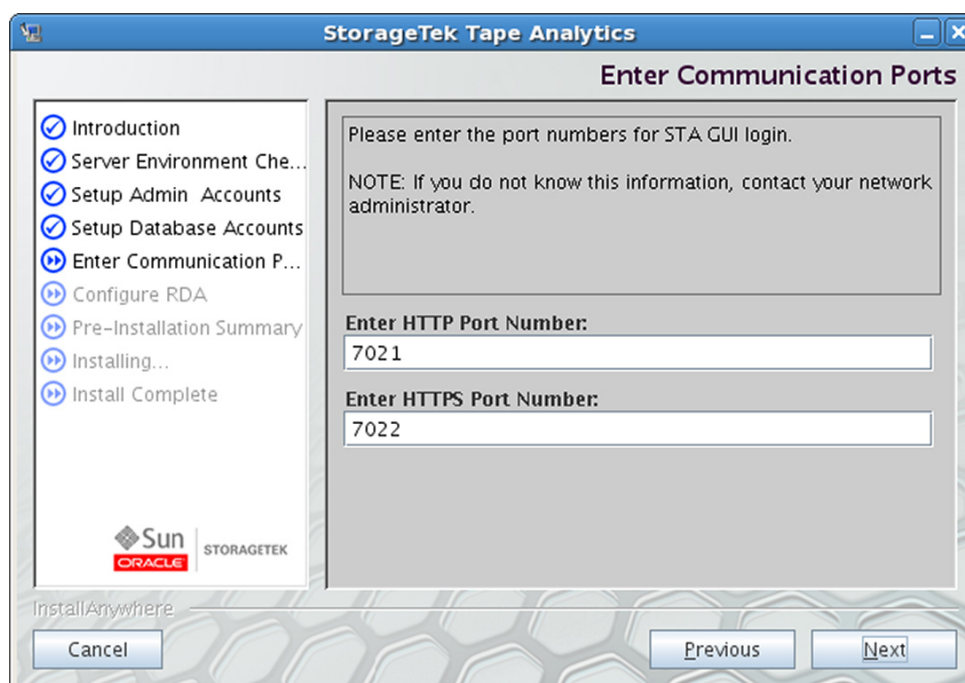
Note – To ensure communication integrity of STA, once these four port values are chosen during STA installation, they must NOT be manually changed at a later time.



15. On the Enter Communication Ports screen, enter the port numbers for the WebLogic Admin Console login. The defaults are 7001 and 7002. Click Next.

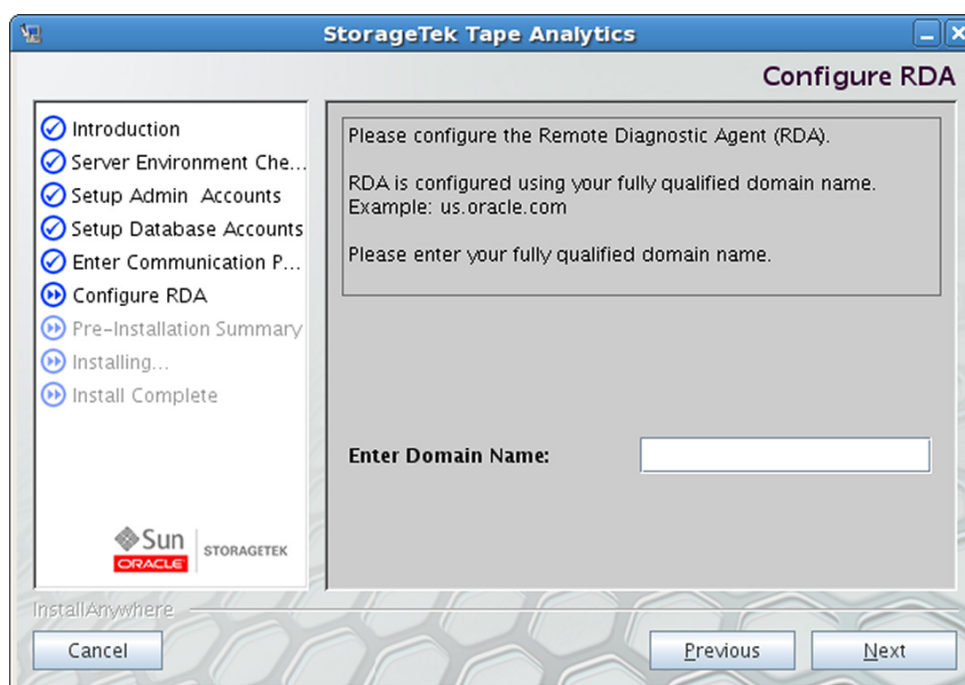


16. On the Enter Communication Ports screen, enter the port numbers for the STA GUI login. The defaults are 7021 and 7022. Click Next.



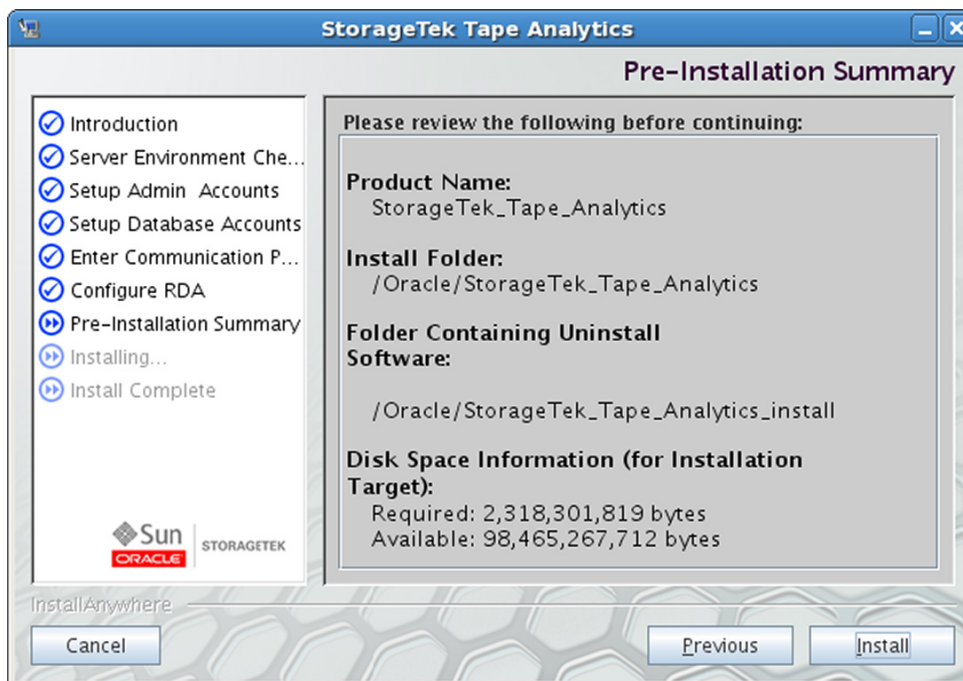
17. On the **Configure RDA** screen, enter your organization's domain name (for example, `us.oracle.com`). Click **Next**.

Note – For information about RDA, see the “Logging” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.

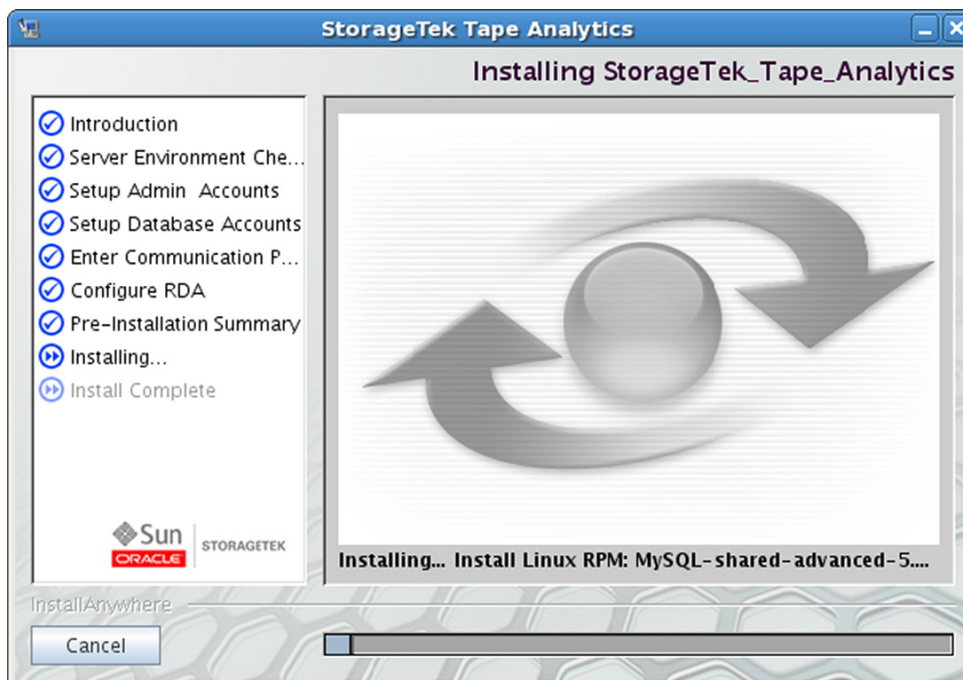


18. Review the **Pre-Installation Summary** screen. When ready, click **Install**.

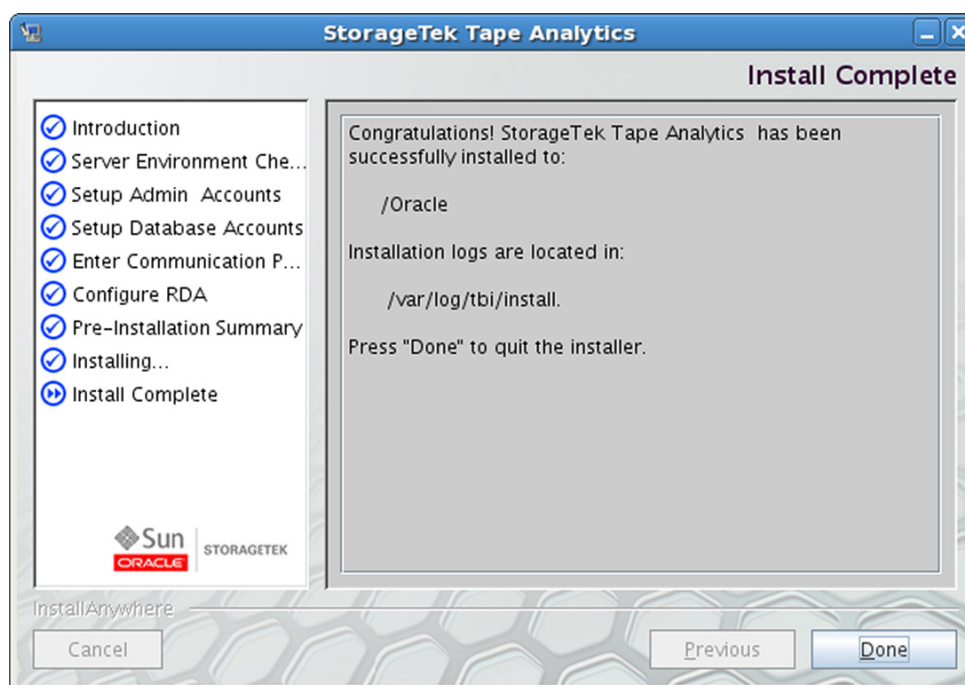
Note – Changes to your system are not implemented until you click Install. You can click Previous to change any settings.



19. As components are installed, you will see notices showing the installation progress.



20. Click Done on the Install Complete screen.



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

Note – For more information about the **STA** command, see the “Server Administration” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.

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

22. STA installation is complete. You may now configure STA using the *StorageTek Tape Analytics Configuration Guide*.

▼ Install 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 Introduction information, and then press Enter.

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

This installation program will guide you through the
installation of StorageTek_Tape_Analytics.

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

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

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

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

PRESS <ENTER> TO CONTINUE:
```

4. Press Enter following the Environment Checks information. The STA installer will check your environment for existing software and settings.

Caution – If the installer detects existing software (/Oracle/Middleware directory or MySQL), or you receive any other messages relating to your environment, see [“Before Installing STA” on page 56](#) before proceeding.

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

The installer will now check your server for software
configuration.

PRESS <ENTER> TO CONTINUE:
```

5. Read the WebLogic introduction information, then press Enter.

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

You will now set up two separate usernames and passwords for
internal use with STA.

The first username/password is for the WebLogic Admin Console
login. The WebLogic application server hosts the STA
application. This username is limited to application
configuration tasks and is infrequently used.

The second username/password is for the STA GUI login. This
username has access to all the features of STA. It is used every
time you access STA.

IMPORTANT: Please make a note of these usernames and associated
passwords in a secure manner. If you lose the WebLogic Admin
Console username or password, then STA must be re-installed. To
protect your site security, usernames and passwords are
purposely not preconfigured nor hard-coded.

PRESS <ENTER> TO CONTINUE:
```

6. Enter a username and password for the WebLogic Admin Console login.

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

Please enter a username for the WebLogic Admin Console login.

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

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

Please enter a password for the WebLogic Admin Console login.
Username: "username"

Enter Password:

=====
Confirm Password
-----

Please confirm the password for the WebLogic Admin Console
login.
Username: "username"

Confirm Password:
```

7. Enter a username and password for the STA GUI login. Press Enter.

```

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

Please enter a username for the STA GUI login.

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

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

Please enter a password for the STA GUI login.
Username: "username"

Enter Password:

=====
Confirm Password
-----

Please confirm the password for the STA GUI login username.
Username: "username"

Confirm Password:

```

8. Read the Database Introduction information, then press Enter.

Note – If you ever need to change the database account passwords you establish in the following steps, see the “Password Administration” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.

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

You will now set up an additional four accounts for STA database
access to secure access to the underlying database used by STA.

These accounts are used for internal DB access by STA.  You will
not use these during the normal course of STA operations.  They
may be needed if you experience issues with STA, DB, or server
operation.  See the STA documentation for more details.

IMPORTANT: Please make a note of these usernames and associated
passwords in a secure manner.  The STA database root account
password is not retrievable in any way from STA.  To protect
your site security, usernames and passwords are purposely not
preconfigured nor hard-coded.

PRESS <ENTER> TO CONTINUE:
```

9. Enter and confirm a password for the STA database root account.

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

Please enter a password for the STA database root account.

This account provides STA complete access to all database
functions.

NOTE: The username for this account must be "root".


Type Password:

=====
Confirm Password
-----

Please confirm the password for the STA database root account.
Username: root

Confirm Password:
```

10. Enter a username and password for the STA database application account, then confirm the password.

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

Please enter a username and password for the STA database
application account.

This account is used for internal access to the database by STA.

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

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

Please enter a password for the STA database application
account.
Username: "username"

Type Password:

=====
Confirm Password
-----

Please confirm the password for the STA database application
account.
Username: "username"

Confirm Password:
```

11. Enter a username and password for the STA database reports account, then confirm the password.

```

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

Please enter a username and password for the STA database
reports account.

This account is used for internal access to the database by STA.

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

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

Please enter a password for the STA database reports account.
Username: "username"

Type Password:

=====
Confirm Password
-----

Please confirm the password for the STA database reports user
account.
Username: "username"

Confirm Password:

```

12. Enter a username and password for the STA database DBA account, then confirm the password.

```

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

Please enter a username and password for the STA database DBA
account.

This account is used for administrative access to the database
by STA.

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

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

Please enter a password for the STA database DBA account.
Username: "username"

Type Password:

=====
Confirm Password
-----

Please confirm the password for the STA database DBA account.
Username: "username"

Confirm Password:

```

13. Read the Enter Communication Ports information, then press Enter.

Note – If you are unsure about what port numbers to choose, contact your network administrator before proceeding.

Note – To ensure communication integrity of STA, once these four port values are chosen during STA installation, they must NOT be manually changed at a later time.


```

=====
Enter Communication Ports
-----

You will now set the communication port numbers for WebLogic and
STA.

You will specify numbers for both HTTP and HTTPS protocol
communication, resulting in a total of four port numbers.

The first pair of port numbers is for the WebLogic Admin Console
login.

The second pair of port numbers is for the STA GUI login.

PRESS <ENTER> TO CONTINUE:

```

14. Enter the HTTP port number for the WebLogic Admin Console login.

```

=====
WebLogic Admin Console Login HTTP Port
-----

Please enter the HTTP port number for the WebLogic Admin Console
login.

NOTE: If you do not know this information, contact your network
administrator.

WebLogic Admin Console login HTTP  port number (DEFAULT: 7001):

```

15. Enter the HTTPS port number for the WebLogic Admin Console login.

```
=====
WebLogic Admin Console Login HTTPS Port
-----

Please enter the HTTPS port number for the WebLogic Admin
Console login.

NOTE: If you do not know this information, contact your network
administrator.

Weblogic Admin Console login HTTPS port number (DEFAULT: 7002):
```

16. Enter the HTTP port number for the STA GUI login.

```
=====
STA GUI Login HTTP Port
-----

Please enter the HTTP port number for the STA GUI login.

NOTE: If you do not know this information, contact your network
administrator.

STA GUI login HTTP port number (DEFAULT: 7021):
```

17. Enter the HTTPS port number for the STA GUI login.

```
=====
STA GUI Login HTTPS Port
-----

Please enter the HTTPS port number for the STA GUI login.

STA GUI login HTTPS port number (DEFAULT: 7022):
```

18. Enter your organization's domain name following the Configure RDA information (for example, us.oracle.com).

Note – For information about RDA, see the “Logging” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.

```
=====
Configure RDA
-----

Please configure the Remote Diagnostic Agent (RDA).

RDA is configured using your fully qualified domain name.
Example: us.oracle.com

Please enter your fully qualified domain name.

Enter Domain: (DEFAULT: <User Input Required>): <domain>
```

19. Read and verify the Pre-Installation Summary information, then press Enter to begin installation.

```

=====
Pre-Installation 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...
-----
[=====|=====|=====]
[-----|-----|-----]

```

20. Press Enter following the Installation Complete information.

```

=====
Installation Complete
-----

Congratulations! StorageTek Tape Analytics has been
successfully installed to:

/Oracle

Installation logs are located in:

/var/log/tbi/install.

PRESS <ENTER> TO EXIT THE INSTALLER:

```

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

Note – For more information about the **STA** command, see the “Server Administration” chapter within the *StorageTek Tape Analytics Administration Reference Guide*.

```

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

```

22. STA installation is complete. You may now configure STA using the *StorageTek Tape Analytics Configuration Guide*.

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